



**EXPERT EVALUATION NETWORK
DELIVERING POLICY ANALYSIS ON THE
PERFORMANCE OF COHESION POLICY 2007–2013**

TASK 1: POLICY PAPER ON INNOVATION

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1 EXECUTIVE SUMMARY

In Belgium, which is a federal state, the three regions have full autonomy over the design and implementation of research and innovation policy. Each region therefore has its own strategy in this regard and its own broad set of policy measures.

The objectives of innovation policy over the next few years are set out in by the “Marshall Plan 2.Green” for the Walloon region, the “Regional Innovation Plan” for the Brussels region and the “Flanders in Action Plan” for the Flemish region. Although innovation is considered as a horizontal policy goal, innovation support in all three regions is also targeted at specific sectors and technologies.

Overall, the allocation of ERDF resources to innovation policy amounts to over a third of the total funding received though the share varies between Competitiveness and Employment regions, where it is around 40%, and the Convergence region of Hainaut, where it is only 26%. In the latter and the rest of the Walloon region, the main aim of ERDF co-financed initiatives is to support the region’s poles of competitiveness policy, directing funding at increasing knowledge creation and the development of high value-added activities in selected sectors. In the Flemish region, ERDF resources are mainly allocated to “soft” initiatives such as innovation awareness raising campaigns, guidance for enterprises and individuals wanting to put an idea into practice and supporting networking, partnership and cooperation. In the Brussels region, ERDF co-financed innovation policy initiatives are directed at the development of the Brussels’ urban pole of development based on “green activities” and the development of environmental technologies.

Despite the fact that no evaluation has so far been carried out, evidence provided by the managing authorities suggests that overall programmes are proceeding satisfactorily though the targets set for 2010 in terms of output have not been achieved for all initiatives. Because of budgetary restrictions following the crisis, the Brussels Region is not currently able to provide the necessary co-financing for all projects which is the reason why some measures have been delayed.

Evaluation evidence from previous periods tends to indicate that R&D and innovation policies supported by the ERDF in the Walloon and the Flemish region are appropriate and performing well. These evaluations provide however little insight as regards wider effects and opportunity costs.

A major weakness of the innovation system in Belgium is its fragmentation and the lack of inter-regional cooperation which limits spill-over effects and economies of scale. Although politicians insist on the need to increase cooperation, each region has its own poles of competitiveness policy focusing broadly on the same sectors. This is likely to be suboptimal and prevent a critical mass from being achieved. Other obstacles also need to be overcome for innovation policy to be more effective such as the high level of taxes and the limited availability of skills in science and engineering, but these cannot be tackled by innovation policy alone. A broader policy approach is needed to improve the innovation environment.

2 NATIONAL AND REGIONAL INNOVATION POLICY AND THE CONTRIBUTION OF ERDF

2.1 NATIONAL AND REGIONAL INNOVATION POLICY

Belgium is a federal state composed of 3 regions (Flanders, Wallonia, Brussels–Capital) and 3 communities (Flemish–, French– and German–speaking). R&D and innovation policies are fully decentralised. Regions have authority over research policy for economic development purposes and so, accordingly, over technological development and innovation. Communities are responsible for education and fundamental research in universities and colleges. In practice therefore, innovation policy is designed and implemented by the three regional governments in a fully decentralised and independent way. The federal government has limited scope for action, other than through fiscal incentives to scientific and industrial research, social contribution deductions for researchers (both private and public) and intellectual property rights.

In the *Walloon region*, the so-called “Marshall Plan 2.Green” (amounting to EUR 1,620 million) defines the development strategy for the period 2010–2014. Support for R&D and innovation accounts for a third of the overall budget and is mainly devoted to the development of ‘poles’ of competitiveness in 6 areas of technology: health (“Biowin”), agro–industry (“Wagralim”), mechanical engineering (“Mecatech”), aeronautics and space (“Skywin”), transport and logistics (“Logistics in Wallonia”) and, since 2010, environmental technologies. Largely based on innovation partnerships, the poles of competitiveness policy is seen as an efficient means of increasing cooperation in general, strengthening public–public and public–private research partnerships, avoiding excessive dispersion of effort and increasing the critical mass needed for improving competitiveness.

The innovation policy of the region and in particular the so-called “Mobilising programmes” which focus scientific potential are mainly targeted at universities and large enterprises rather than SMEs. In order to support the diffusion of technology and to increase the innovation capacity of local firms, the region has implemented a series of initiatives including the so-called FIRST support schemes for the exchange or temporary assignment of skilled researchers and innovation specialists from university/research centres to enterprises. ERDF support is broadly complementary to the regional innovation strategy insofar as the main focus is on the “valorisation” of research by local enterprises and on support to enterprises.

In the *Brussels Capital region*, innovation policy is relatively recent, the legal bases for support of innovation being created only in 2002. The Regional Innovation Plan 2007–2013 sets out the priorities: for supporting innovation and R&D in enterprises and universities in the region in three specific areas – health, ICT and the environment. Research and innovation in enterprises is supported through the financing of industrial and pre-competitive research, technical feasibility studies and patent applications and maintenance. University R&D is supported in particular through the financing of research projects and collaborations (“programme impulse”, “prospective Belgium Final Draft, August 2010

research for Brussels”), support to spin-offs and financial incentives to attract researchers from abroad, including Belgians working abroad (“brains back to Brussels”, “research in Brussels”). This initiative is expected to help improve the quality of research carried out in universities in the region and to increase their international reputation so to improve access to funding.

Since 2009, the basis for innovation policy in the *Flemish region* has been the “Flanders in Action Plan” for development of the region. The emphasis is on innovation as a horizontal policy goal and as an engine of competitiveness and, therefore, there is no “R&D and innovation” policy as such. More than in the past, support for innovation is targeted at SMEs, the aim being to increase awareness, improve access to technological knowledge and to diffuse new technology. The Cooperative Innovation Networks (VIS) play a central role in this respect, being aimed at stimulating technological innovation in enterprises in the region, in particular through partnerships and cooperation. The Flemish Competence and Research Centres are integrated into these. At the same time, the region also places a strong focus on Strategic Basic Research that promises economic benefits in the longer term (IMEC – micro and nano electronics; VIB – biotechnology and life science; VITO – energy, environment and materials, IBBT – broadband services and ICT).

A recent study¹ on innovation policy in Belgium concludes that all three regions have a relatively complete set of measures and a rather similar policy mix for supporting knowledge creation, R&D and innovation, targeting all the players in the innovation system. A major weakness of the system, however, is its fragmentation and the lack of inter-regional cooperation which limits spill-over effects. Recent developments in the Walloon region, in particular, tackle the need for greater inter-regional cooperation by opening up the poles of competitiveness to stakeholders from Flanders and Brussels and by creating partnerships with the Brussels Capital region in training and the joint financing of research projects.

Role of ERDF

Overall, the allocation of ERDF resources to innovation policy represents over a third of the total funding received though the share varies between types of region. While in Competitiveness and Employment regions, the share allocated to innovation policy is around 40%, in the Convergence region of Hainaut, it is only 26%². In the latter and in the rest of the Walloon region, the main objective of ERDF co-financed initiatives is to support the region’s poles of competitiveness policy, directing funding at increasing knowledge creation and the development of high value-added activities in six selected sectors.

¹European Commission, DG Enterprise (2009), Inno-Policy TrendChart, Innovation Policy Progress Report Belgium.

² See Table 1 of the annex.

In the Flemish region, ERDF resources³ are mainly allocated to “soft” initiatives such as innovation awareness raising campaigns, guidance for enterprises and individuals wanting to put an idea into practice and supporting networking, partnership and cooperation.

In the Brussels region, ERDF co-financed innovation policy initiatives are directed at the development of the Brussels’ urban pole of development based on “green activities” and the development of environmental technologies.

2.2 ERDF CONTRIBUTION ACROSS POLICY AREAS

Convergence Objective

As noted above, Hainaut, the sole Belgian Convergence region, allocates around a quarter of the ERDF received (some EUR 116 million), which though smaller than in Competitiveness and Employment regions in Belgium, is much the same as the average in other Convergence regions in the EU15. The policy area “Knowledge transfer and support of poles” accounts for 46% of ERDF overall support for innovation⁴. A third of this goes on investment in infrastructure in research centres and poles of competitiveness (mechanical engineering “Mecatech” – 35%, biotechnology “Biowin” – 32%, aeronautics “Skywin” – 5% and information and communication technologies “TIC” – 28%). Research in these areas is part of the regional development strategy and in particular the Marshall Plan for the Walloon region.

Another third goes on infrastructure improvements in competence centres and in particular to the modernisation of equipment, the purpose being to enable workers to keep up to date with technological developments and to improve their skills.

The remaining third goes on measures to facilitate knowledge transfer to SMEs in particular (e.g. ACQUITECH, STIMULE, Technology Vouchers) as well as on direct R&D grants for SMEs. (eg. RETECH) to undertake research programmes and the acquisition of technology. In addition, support is provided to projects carried out by SMEs in association with large companies. ERDF co-financed innovation support for SMEs is largely complementary to the region’s poles of competitiveness policy.

The “Boosting applied research” policy area accounts for 40% of the ERDF going to for innovation, funds being divided between financial assistance to RTD activities in research centres (25%) and in SMEs (15%). Support to *research centres* is mainly aimed at boosting the technological and knowledge base in areas related to the poles of competitiveness. Funding is conditional on

³ At this stage it is worth noting that the Flemish region participated extensively to the European Sixth Framework Programme for Research, Technological Development and Demonstration Activities and is in the top10 of participation related to GDP. 422 Flemish institutes participated in 1051 Sixth Framework Programme (FP6) projects with a total budget of 352.29 million euros, 2.12 % of the total allocated EU 6FP funding.

⁴ Figures refer to data transmitted by the Managing authorities of the Walloon Region in May 2010 and differ slightly from DG Regio data transmitted to the experts by the core team. See Table 2 a and Table 2 c of the annex.

collaboration and therefore goes to joint research between research centres and to research projects that involve research centres and the private sector.

In additions to financial assistance and direct grants for innovation, SMEs also receive support for non-technological innovation in various areas (product quality, design, organisation, use of ICT). A small share of finance (2%) is allocated to improving ‘activity spaces’, investment in accessibility and facilities for start-ups and spin-offs.

Developing an “Innovation friendly environment” accounts for 14% of the ERDF for innovation, three quarters of this going to the provision of advanced support services for firms tailored to their needs. These are mainly aimed at providing support for financial engineering, business start-ups and the extension and the diversification of activities. It is worth noting that the system of support services has been integrated within the newly created “Agency of economic stimulation” (which is the main recipient of funding). The unification and simplification of the system is likely to make it more effective and efficient.

Most initiatives undertaken to support R&D and innovation in the Walloon region in general and in Hainaut in particular are “integrated projects”, which, instead of concentrating intervention on one specific area or target group, are intended to cover all elements of the innovation system, including knowledge creation, diffusion of technology and adaptation to the activities of the poles of competitiveness. The strict separation of policy areas as regards the allocation of funding might, therefore, have limited meaning in many cases. Finally, it should be noted that no direct ERDF support for R&D goes to large enterprises. In this sense, the ERDF is very much complementary to the development policy of the region which is more focused on large enterprises.

Competitiveness and Employment Objective

Innovation policy receives on average 41% of the ERDF in the Belgian Competitiveness and Employment regions, with shares varying from 54% in the Flemish region to 33% in the Walloon region other than Hainaut⁵. While 40 % of ERDF for innovation goes to “knowledge transfer and support of poles of competitiveness”, 36% to “boosting applied research” and 24% to the creation of an “innovation friendly environment”, these are averages only. Given the strong decentralisation of R&D and innovation policy in Belgium, these averages conceal large differences between the regions. These are, therefore, examined separately below.

Brussels Capital region: Funding under the Competitiveness and Employment objective in Brussels is concentrated in the former Objective 2 zone which suffers from economic underdevelopment and increasing economic inequality. According to the operational programme of the region,

⁵ The share of ERDF allocated to innovation policy in Brussels is according to the figures provided by the managing authorities significantly lower and does not exceed 3%. See Table 2 in annex.

innovation policy initiatives represent 35% of the total ERDF (i.e. around EUR 20 million). Of this, some 44% goes to “Boosting applied research”, 41% to “Innovation friendly environment” and 14% to “Knowledge transfer and support of poles”. These estimates in the operational programme, however, differ considerably from the actual allocations. Indeed, according to the Managing Authority, the financial allocation to those areas, which define innovation policy in the present study, only amounts to 3% of the total ERDF. It covers four initiatives: (1) the so-called EMOVO project which focuses on the development of a multidisciplinary research and training centre in environmental technologies (renewable energy in buildings, sustainable urban mobility, composite materials and urban noise), (2) the CTSC project which entails the creation of a competence centre for sustainable construction technologies on the GreenBizz site⁶, (3) the financing of internet infrastructure and the promotion of its use and (4) the promotion of entrepreneurship.

According to the Managing Authority, most “*innovative projects*” are aimed at developing a “green” economy and creating an urban development centre specialising in environmental activities, which fall outside the scope of what is defined as innovation policy in the study. The creation of the Greenbizz centre which offers space for newly created companies in environmental sectors⁷ and the Greenfield project⁸ which supports the development of economic activities on polluted industrial sites are regarded as the main initiatives. Overall, these “innovative projects”, together with the “innovation policy measures” as defined in this study, account for a third of the total ERDF. Given however that the purpose of these “innovative projects” is only marginally related to support of research and innovation as such, they are not included here as “innovation policy” measures.

Walloon Region: The area covered by the Competitiveness and Employment Objective corresponds to the former Objective 2 zones. In practice, the programme implemented for these areas is the same as for the Hainaut region, both the priorities and measures being identical, though the funds allocated are different.

Around a third of the total ERDF (which amounts to EUR 282.5 million) goes to innovation policy and, nearly two-thirds of this (63%) goes to “Knowledge transfer and support to poles” mostly being invested in infrastructure in competence centres (27% of innovation funding) and research centres (15%) covered by the poles of competitiveness policy (mechanical engineering “Mecatech” – 40%, biotechnology “Biowin” – 37%, aeronautics “Skywin” – 1%, agro-food “Wagralim” – 9% and information and communication technologies “TIC” – 13%).

Funding also goes to the development of new office space for innovative activities in design, biotechnologies and the aeronautics sector. The remaining funding goes on R&D grants (eg.

⁶ See below.

⁷ The project is associated to thematic priority 54: Other measures to preserve the environment and prevent risks.

⁸ The project is associated to thematic priority 50: Rehabilitation of industrial sites and contaminated land.

RETEC) and a range of activities to improve the access of enterprises, in particular SMEs, to knowledge and technology (e.g. ACQUITECH, STIMULE, CHEQUE SERVICE TECHNOLOGIQUE).

Some 18% of the ERDF for innovation goes to developing an “Innovation friendly environment”, focused on the provision of advanced support services for financial engineering, business start-ups, and the expansion and diversification of companies, as well as to investment in infrastructure and equipment.

Around 19% of the ERDF for innovation goes to “Boosting applied research”, mainly on collaboration in R&D in areas related to the poles of competitiveness. In addition to strengthening applied research, support to SMEs is also aimed at non-technological innovation and financial engineering for innovation projects.

Flemish region: Support for innovation in the Flanders region amounts to 54% of the total ERDF (which amounts to EUR 200.9 million). Over half of the budget goes to measures aimed at “Boosting applied research”. Within this policy area, the focus is on measures to stimulate research and innovation and entrepreneurship in SMEs whereas investment in firms directly carrying out research and innovation and support for RTD activities in research centres is marginal.

Some 27% of the ERDF for innovation goes to “Knowledge transfer and support to poles”, half of it being used to support technology transfer and the improvement of cooperation networks. The other half goes to RTD infrastructure and centres of competence.

Around 22% of funding is allocated to “Innovation friendly environment”, the focus of which is on the provision of advanced support services to firms.

Cross-border co-operation Objective

Belgian regions are involved in 5 cross-border co-operation programmes (Grande Region, France-Wallonie-Vlaanderen, Vlaanderen-Nederland, Euregio Maas-Rhein, Two Seas) all of them supporting innovation and R&D, with shares varying from 46% of ERDF in the Grande Region Programme to 22% in the Two Seas Programme. On average, the distribution of resources among the three innovation policy areas is relatively balanced, with 37 % going to “Innovation friendly environment”, 35% to “Boosting applied research” and 28% to “Knowledge transfer and support to poles”, though there are but significant differences between the different programmes. While the Grande Region and the France-Wallonie-Vlaanderen Programmes focus on the improvement of “Innovation friendly environment” (around 50% of ERDF funding for innovation going to this), the Vlaanderen-Nederland, Euregio Maas-Rhein and Two Seas Programmes focus on “Boosting applied research”. It is of interest to note that in these programmes assistance to SMEs for the promotion of environmental friendly products receives a significant amount of support, while under the Convergence and Competitiveness Objectives none of the Belgian regions is targeting this activity.

3 EVIDENCE AVAILABLE ON THE PERFORMANCE OF INNOVATION MEASURES CO-FINANCED BY ERDF

No evaluations of the OPs for 2007–2013 have so far been carried out on either the Convergence or the Competitiveness and employment regions.

Evidence on performance presented in this section refers to the main innovation policy areas in which ERDF co-financed measures are concentrated rather than on co-financed measures as such. Innovation support usually goes to integrated projects. Accordingly, evaluations of “isolated” measures and an assessment of their (apparent) performance might have limited meaning and are hardly ever carried out in practice. Some evaluations refer to periods prior to the current programming period but findings are still relevant because programmes have continued into the present period.

The section is divided into two parts. The first summarises evaluation evidence of innovation policy to which ERDF co-financed measures are contributing. The second summarises quantitative output and result indicators obtained from Managing Authorities.

3.1 POLICY EVALUATIONS

Walloon region and Hainaut

The **pole of competitiveness policy** was included in the evaluation of the Walloon Marshall Plan in 2009. From a methodological point of view the evaluation was mainly based on surveys covering the different institutions and enterprises inside the poles and companies outside the poles for comparison. The analysis also used statistical information from administrative sources as well as firm-level databases. Overall the evaluation assessed the policy as being appropriate given the objectives and circumstances. The competitiveness policy is perceived by all actors as important and useful. The main findings were as follows:

- The possibility of collaboration and partnership in the poles is much appreciated by the firms involved, in particular by SMEs for which the opportunity to collaborate with universities and large enterprises has increased greatly⁹.
- Most companies involved are now looking more for local (Walloon) business partners and expertise. This was much less the case before the policy was initiated since often the firms did not know each other.

⁹ This result tend to indicate that the pole of competitiveness policy has addressed one of the main recommendations formulated by the updated mid-term evaluation (2005) of the programming period 2000–06 in relation to the poles of excellence: Research should focus more on the technology needs of SMEs and technology transfer to the productive fabric.

- At the project level, common shared strategies are formulated and expertise is combined to achieve a larger critical mass and to improve the level of excellence. Such common approaches were much less the case before the policy.
- Academics and business people have learned to work together. Universities are now more concerned about the commercial use of research results and the development of concrete, industrial applications.

According to the evaluation it is too early to assess the employment and growth effects of the policy, though at the micro-economic level the result tend to indicate that companies participating in the competitiveness poles are on average more innovative and generate more jobs than companies with the same characteristics outside the poles.

Despite these positive observations, the evaluation also indicates several weaknesses:

- The poles are very different in terms of structure and size. In two of them (“Wagralim” and “Logistics”), the absence of large companies could adversely affect future development.
- Unresolved problems in relation to intellectual property rights could obstruct the commercialisation of research results.
- Administrative delays in completing contractual agreements have slowed down the implementation of the policy (particularly initially) and have penalised small firms than big ones.

In addition to contributing to the pole of competitiveness policy, several ERDF co-financed measures have also assisted **cluster policy** in the Walloon region and Hainaut. Cluster policy focuses more on industrial and commercial partnerships and network building among companies. Advanced support services provided as part of the policy are co-financed by ERDF. The overall assessment of the experimental clusters in 2004 was positive and has led the Walloon Region to support cluster initiatives on a permanent basis and to introduce legislation accordingly (a decree on support and development of clusters was approved by the Walloon Parliament in January, 2007). Today the Region supports 14 clusters, each of them being evaluated (through interviews, surveys and quantitative data) every three years, with financial assistance being gradually reduced each time. Overall, the evaluations tend to indicate that the policy helps improve the performance of companies in the clusters in terms of turnover, value added and exports.

R&D and innovation support measures to enterprises in the Walloon region were evaluated for the first time in 2004. The evaluation covered the period 1991–2002 and focussed on a range of aid schemes, including subsidies and reimbursable loans for R&D and subsidies to cover the cost of young researchers, technical marketing studies and technological innovation managers. It was based on data from regional authorities and on a survey of a representative sample of 250 Walloon firms. The main findings were:

- Enterprise RDT support expanded significantly over the period at over 7% a year.
- An average of 45 new enterprises received aid each year, with the number receiving support for the first time increasing annually.
- The share of SMEs among companies supported increased, the share averaging 34% for subsidies, 63% for reimbursable loans and 79% for recruitment of R&D personnel.
- In the absence of public support, half of the companies reported they would have had to abandon their research project.
- The support scheme was appropriate for the development of innovations, leading in a third of the firms supported to new products and in 9% to new processes.
- Over the period, support had a positive effect on employment in 57% of firms supported, though there was no evidence of significant effects on turnover or profit.
- The aid schemes facilitating the recruitment of additional experienced personnel appear to have had the greatest effect on the capacity of firms to undertake innovation.

A discontinuity was found between the support provided for industrial R&D and the support available for commercialising the results. A set of recommendations was made which were then put into practice subsequently.

An evaluation of **Science and Technology intermediary services** (Technological advisors attached to collective research centres, university interfaces) was carried out in 2004, based on surveys of 300 enterprises and 50 intermediaries. It showed that most companies were unable to distinguish between the functions performed by different entities and that roles and competences were not clearly defined. Overall, there was a lack of a regional strategy which reduced the effectiveness of the system. As a result, the region created a technological stimulation agency to bring together and coordinate the 50 intermediaries, which has led to a more transparent and efficient system.

Flemish region

The Flemish **Innovation Cooperation Network programme (VIS)** run by the Institute for the Promotion of Innovation by Science and Technology in Flanders (IWT) provides support for companies on (technological) innovation by encouraging cooperation between companies and research centres. The programme comprises 6 policy areas: collective research, technological support (TD), sub-regional stimulation of innovation (SIS), thematic stimulation of innovation (TIS), feasibility studies, “collaborative” projects. The policy has been evaluated in several parts (2007) using different methods (desk research, surveys, case studies and interviews) and following conclusions were drawn:

- The programme is well designed to answer the specific technological support needs of intermediaries and their company-clients. Around 63 % of the companies in the sample reported that the services provided strongly fit their needs.

- The programme was regarded as playing a pivotal role in innovation support in the region. It is estimated to “reach” over 8,000 enterprises a year. Between 2001 and 2006, 303 projects were submitted of which 193 were approved for funding (totalling around EUR 110 million).
- Most projects supported were ‘incremental’ in terms of technological content and mainly aimed at sustaining the market position of the companies concerned.
- Large organisations played an important role. Some 10% of applicants accounted for over 40% of the projects approved.
- The programme helped enhance the competitiveness of the region, by increasing the quality and range of products and services produced by firms as well as value added. The effects seemed to be larger for smaller companies (with annual turnover of less than EUR 10 million) than for larger ones and the more services were used, the greater the effect on firm performance.
- From a (limited) number of interviews with those outside the Network, there was no evidence of disruptive effects on firms or market outside the network. There was some evidence of ‘spill-over’ effects, with new services/being developed inside the network and the taken up by those outside.

A study was carried out in 2006 on how far VIS support changes the behaviour of companies, based on surveys of 194 companies receiving support over the period 2001–2004 and two control groups – 88 companies that applied for support but were rejected and 100 companies known to be innovative which did not apply for support. The results were as follows:

- Around 40 % of the projects would not have taken place if they had not received support and only 10% of projects would have taken place with the same budget.
- A large majority (70 %) of companies carried out R&D and innovation projects more regularly after they received support for the first time, indicating that government funding led to increased private funding¹⁰.
- Some 70% of the product innovation oriented projects and 60% of the process innovation oriented projects led to the introduction of new or improved products or processes, the success rate being higher in supported than in non-supported companies.
- Although support enabled companies to acquire new knowledge, the impact on management capabilities, networking skills and the skills of the work force more generally was low.

¹⁰ This is also conformed by the econometric investigations carried out by IWT (2006) which tend to conform that public R&D funding in Flanders induces more private R&D spending than would have been the case without subsidies.

Brussels Capital

In the Brussels capital region, only a very small share of ERDF support goes to innovation and R&D projects. For these, no evaluation of performance seems so far to have been carried out.

In a nutshell, the evaluation evidence of ERDF co-financed innovation policy in Belgium shows that the policies carried out in the past were appropriate and effective. The recommendations made have usually been taken up. While the microeconomic effects of the policies were investigated in most cases, the wider effects were not. A common shortcoming of the evaluations is that the results achieved are hardly ever put into perspective as regards either cost efficiency or comparative effectiveness.

3.2 QUANTITATIVE ACHIEVEMENTS UNDER THE CONVERGENCE OBJECTIVE¹¹ 2007–2013

Knowledge transfer and support of poles

The *Technology Voucher Programme* is a relatively recent measure aimed at providing flexible support to SMEs from research centres in the region. The scheme is managed by the recently created Agency for Technology Promotion. The measure is considered a success both as regards the interest it receives from firms and as regards the quality of services provided by the research centres. In total, 369 technology vouchers have been distributed to enterprises and services are provided by 15 research centres.

Several initiatives are designed to transfer of knowledge to businesses. Surveys have been carried out to tailor the services provided to needs and to organise the transfer of technology in the most efficient way. This has led to 37 packages being developed. Overall, in Hainaut, 171 researchers (FTE) in 15 research centres are working on 71 research projects that directly target the needs of enterprises which have been identified in areas of technology relating to the poles of competitiveness. In total, 16 projects have already led to new and/or improved products and processes.

Technological progress in general and the adoption of new technologies by firms in particular requires the workforce to be trained in order to acquire the necessary skills. The ERDF is co-financing support to the competence centres (17), technology centres (8) and training institutions (198) in the form of advanced infrastructure and equipment. However, up until now, little evidence on output and results is available, which suggests that so far little has been achieved.

Boosting applied research

¹¹ The latest available information communicated by the Managing Authority in May 2010 refers to the situation at December 31, 2009.

Relatively few achievements have been reported by the Managing Authorities as regards the initiatives undertaken to boost applied research apart from those also directed at knowledge transfer and support to poles (see above). As regards support to SMEs in terms of financial assistance and financial engineering for innovation projects, the Managing Authority reports that two calls for projects have been launched (one in 2009 and the other in 2010) and projects supported are currently being implemented.

Innovation friendly environment

The provision of advanced support services for firms (financial engineering, firm creation and the expansion and diversification of activities) has contributed to the creation of 549 jobs, 99 new firms and 548 cases of company expansion. The results are in line with the targets set for 2010. The main achievements are:

- 180 individual cases providing advice and support for firm creation, – half of which have actually led to the creation of new firms
- support provided to 436 enterprises for diversification of products or processes
- support provided to 215 enterprises for the development of industrial /products or services
- the launch of the “strategic intelligence” programme and provision of decentralised information on different issues relating to entrepreneurship, use of ICT and so on.

Nine projects have been selected under the programme for improving infrastructure and equipment in business sites in the Hainaut region. Progress is reported on two of them: the construction of a new building for new, innovative firms specialising in design and the creation of new office space.

3.3 QUANTITATIVE ACHIEVEMENTS UNDER THE COMPETITIVENESS OBJECTIVE 2006–2013

Brussels Capital region

As emphasised in the previous section, very few policy initiatives relating to innovation are being undertaken in the Brussels Capital region. While evaluations have not been carried out at this stage¹², the progress made is summarised by the managing authority as follows: In the “Knowledge transfer and support to innovation poles and clusters” policy area, the EMOVO¹³ project is in the launching phase. The process of procuring equipment and the redevelopment of business sites have been initiated. Seminars on “eco–construction” and sustainable construction

¹² Evaluations will be launched in 2011.

¹³ Development of a multidisciplinary research and training centre in environmental technologies.

techniques are being organised under the CSTC¹⁴ programme, with several organisations working together on producing technological guidelines in this regard. In the “Boosting applied research and product development” policy area, two initiatives have been undertaken to stimulate entrepreneurship: the construction of an internet site (www.boostyourtalent.be) and a first awareness raising campaign. In the “Innovation friendly environment” policy area, plans have been being developed to provide broadband access to the internet infrastructure and to promote its use, but because of budgetary restrictions following the crisis, the Region is currently not able to provide the necessary co-financing.

Walloon region¹⁵

Innovation friendly environment

The provision of advanced support services for firms (financial engineering, firm creation and extension and diversification of activities) has contributed to the creation of 262 new jobs, 81 new firms and the expansion of 316 others. Main achievements are:

- 284 individual cases of providing guidance and support for firm creation, a quarter of which have led to the creation of new firms
- support to 316 firms to expand their activities and/or launch of new products or introduce new processes
- Support to 102 firms to develop industrial goods or services

Knowledge transfer and support of poles

The Technology Voucher initiative is also part of the Competitiveness and Employment Programme of the Walloon region. Up to now, 503 vouchers have been provided to enterprises to support assistance from 24 research centres.

Several initiatives are target at the transfer of knowledge to businesses and surveys have been carried out to assess the technological needs of businesses in the region and to determine the best means of meeting these. This has led to 37 project packages being defined. Overall, in the Walloon region outside of Hainaut, 88 researchers (FTE) in 12 research centres are working on around 30 research projects aimed at meeting the needs of enterprises in technological areas related to the poles of competitiveness. Up to now, 6 projects have led to new or improved products or processes being introduced.

The ERDF has also been used to co-finance equipment for competence centres (12), technology centres (16) and training institutions (250) aimed at supporting the training of workers to acquire

¹⁴ Creation of a competence centre for eco-construction technologies on the GreenBizz site.

¹⁵ The latest available information communicated by the Managing Authority in May 2010 refers to the situation at December 31, 2009.

the skills required by new technologies. There is so far little evidence, however, on outputs or results.

15 projects have been selected under the programme for developing infrastructure to facilitate technology transfer, 5 of which involve the creation of new enterprise centres which are currently under construction.

Boosting applied research

Few examples of tangible achievements have been reported as regards initiatives undertaken to boost applied research, apart from those also involving knowledge transfer and support to poles of competitiveness (see above). Two calls for proposals have been launched under the programme for providing financial assistance for innovation projects to SMEs (one in 2009 and the other in 2010) and the projects selected are currently being undertaken.

The Flemish region

According to the Managing Authority, the calls for projects launched until now have led to the selection of 106 projects, with EUR 26.4 of ERDF support being allocated to them, amounting to round a quarter of overall co-financed innovation support.

The focus has been to a large extent on ICT and clean technologies. More precisely, the projects supported were aimed at (1) raising the awareness of companies of the central role of knowledge creation and diffusion; (2) helping firms to increase skills and competences in relation to the use of ICT and clean technologies in particular; (3) encouraging cooperation between SMEs and research centres by supporting innovation platforms and cluster initiatives; (4) encouraging participation in international innovation networks; (5) stimulating innovative applications of available technology (ICT and clean-technology in particular) through the design and implementation of demonstration projects and the diffusion of good practice. The projects carried out have so far led to the results listed below, which are generally in line with the targets set¹⁶:

- 523 enterprises have developed strategies to better integrate and use available technology at different stages of the production process
- 196 enterprises have received specific advice for developing concrete applications of technology
- 50 cooperation networks have been established between Flemish companies and research centres
- 14 cases of international research collaboration were initiated or strengthened
- 520 enterprises have adopted or developed innovative applications of technology.

¹⁶ The achievements refer to end 2009.

4 CONCLUSION: MAIN CHALLENGES FACED BY COHESION POLICY PROGRAMMES

In Belgium, R&D and innovation policies are decentralised and in practice the three regions have full autonomy over the design and implementation of research and innovation policy. While it is too early to measure the effects of measures implemented so far¹⁷, evaluation evidence from previous periods tends to indicate that support has been well directed and effective. However, there are a number of areas where, if they were addressed, there might be significant gains in efficiency and impact of the policy. Most of these are of structural nature and can only be tackled by wider, long term policies.

First, there needs to be more cooperation between the three Belgian regions over innovation policy, which is currently designed and implemented independently by each region, so as to realise more spillover effects and economies of scale. While politicians emphasise the need for cooperation, each region has its own poles of competitiveness policy focused broadly on the same sectors, which might well prevent a critical mass from being achieved.

Second, it is necessary to overcome the so-called innovation paradox which is demonstrated by high scores of scientific production but low performance of innovation activities. R&D and innovation efforts do not generate sufficient new activities able to boost the economic development. The poles of competitiveness policy in Wallonia and the Strategic Research Centres in Flanders are amongst the instruments to tackle this challenge, as are increased involvement of industry in defining research agendas and research projects.

Third, as is well documented, there is over-reliance on a few, large foreign owned firms¹⁸. The rate of creation of new businesses in high value added and knowledge intensive sectors is low in Belgium partly because of under-provision of risk capital¹⁹. The need to provide better access to finance is now recognised by the governments of all three regions each of which have taken action in this regard.

Fourthly, the effect of the crisis on public finances might affect the possibility of maintaining or increasing public support for R&D. Although the situation seems most serious in the Walloon region, only the Brussels region has stated that it is not able to provide the necessary co-financing for all planned initiatives.

Finally, it should be noted that innovation performance does not depend only on innovation policy. The economic and institutional context is equally important. The high level of taxes and the

¹⁷ The implementation rate is evaluated at 10%.

¹⁸ Teirlink P. (2009).

¹⁹ Louvain School of Management (2008).

limited availability of human resources in science and engineering²⁰ both reduce the attractiveness of Belgium as a location for innovative firms.

²⁰ Bureau du Plan (2009).

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ANNEX A – BACKGROUND DATA ON EU COHESION POLICY SUPPORT TO INNOVATION

The data on the ERDF resources allocated cover the FOI codes defined as being relevant for support of RTDI, or, more precisely, those that cover the bulk of resources devoted to innovation (see annex B for the list of codes). Experts should assess the appropriateness of this common definition and, if necessary, adjust the coverage to the national case in consultation with the core team. Note: experts should complete the final column only in respect of the National and Regional programmes totals and not for each regional programme.

Table 1 – Total ERDF resources allocated per programme (2007–2013)

Programmes	Total ERDF resources for innovation	Innovation support as % of total ERDF	Main initiatives* being undertaken or implemented
OP Convergence Hainaut	118,232,912	26.3%	Support to development of poles of competitiveness in 6 technology areas (health science, agro-industry, mechanical engineering, aeronautics and space, transport and logistics, environmental technologies) and to the "valorisation" of research results by the firms in the region
<i>Total Convergence Obj.</i>	118,232,912	26.3%	
OP Région de Bruxelles-Capitale	20,157,364	35.0%	Support to implementation of urban development pole based on the green economy and environmental technologies
OP Vlaanderen	108,334,217	53.9%	Divers measures targeting awareness raising, guidance, cooperation, internationalisation and "valorisation" of research and knowledge
OP Wallonie (hors Hainaut)	92,196,544	32.6%	Support to development of poles of competitiveness in 6 technology areas (health science, agro-industry, mechanical engineering, aeronautics and space, transport and logistics, environmental technologies) and to the "valorisation" of research results by the firms in the region
<i>Total Competitiveness Obj.</i>	220,688,125	40.8%	
<i>Total country</i>	338,921,037	34.2%	

* The term initiatives should be understood in a wide sense covering measures, projects, actions and so on co-financed by the ERDF. Among these, experts should identify the main kinds of intervention.

Source: core team on EC data.

Table 2 – ERDF contribution to innovation by policy area (2007–2013)*a – Convergence Objective (DG Regio data – provided by core team)*

Policy area	Categorisation of expenditure (corresponding FOI codes)	Total ERFD
Innovation friendly environment	05	21,703,590
	11	0
	12	0
	13	0
	14	0
	15	0
	74	0
	Total	21,703,590
Knowledge transfer and support to innovation poles and clusters	02	32,016,359
	03	14,007,157
	04	20,010,224
	Total	66,033,740
Boosting applied research and product development	01	14,007,157
	06	0
	07	0
	09	16,488,425
Total	30,495,582	
Total		118,232,912

b – Competitiveness and Employment Objective (DG Regio data – provided by core team)

Policy area	Categorisation of expenditure (corresponding FOI codes)	Total ERFD
Innovation friendly environment	05	47,497,478
	11	1,000,000
	12	0
	13	0
	14	1,500,000
	15	2,958,737
	74	0
	Total	52,956,215
Knowledge transfer and support to innovation poles and clusters	02	47,605,939
	03	23,140,666
	04	17,266,100
	Total	88,012,705
Boosting applied research and product development	01	8,140,666
	06	2,000,000
	07	7,759,247
	09	61,819,292
Total	79,719,205	
Total		220,688,125

c – Convergence Objective – Hainaut

Source of data: managing authority

Policy area	Categorisation of expenditure (corresponding FOI codes)	Total ERFD	Total National
Innovation friendly environment	05	15,503,833	17,199,589
	11	0	0
	12	0	0
	13	0	0
	14	0	0
	15	0	0
	74	0	0
	Total	15,503,833	17,199,589
Knowledge transfer and support to innovation poles and clusters	02	32,803,991	48,045,054
	03	5,206,415	7,809,622
	04	14,010,224	21,015,336
	Total	52,020,629	76,870,012
Boosting applied research and product development	01	28,267,350	40,551,728
	06	0	0
	07	0	0
	09	16,327,748	23,842,980
	Total	44,595,099	64,394,708
Total	112,119,562	158,464,309	

d – Competitiveness and Employment Objective – Walloon Region (hors Hainaut)

Source of data: managing authority

Policy area	Categorisation of expenditure (corresponding FOI codes)	Total ERFD	Total National
Innovation friendly environment	05	16,475,062	16,923,609
	11	0	0
	12	0	0
	13	0	0
	14	0	0
	15	0	0
	74	0	0
	Total	16,475,062	16,923,609
Knowledge transfer and support to innovation poles and clusters	02	46,301,430	68,053,142
	03	2,147,313	3,220,969
	04	11,235,766	16,853,649
	Total	59,684,509	88,127,760
Boosting applied research and product development	01	12,839,774	18,185,879
	06	0	0
	07	0	0
	09	5,000,000	7,500,000
	Total	17,839,774	25,685,879
Total	93,999,344	130,737,248	

e – Competitiveness and Employment Objective – Brussels Region*source of data: managing authority*

Policy area	Categorisation of expenditure (corresponding FOI codes)	Total ERFD	Total National
Innovation friendly environment	05		
	11	0	0
	12	0	0
	13	112,188	112,188
	14	0	0
	15	0	0
	74	0	0
	Total	112,188	112,188
Knowledge transfer and support to innovation poles and clusters	02	797.500	797.500
	03		0
	04		0
	Total	797.500	797.500
Boosting applied research and product development	01	0	0
	06	0	0
	07	0	0
	09	781.568	781.568
	Total	781.568	781.568
Total		1,691,256	1,691,256

**ANNEX B – CLASSIFICATION OF INNOVATION POLICY AREAS,
INSTRUMENTS AND BENEFICIARIES**

Policy area	Short description
Innovation friendly environment	<p>This category covers a range of actions which seek to improve the overall environment in which enterprises innovate, and notably three sub groups:</p> <ul style="list-style-type: none"> • innovation financing (in terms of establishing financial engineering schemes, etc.); • regulatory improvements and innovative approaches to public services and procurement (this category could notably capture certain e-government investments related to provision of services to enterprises); • Developing human capital for the knowledge economy. This category will be limited to projects in higher education aimed at developing industry orientated courses and post-graduate courses; training of researchers in enterprises or research centres. <p>The category also covers initiatives geared towards improving governance capacities for innovation and knowledge policies (e.g. specific technical</p>

	assistance funding, support for regional foresight)
Knowledge transfer and support to innovation poles and clusters	<p>Direct or indirect support for knowledge and technology transfer:</p> <ul style="list-style-type: none"> • direct support: aid scheme for utilising technology-related services or for implementing technology transfer projects, notably environmentally friendly technologies and ITC; • indirect support: delivered through funding of infrastructure and services of technology parks, innovation centres, university liaison and transfer offices, etc. <p>Direct or indirect support for creation of poles (involving public and non-profit organisations as well as enterprises) and clusters of companies</p> <ul style="list-style-type: none"> • direct support: funding for enterprise level cluster activities, etc. • indirect support through funding for regrouping R&D infrastructure in poles, infrastructure for clusters, etc.
Boosting applied research and product development	<p>Funding of “Pre-competitive development” and “Industrial research” projects and related infrastructure. Policy instruments include:</p> <ul style="list-style-type: none"> • aid schemes for single beneficiary or groups of beneficiaries (including IPR protection and exploitation); • research infrastructures for non-profit/public organisations and higher education sector directly related to universities. <p>Any direct or indirect support for the creation of innovative enterprises (spin-offs and start-ups)</p>

Instruments	Short description
Infrastructures and facilities	Building and equipment for laboratories or facilities for university or research centres, Telecommunication infrastructures, Building and equipment for incubators and parks for innovative enterprises
Aid schemes	Grants and loans for RTDI projects Innovative finance (venture capital, equity finance, special bonds, etc.) for innovative enterprises
Education and training	Graduate and post-graduate University courses Training of researchers

Beneficiaries	Short description
Public sectors	Universities National research institutions and other national and local public bodies

	(innovation agencies, BIC, Chambers of Commerce, etc.) Public companies
Private sectors	Enterprises Private research centres
Others	NGOs
Networks	cooperation between research, universities and businesses cooperation between businesses (clusters of SMEs) other forms of cooperation among different actors

ANNEX C – CATEGORISATION OF EXPENDITURE TO BE USED FOR CALCULATING EU COHESION POLICY RESOURCES DEVOTED TO INNOVATION

FOI Code	Priority Theme
	Research and technological development (RTD), innovation and entrepreneurship
01	R&TD activities in research centres
02	R&TD infrastructure (including physical plant, instrumentation and high-speed computer networks linking research centres) and centres of competence in a specific technology
03	Technology transfer and improvement of cooperation networks between small businesses (SMEs), between these and other businesses and universities, postsecondary education establishments of all kinds, regional authorities, research centres and scientific and technological poles (scientific and technological parks, technopoles, etc.)
04	Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres)
05	Advanced support services for firms and groups of firms
06	Assistance to SMEs for the promotion of environmentally-friendly products and production processes (introduction of effective environment managing system, adoption and use of pollution prevention technologies, integration of clean technologies into firm production)
07	Investment in firms directly linked to research and innovation (innovative technologies, establishment of new firms by universities, existing R&TD centres and firms, etc.)
09	Other measures to stimulate research and innovation and entrepreneurship in SMEs
	Information society
11	Information and communication technologies (access, security, interoperability, risk-prevention, research, innovation, e-content, etc.)
12	Information and communication technologies (TEN-ICT)
13	Services and applications for the citizen (e-health, e-government, e-learning, e-inclusion, etc.)
14	Services and applications for SMEs (e-commerce, education and training, networking, etc.)

15	Other measures for improving access to and efficient use of ICT by SMEs
	Human capital
74	Developing human potential in the field of research and innovation, in particular through post-graduate studies and training of researchers, and networking activities between universities, research centres and businesses