



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

TASK 1: POLICY PAPERS ON INNOVATION

SYNTHESIS REPORT

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**A report to the European Commission
Directorate-General Regional Policy**

Drafted by Enrico Wolleb, Ismeri Europa
In cooperation with Andrea Naldini and Andrea Ciffolilli

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1. Introduction

This report synthesises the policy papers on innovation produced by the evaluation network for each of the Member States. It should be noted that since the reports were produced in June–July of this year, the comparable data they include are based on information up to the end of 2009, i.e. for the first two years of the present programming period only. More, up-to-date data, however, are included in many of them from national sources, from interviews with Managing Authorities especially.

The main aims of the reports were to:

- summarise national and regional innovation policies and the relationship between the two
- indicate the contribution of the ERDF to innovation policy
- outline any evidence on the achievements of the ERDF
- indicate the challenges for innovation policy that need to be tackled.

The report adopts a broad definition of innovation, corresponding to that included in the third edition of the Oslo Manual. An innovation is, therefore, the implementation of a new or significantly improved product (good or service) or process or a new method of marketing or organisation. The specific areas of intervention covered by the reports, the measures involved and the recipients of funding are listed in Annex B below.

A distinction is made throughout the present report between regions receiving different types of assistance, in particular, under the Convergence Objective and the Competitiveness and Employment Objective. For shorthand, the regions receiving funding are termed Convergence regions and Competitiveness regions, respectively. The Territorial Cooperation Objective is also covered to a limited extent since most projects have only just started.

The primary sources of information for the country reports and, therefore, for this report were:

1. The official documents and the evaluations (Annual Implementation Reports, OPs, Ex ante evaluations, NSRFs, 2007–2013, National Strategic Report 2009)
2. Statistical information (financial data by main policy area) compiled by DG Regio
3. Evaluation evidence available in the Member States and other research studies, impact assessments and so on which have been published
4. Information from interviews with officials and experts.

The report is divided into three sections:

- the first section considers national and regional RTDI policy and the role of the ERDF in respect of three main policy areas ('innovation friendly environment', 'boosting research' and 'knowledge transfer and innovation poles');
- the second section examines the evidence available on innovation interventions. Since projects are often in the initial stages, if they have been started at all, there are only limited details of output and results, but some indication of tendencies can be given;
- the third section presents conclusions and sets out the main challenges for RTDI policy over the remainder of the programming period.

2. National and regional innovation policy and the contribution of ERDF

Over the past decade all Member States have strengthened their commitment to RTDI and, in most cases, formulated conscious strategies in this regard. This is a response to the growing competitive pressure stemming from the ongoing process of globalisation, though it is also a central element of the Lisbon strategy, endorsed by all EU governments, aimed at creating a dynamic, knowledge-based economy across the EU. In this context the need for a regional dimension of the policy to fine-tune strategies and instruments to regional needs and potential has clearly emerged. Cohesion policy has played an increasingly important role in supporting these developments by co-funding a range of measures at regional level to strengthen research capacity and further innovation. A major aim of the present study was to examine developments in this respect in the first part of the period.

The concern in this first section, however, is to consider the main features of national and regional strategies and the way they are governed in the 27 EU Member States and the kind of support provided by cohesion policy in the 2007–2013 programming period.

2.1. NATIONAL INNOVATION POLICY

2.1.1. Governance of national policy

The governance of RTDI policy in the EU is to a large extent centralised, even if the regional focus of RTDI has tended to increase in importance and regionally-based programmes have been defined over recent years in many centralised countries. This process has involved different forms of decentralization of RTDI policy to the regional level coupled with the building, or strengthening, of the institutions required to manage policy and to tailor the measures implemented to local needs. In some cases, regional authorities have become fully responsible for interventions in respect of RTDI and define their own strategy in this respect; in others, intermediary organization¹ together with the necessary administrative arrangements have been set up to implement national policy at regional level.

Increasing decentralisation of innovation policy has, therefore, occurred to differing extents in Italy, France, Belgium, the United Kingdom and Poland and the priority in these cases has been to strengthen local institutional structures and procedures either through the formal devolution of power or simply through decentralisation of planning and management responsibility. In other countries, in Denmark, Spain and many of the EU12 countries, governance has been associated not so much with a redistribution of responsibility for policy but with more efficient organisation of public and private institutions. This is particularly the case in EU12 countries, where

¹ Intermediary institutions are specialized bodies public or quasi-public (including private firms or Universities or other stakeholders), established by the central or the regional authorities, according to the type of decentralization model, which are responsible for the management of RTDI policy in a specific region or in the whole country. They usually support the implementation of the RTDI policy from the strategy to the administration, they manage funds or individual programmes. National and regional agencies are the most usual models. In some cases an intermediary organization may coordinate only a specific and limited aspect of RTDI policy like a cluster governing body or a technological park.

decentralisation has been aimed at adapting national policy more to regional needs and involving SMEs more in innovation.

Forms of Decentralisation

Decentralisation usually has three components: political, fiscal and administrative.

Political decentralisation involves the transfer of political authority from central to locally elected state bodies. Fiscal decentralisation consists in providing local governments with the capacity and authority to define and collect taxes and revenues, to manage public resources and to provide public goods and services

Administrative decentralisation may take three forms:

De-concentration is generally viewed as the most limited approach to decentralisation and involves assigning responsibility from one level of the central government to another, usually geographically located at the sub-national level, while maintaining the same level of accountability to the de-concentrating central government ministry or agency;

Delegation redistributes authority and responsibility to a government agency or a local unit of government to carry out a particular function on behalf of the central government in return for a payment, but accountability remains essentially with the delegating central unit;

Devolution is recognised as the most comprehensive approach to decentralisation whereby authority, responsibilities, resources and revenue generation are assigned to a local-level public authority that is autonomous and fully independent of the devolving authority. Ideally devolved Units are elected and accountable mainly to the local electorate. Regionalization in this respect occurs when this form of administrative decentralization is carried out in the direction of a regional authority. The devolution of a specific competence may give full decision making power to the beneficiary authority or may share power between the central and the local/regional authority.

The result of this process is the inclusion of an increasing number of regional and territorial issues in the planning and implementation of RTDI policy, putting a stop to a clear-cut separation between research policy and innovation interventions and establishing some forms of territorial concentration. These changes gave rise to a growing problem of coordination between administrative authorities at different levels as well as between sources of funding.

Three main types of governance of RTDI policy are evident across the EU, which are not necessarily in line with the prevailing institutional arrangements for other policies. In fact, in many countries competence for RTDI policy is shared and the specific arrangements determine the power of each level of government (e.g. in the case of Spain and Italy):

- **Centralised** – the central government controls RTDI policy, with local authorities and agencies involved in implementation to varying extents. This is the case for small countries (the Baltic States, Cyprus, Luxembourg and Malta) as well as larger ones (Bulgaria, the Czech Republic, Greece, France, Hungary, the Netherlands, Poland, Portugal, Romania, Slovenia and Slovakia). In the latter countries, an ongoing process of decentralisation is evident to differing extents, but policy remains largely centralised.
- **Mixed** – the central government defines the strategic and regulatory framework directly or through national agencies (acting as intermediary organizations) while regional and/or local bodies implement the strategy according to their needs. This is the case in Austria, Ireland, the United Kingdom and the three Nordic Member States. In this institutional

context in Austria and the United Kingdom, the regional power in RTDI policies supported by the ERDF is important.

- **Regionalised** – regional governments have most responsibilities in defining and implementing RTDI policy according to a devolution law. In the EU virtually in all forms of RTDI regionalization, competences are shared between central government and the regional governments, giving rise to a multilevel governance arrangement; the 2 levels of government therefore carry out RTDI interventions within their own sphere of competence, according to their national law. This is the case in Belgium, Germany as well as Italy and Spain Competitiveness.² Even though strategies are often similar across regions, there is a bipolar system of decision making which gives rise to problems of overlap and coordination between the two administrative levels.

The implications of on-going developments in governance arrangements

Although an in-depth examination of these models is outside the scope of this report, it is important to highlight a number of issues which arise from organisational developments: recent, on-going changes in the governance of RTDI policy in almost all Member States affect the implementation of programmes in terms of their coordination and allocation of resources; programmes are affected by process of institution building associated with these developments and the general objectives of involving SMEs more in innovation and matching policy more to local needs; excessive dispersion of expenditure under RTDI policy, coupled with a lack of effective coordination, can distort the allocation of incentives (as, for instance, in Belgium and Italy, where in some cases the local firms in a given sector are too few to guarantee an acceptable degree of competition for grants, with a consequence that low quality projects are supported while high quality projects in regions with a larger productive base may not be selected for support) thus reducing their effectiveness.

This is a general problem but it is particularly important as regards RTDI policy, which operates in a global arena and where selecting winners is an important aim of the policy.

Governance issues do not only involve the central versus the regional dimension of the policy; there are also issues of coordination at central level between ministries (for research on the one hand and innovation on the other (Spain, Austria, Portugal, Italy and Poland). In addition, coordination between regions is a growing issue in large countries with strong regional disparities, since issues of spill-over, critical mass and specialisation need to be tackled at a wider territorial level.

2.1.2. National strategies

The national strategies for RTDI have been updated in all Member States over the past 5 years and spelled out in official documents. In all of the countries, a wide range of objectives have been set from supporting industrial research to the provision of support services to advise on organisational innovation. Two significant general tendencies are evident:

² Spain ERDF allocation for RTDI is as follows. In the 4 Convergence regions in Spain a substantial share of the resources (74.2% of total funds, as opposed to 54% in Competitiveness and phasing in) are spent through 2 large multiregional programmes. In particular the technological fund who provide grants to business RDI projects managed by the national agency CDTI, without any explicit participation of the regional authorities. The rest of the ERDF funds (approx. 26% for Convergence and 46% for Competitiveness and phasing in) are spent through programs under the political and administrative power of the regions

- **an increasing focus on SMEs**, which is particularly important in Cohesion countries. Although the economic context and needs differ in Convergence and Competitiveness regions, there is a common emphasis on widening the firms involved in innovation and on providing more general and easier access to services supporting innovation and to investment incentives; this objective emerges as a key success factor for the innovation policies.
- **the promotion of research and innovation poles** or other forms of clusters or networking. This encompasses a wide range of instruments which are aimed at establishing some form of coordination between actors to realise synergies and spill-over effects and to create a critical mass. In France, where the term was first coined and the policy first adopted, the poles are proposed by the regions and decided at national level; in other cases, they result from choices made at regional level (as in Germany, Italy, Belgium and Austria). In general, poles involve cooperation between universities, research centres and businesses and a focus on particular technologies or sectors of economic activity. This is a highly desirable development which should prevent dispersion and encourage a systemic approach by the actors involved. The risk is that such a policy can lead to a proliferation of poles each of which lacks critical mass or competition between poles specialising in the same activities. In Portugal, Greece, the Italian Convergence regions and the EU12, there is growing concern about the sustainability of the clusters being supported since most of them are weak, in terms of both research potential and the firms located there.

2.2. REGIONAL INNOVATION POLICY

The regional dimension of national RTDI strategy has become increasingly important, generally in response to the need for a more focused approach to innovation and SMEs. More tailor made interventions in favour of specific sectors or territorial areas, more attention to local needs and potential are at the root of this trend.

In the 2007–2013 period, planning and management tend to be more regionally-focused, with more decentralisation of responsibility and the creation of new local agencies than in the previous programming period.

In Competitiveness regions almost all funds are regionalised and central governments are generally not involved in planning and management, with a few exceptions in the EU12. In the EU15, in both Convergence and Competitiveness regions, more countries have made regional operational plans for the first time ever (Portugal, Netherlands and Greece). In Convergence regions in the EU15, more resources are allocated to regional programmes which are managed by regional authorities or by decentralised central government bodies whose power has been increased (United Kingdom) In Convergence regions in the EU12, the ERDF is still largely centralized; however there are ROPs in Poland and Hungary, and local authorities have to differing extents been involved in Czech Republic and Slovenia:

Territorially blind RTDI policies in the present programming period are progressively being substituted by forms of concentration and clustering, infrastructure and equipment investment, and networking which are at the root of a more systemic approach. All Member States have increasingly focused their attention on the regional dimension of the policy; regional authorities, regional agencies and intermediate bodies have had their functions and responsibility increased,

and the regional needs and potential have emerged more clearly within the national and regional strategies that have been formalised and made explicit. In many countries, however, especially in the EU12, there is still a long way to go in this direction.

As a consequence, the increase in the number of actors involved in the process, which is necessary if RTDI policy is to have a wider impact on society and the economy, has created problems of horizontal and vertical coordination among tiers of government. The creation of intermediary institutions to manage the complexity of the system has, therefore, become central to the effectiveness of policy.

This tendency takes different forms according to the overall extent of devolution, the size of the country and the maturity of the institutions involved. Regional authorities in Germany and Italy in Austria and Spain therefore, have a large degree of responsibility for policy, while in the United Kingdom, Ireland, Regional Development Agencies have an increasingly important role in implementing policies within a national framework. In many EU12 countries, however, the regional focus of the interventions remains limited and while regional innovation strategies (RIS) have been defined, it remains to be seen if and to what extent they will be implemented. This is the case, for example, in Bulgaria, Estonia, Romania and Slovakia.

Regional strategies tend to be focused primarily on innovation, while basic research and the university system remain a national competence. Coordination of these strategies with national policy is accordingly of major importance, especially where responsibilities are blurred and fragmented and in Convergence regions, in particular, where new bodies have been set up to support RTDI.

The translation of knowledge into commercial products and establishing permanent feed-back from the business sector to the knowledge producing sectors and vice versa are major concerns of regions. In Convergence regions broad and fragmented strategies due to the lack of actors producing knowledge and translating it into products, is a major problem which could give rise to low absorption of new ideas or very limited genuine innovation.

The coordination of research and innovation is of increasing concern especially in cohesion countries, where the private sector and the SMEs are too weak to lead the process and hinder the effectiveness of innovation policy (Greece, Portugal and EU12). These two components of policy therefore needed to be developed with the support of foresight analyses to identify appropriate areas of regional competitiveness and specialisation.

In more advanced countries, this aspect is less relevant since regional strategies tend to be oriented towards supporting "champions", as is the case in the Netherlands, where the relatively small size of the country and limited regional disparities enable reliance to be placed on spill-over effects from concentrating RTDI in agglomerations. This is also the case at Länder level in Germany, where the private sector and the Universities actively and autonomously pursue this process, as well as in the north of Italy. In Ireland, particular stress has been put on research and the development of human potential to increase the attractiveness of the country as a location for high tech business. In other Competitiveness regions, focus has been on cooperative research with the support of increasingly more efficient intermediary institutions (poles, clusters, incubators) (France). More generally, strategies based on poles or centres of excellence are intended to focus RTDI support on regional strengths and to provide every region with some concentration of research and innovation. At the same time, the regional dimension of the strategy raises some important issues, in particular, the selection of the poles of excellence, their coordination, especially of centres with similar areas of specialisation, the form and extent of

public-private partnership and the means of ensuring the right matching of resources and capacity with needs. Such issues are of particular concern in Belgium, Denmark, Germany, France, Italy and Austria, if to differing extents.

In the countries where the regional dimension of RTDI policy remains to be developed, and where regional strategies have been designed only in the present programming period, the main concern is over the quality of the strategies and their capacity to direct funding to the most appropriate uses. In the case of Poland, for example, strategies are similar across regions and do not reflect the large differences between them. Equally, in France, a large institution building process has been initiated to improve the quality of regional strategies. In Portugal and Greece the increasing regional dimension of the strategies set at national level has not been matched by a parallel shift in the power of regions to implement policy. In addition, in the EU 12 and several Convergence regions (in Greece, Portugal, Italy) national strategies are too general and regional strategies are unfocused and overambitious, agencies do not have the required know how and, as a result, measures tend to be too dispersed and their impact not clearly visible. Nevertheless, it is important to recognise the improvement which has been made and the potential of these steps towards tentative regionalisation.

In short, the full exploitation of the regional dimension of RTDI policy in Convergence regions depends on a significant upgrading of the planning, implementation and management skills in the regions. This which does not necessarily mean responsibility for policy being increased at regional level but it does mean that intermediary institutions need to be effective.

In several countries, the increasing territorial focus is reflected in a tendency to involve urban areas in RTDI strategy, especially to create gateways³ (Ireland) or strengthen infrastructure and research potential in weak urban areas (Portugal, Hungary, Poland and Slovenia). In a number of small countries where the regional dimension is not really relevant, authorities are in the process of creating a decentralised structure, such as in Slovenia or Estonia.

Interregional cooperation is an equally important dimension of regional RTDI policy since it encourages regional actors to widen their reach to stretch their value chain and to realise spill-over effects over a larger area. This is particularly relevant for weak regions where research centres and firms do not achieve the critical mass needed to play any role in an international context. There are some interesting examples in border regions in Spain and Portugal and in the small countries in the EU12. Interregional cooperation, especially for Convergence regions with weak endogenous potential, is a means of increasing competitiveness by joining together with stronger regions to develop an area of specialisation. Nevertheless, this potential appears to have been exploited only to a limited extent.

³ Spatial policy aiming to reinforce knowledge infrastructures and institutions in weak urban areas. See Ireland National Report.

Table 1 – Features of national and regional innovation policy across the EU27

Country	Regional dimension to innovation policy	Governance	Features of national policy	Features of regional policy
AT	Yes	Mixed	<ul style="list-style-type: none"> - Central government is responsible for research - Funding of RTDI infrastructure and competence centres - National programmes of incentives for enterprises 	<ul style="list-style-type: none"> - Federal States carry out specific STI strategies to set their own regional priorities; poor coordination - Regional incentives and agencies, focus on broad innovation policy
BE	Yes	Strongly regionalised	<ul style="list-style-type: none"> - Federal State only supports general incentives 	<ul style="list-style-type: none"> - Walloon region – poles of competitiveness, measures for SMEs and for linking large enterprises and universities - Brussels capital region – support for RTDI in enterprises and universities and for spin-offs - Flemish region – no RTDI policy as such but RTDI horizontal priority, emphasis on innovation, increasing attention to SMEs
BG	No	Strongly centralised	<ul style="list-style-type: none"> - National strategy targeted at stimulating cooperation between private and public bodies to encourage RTDI in enterprises and to develop clusters 	<ul style="list-style-type: none"> - No regional dimension, RISs in 2008 identified main regional needs
CY	No	Strongly centralised	<ul style="list-style-type: none"> - Special emphasis on SMEs, - Priorities: Innovation Poles and Business Incubators, Innovation Support Services, Access to Financial Resources, Innovation Culture 	<ul style="list-style-type: none"> - No regional dimension
CZ	Yes	Strongly centralised	<ul style="list-style-type: none"> - Emphasis on cooperation between private and public sector 	<ul style="list-style-type: none"> - Regions play a marginal role and have limited capacity (local technological centres) - Prague has more capacity
DE	Yes	Strongly regionalised	<ul style="list-style-type: none"> - Central government and Länder have shared responsibility - Länder deal more with applied research and federal state more with universities and basic research 	<ul style="list-style-type: none"> - Strong support to high tech industries and RTDI Infrastructure (universities and research institutes) - networks and poles with focus on innovation transfer

Country	Regional dimension to innovation policy	Governance	Features of national policy	Features of regional policy
DK	Yes	Mixed	<ul style="list-style-type: none"> - Emphasis on SMEs 	<ul style="list-style-type: none"> - Danish growth council: integrate national and regional level of growth policy - "Growth forums" implement regional strategies
EE	No	Strongly centralised	<ul style="list-style-type: none"> - National strategy to increase RTDI intensity (spending, infrastructure, researchers) 	<ul style="list-style-type: none"> - Initial experiments with RITs
ES	Yes	Fairly centralised	<ul style="list-style-type: none"> - Shared competencies, central government more focused on research and increasing funds - Boost of research and attention to SMEs 	<ul style="list-style-type: none"> - Regional strategies similar to the national, but more focused on local needs
FI	Yes	Mixed	<ul style="list-style-type: none"> - National competencies - focus on innovation from supply to demand orientation and wide range of measures 	<ul style="list-style-type: none"> - strong regional dimension in the implementation of a national strategy - Local agencies and centres to delivery national policy - RTDI policy as balancing mechanism (siting of centres and universities in peripheral regions)
FR	Yes	Mainly centralised	<ul style="list-style-type: none"> - Reinforce collaboration between universities and enterprises, competitiveness poles, support to research projects and not institutions, improve universities 	<ul style="list-style-type: none"> - most initiatives are co-funded by the central government which is a key actor in defining innovative strategy. - However, there is a regional dimension, generally more demand oriented (networks, clusters), but also relevance of ICT and research and technology transfer - Some differences emerge between national and regional priorities
GR	Yes	Centralised	<ul style="list-style-type: none"> - Increase competitiveness and move Greece towards a knowledge economy - Private sector at the centre of interventions 	<ul style="list-style-type: none"> - RTDI policy concentrated in the ROPs - Significant role in the identification of main content of interventions
HU	No	Strongly centralised	<ul style="list-style-type: none"> - Increase RTDI and innovation capacity is the main focus 	<ul style="list-style-type: none"> - Regions tend to focus on clusters and incubators but there is no specific regional dimension of innovation strategy

Country	Regional dimension to innovation policy	Governance	Features of national policy	Features of regional policy
IE	Yes	Mixed	<ul style="list-style-type: none"> - In recent years accent on innovation 	<ul style="list-style-type: none"> - regional authorities coordinate and manage national and EU funds; Regional offices of Industrial Promotion body (Industrial development authority)
IT	Yes	Mainly regionalised	<ul style="list-style-type: none"> - shared competencies between State and Regions, but unclear division of roles - national policy more focused on grants for research in enterprises and universities 	<ul style="list-style-type: none"> - Recent devolution and learning process for regions - Strategy generally based on development of poles and competence centres
LT	No	Strongly centralised	<ul style="list-style-type: none"> - Priorities are applied research and product development - Emphasis also on knowledge dissemination and national clusters 	
LU	No	Strongly centralised	<ul style="list-style-type: none"> - Broad range of activities - Relevance of cross-border and transnational cooperation 	<ul style="list-style-type: none"> - No regional dimension even if SPD 2000-06 was used to relocate RTD organisations in the South
LV	No	Strongly centralised	<ul style="list-style-type: none"> - Applied research and product development and private/public partnerships are the key priorities - National cluster programme 	<ul style="list-style-type: none"> - Initial experiments of local forms of support to enterprises
MT	No	Strongly centralised	<ul style="list-style-type: none"> - Platforms in ICT, health-biotech, energy and environment, water and renewable energy sources and manufacturing - Tackle dichotomy between local low innovative enterprises and external advanced enterprises 	<ul style="list-style-type: none"> - Aid schemes for enterprises -tend to prioritise SMEs; - RTDI incentive package for industry; - Capacity building in research and innovation infrastructure.
NL	Yes	Mainly centralised	<ul style="list-style-type: none"> - National strategy focused on creating favourable innovation conditions and on stimulating growth rather than reducing disparities 	<ul style="list-style-type: none"> - "Area-based Economic Opportunities" translates national strategy at regional level, support to poles of excellence and strong regions

Country	Regional dimension to innovation policy	Governance	Features of national policy	Features of regional policy
PL	Yes	Mainly centralised	<ul style="list-style-type: none"> - National and regional levels do similar things - Improving the competitiveness and innovativeness of enterprises and development of the services sector 	<ul style="list-style-type: none"> - Increasing regional involvement - Few differences across RISs despite disparities
PT	No	Strongly centralised	<ul style="list-style-type: none"> - National Strategy focused on increasing access to knowledge, supporting technology based start ups, improving RTDI system - Reducing the gap between research policy and enterprise policy 	<ul style="list-style-type: none"> - No significant regional dimension, but new regional OPs support SME innovation system.
RO	No	Strongly centralised	<ul style="list-style-type: none"> - Main objectives: increasing performance of RTDI, involvement of the private sector, developing human resources for RTDI, increasing institutional capacity 	<ul style="list-style-type: none"> - Regional dimension at a very early stage (everything concentrated in the capital), though there are RISs and RDAs (regional development agencies)
SE	Yes	Mixed	<ul style="list-style-type: none"> - Not a really strategy, private sector is the driving force - The State supports strong innovation environment, universities and agencies are important at regional level 	<ul style="list-style-type: none"> - Priority is to strengthen the innovation capacity of existing businesses, stimulate the growth of new businesses and attract skills, capital and companies to the region. - Attempt to create regions (NUTS2 units) in order to rationalise policy implementation
SI	No	Strongly centralised	<ul style="list-style-type: none"> - Boosting applied research, but SMEs remain problematic 	<ul style="list-style-type: none"> - Very limited regional dimension; RDAs have a limited role
SK	Yes	Strongly centralised	<ul style="list-style-type: none"> - Improve innovation environment, promote technology transfer and services and support innovation in private sector 	<ul style="list-style-type: none"> - Planned implementation of Regional innovation centres, which should provide links between universities and enterprises

Country	Regional dimension to innovation policy	Governance	Features of national policy	Features of regional policy
UK	Yes	Mixed	<ul style="list-style-type: none"> - Main priorities: support for business innovation; encouragement of innovative research base; development of an international innovation strategy; ensuring that the right skills are available; encouraging innovation in the delivery of public services; identifying opportunities to promote spatial clusters 	<ul style="list-style-type: none"> - Regional Development Agencies implement the national strategy according to regional needs - National Technology Strategy Board assist Regional agencies

2.3. ROLE OF THE ERDF

In the 2007–2013 programming period the ERDF has been crucial to RTDI policy implementation at regional level in all EU15 countries under both the Convergence and Competitive objectives, and to all institutional levels in EU12 countries. The relevance of ERDF at strategic, management and financial levels clearly emerges in all countries. In the more developed countries ERDF has allowed lagging regions to catch up with stronger regions in establishing the preconditions for RTDI development (infrastructure, research potential and human resources (Germany and Austria). The Competitiveness regions with the support of ERDF were able to increase the scope and the intensity of RTDI support (Finland, Italy, Denmark, France and United Kingdom). More projects or specific regional programme could be financed to a large extent (Netherlands). In the EU 12 and in most Convergence regions (Portugal, Italy and Greece) the ERDF is a major source of funding of RTDI. Most of the funding is going to the business sector in the form of grants and services and to public research and ICT infrastructure; collaborative research and networking is supported to a lesser extent.

The ERDF plays an important role in supporting RTDI policy, especially in the EU12 countries (see Table below). In three Member States (Poland, Slovakia and Latvia), the size of ERDF financing is larger than national expenditure, while in Lithuania, Bulgaria and Estonia ERDF support goes from 60% to 99%. In other EU12 and Greece it amounts to between 40% and 59% of national expenditure. The remaining EU12 and Portugal stand between 20% and 39% of national expenditure. The high figures for many of the EU12 countries, especially for Poland, are indicative of its importance. In the other EU15 countries, ERDF financing is particularly significant in Spain and Italy, where it accounts for around 6–7% of total RTDI expenditure.

Table 2 – ERDF allocated to innovation in comparison with national expenditure on RTDI

Country	ERDF allocated to innovation (EUR million)	Innovation ERDF as % national RTDI expenditure* (Annual average as % RTDI in 2006)
SK, LV, PL	14.647	>100%
LT, BG, EE	2.382	60–99%
GR, MT, HU	5.339	40–59%
RO, CZ, PT, SI, CY	11.194	20–39%
ES, IT	14.029	5–19%
EU27 (convergence + competitiveness)	61.401	4,10%
FI, UK, FR, DE, IE, AT, BE, SE, NL, DK, LU	13.810	<5%
Territorial cooperation	1.912	n.a.

* Ratios can be higher than 100 due to the fact that the numerator (our definition of ERDF allocated to innovation) and the denominator (national RTDI spending) are in part comparable. The definition of innovation is wider and the difference between the two figures is likely to vary across countries. Despite these aspects marring the soundness of such ratio, it still provides a useful indication of the relative importance of ERDF for innovation policy financing.

Source: Applica – Iseri Europa calculations based on DG Regio data

In the present programming period, both private and public expenditure on RTDI could decline significantly if fiscal consolidation severely constrains public expenditure and if private investment is limited by uncertainty about future economic prospects. If so, the ERDF could become even more important. This already emerges from the high level of engagement in most EU15 Competitiveness regions where firms are able to react and invest in innovation. The impact in weaker regions where firms may stop investing in risky projects or are unable to find the necessary co-financing (Portugal, EU12) could well be different.

Apart from giving financial support, in most countries, with the exception of the United Kingdom, Germany, Austria and other northern countries, where structural funds support well established national strategies, the ERDF has played an equally significant role in promoting a strategic approach to regional RTDI policies, highlighting their regional and systemic dimension (RISs and ROPs), the need for networking between stakeholders and upgrading intermediary institutions (France, Italy, Portugal, Greece, Spain, Ireland and EU12). This has paved the way to a more clear-cut division of competences and roles among actors and level of government.

The share of the ERDF allocated to innovation in Member States is related to the scale of national expenditure on RTDI (as the Figures below show). The larger national expenditure on RTDI relative to GDP, the larger the share of ERDF devoted to innovation tends to be. This is also the case if Convergence and Competitiveness regions are considered separately (see Figures below). In other words, Member States tend to devote more resources to innovation the more they are already spending in this area. The relationship, however, is by no means systematic. In Convergence regions, a relatively large share of the ERDF is allocated to innovation in Italy, Portugal, Austria and the United Kingdom given their national expenditure on RTDI, while in Germany, France and Hungary, a relatively small share of ERDF resources goes on innovation (Note that since the RTDI figures relate to the national rather than the regional situation, they may overstate the level of expenditure in Convergence regions in these countries).

In Competitiveness regions, Denmark, Luxembourg and Slovakia devote a relatively large share of ERDF support to innovation given their national expenditure, while the opposite is the case in Cyprus, Hungary and Portugal. The graph is useful to explain the reason for this apparent inconsistency. Some strong RTDI countries spend less ERDF than average because, as emerges from the national analysis in these countries, the ERDF poses some fundamental problems of accounting for expenses eligibility for risky and immaterial projects which pushes their administrations to finance other kinds of projects with ERDF and use national funds for complex RTDI projects. The explanation for the lower than average innovation expenditure in RTDI of less advanced regions that can be observed in the cluster in the lower part on the left hand side of the graph is rather different; those countries have a low absorption capacity due to insufficient actors and institutional know how.

This pattern of ERDF allocation implies a general reinforcement of existing differences in RTDI expenditure across Member States, though the different levels of intervention in Convergence and Competitiveness regions might lead to some catching up in the former.

Figure 1 - ERDF effort for innovation and national expenditure on RTDI

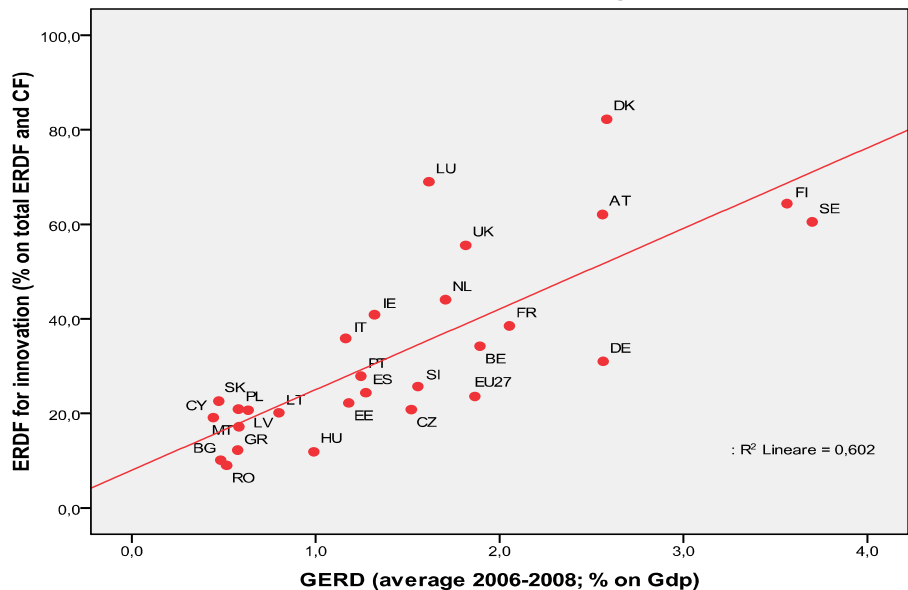


Figure 2 - ERDF effort for innovation in Convergence obj. and national expenditure on RTDI

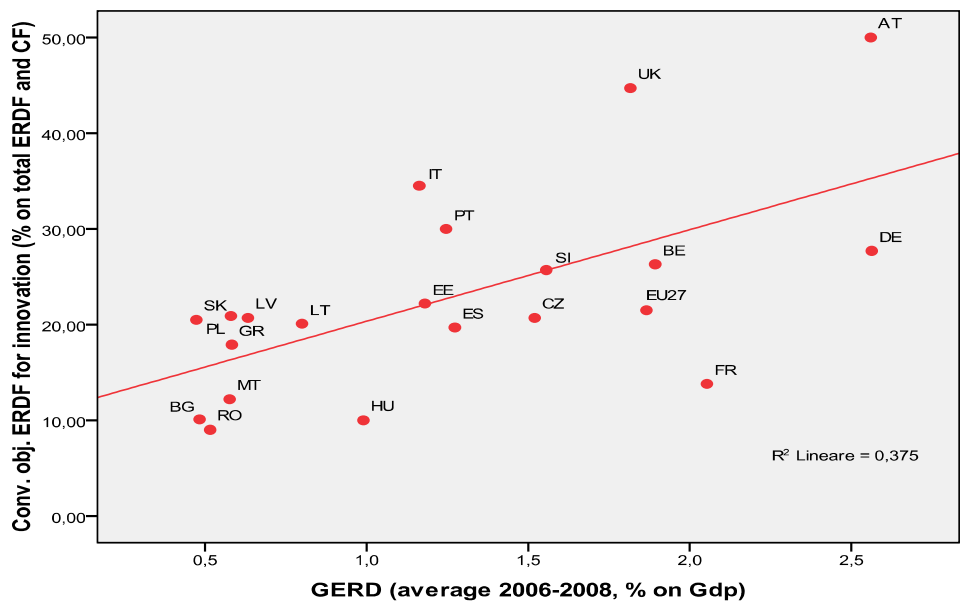
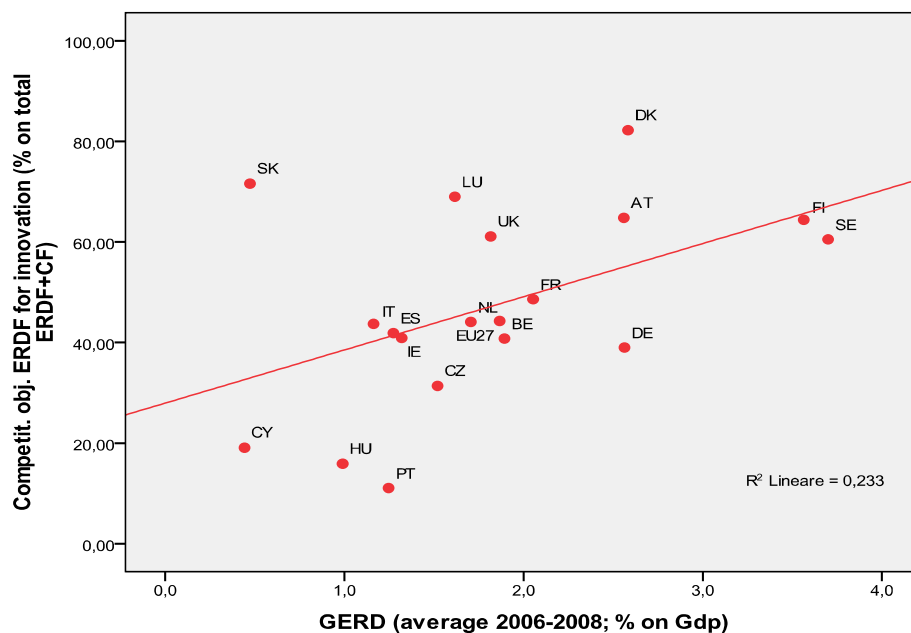


Figure 3 - ERDF effort for innovation in Competitiveness regions and national expenditure for RTDI

As indicated above, another potentially important role of the ERDF is to support the regional dimension of RTDI policy. The table below shows the share of the ERDF going to regional programmes in respect of innovation as compared with total funding.

In Austria, Belgium, Germany, Finland, Ireland, the Netherlands, Sweden and the United Kingdom, all the ERDF is implemented at regional level and the same is the case for the ERDF allocated to innovation. The same is almost true of France, where 99% of the ERDF is spent at regional level. The four Southern EU15 Member States (Greece, Spain, Italy and Portugal) implement around half of the ERDF devoted to innovation at regional level; in Italy and Spain over two-thirds is implemented at regional level. This reflects the smaller extent of delegation of innovation policy in these two countries than development policy in other areas. In Greece and Portugal, by contrast, the regionalisation of innovation is in line with that of overall funding. This is also the case in Poland and Hungary, while in the Czech Republic and Slovakia, innovation funding is centralised whereas some of the overall ERDF financing is regionalised. In all the other countries, the ERDF devoted to innovation is centralised, though in some countries, even if resources do not go to regions directly, the ERDF is used to support regional strategies or is in part implemented at local level (as in Denmark and Slovenia).

Overall, the ERDF provides important support to the regionalisation of innovation policy in many Member States. It helps to finance directly important regional programmes or supports the activities of regional agencies and innovation centres. Indirectly, it supports a wide range of measures to assist SMEs, which are often implemented at regional level.

Table 3 – ERDF allocated to regional programmes: innovation and total expenditure (%)

Country	Innovation Total	ERDF Grand Total		Country	Innovation Total	ERDF Grand Total
AT	100.0	100.0		HU	30.3	27.1
BE	100.0	100.0		CZ	2.1	21.7
DE	100.0	100.0		SK	1.5	15.5
FI	100.0	100.0		BG	0.0	0.0
IE	100.0	100.0		CY	0.0	0.0
NL	100.0	100.0		DK	0.0	0.0
SE	100.0	100.0		EE	0.0	0.0
UK	100.0	100.0		LT	0.0	0.0
FR	99.6	99.1		LU	0.0	0.0
IT	53.1	67.8		LV	0.0	0.0
ES	44.4	67.4		MT	0.0	0.0
GR	48.7	50.5		RO	0.0	0.0
PT	47.3	47.3		SI	0.0	0.0
PL	28.0	29.8		EU27	47.1	44.0

Source: Applica – Ismeri Europa calculations based on DG Regio data

2.4. ERDF CONTRIBUTION ACROSS POLICY AREAS

In order to give an insight into RTDI strategies, innovation expenditure can be divided into three policy areas – *Boosting applied research*, knowledge transfer and the development of innovation ‘poles’ and the creation of an *Innovation-Friendly Environment*.

In the 2007–2013 programming period, support from the ERDF for innovation amounts to EUR 65.5 billion, 75% of this being concentrated in Convergence regions and 22% in Competitiveness ones, with the remaining 2% being allocated to cross-border cooperation.

Of the three policy areas, *Boosting applied research* accounts for the largest part of funding in Convergence regions, 37% of total resources being devoted to this, while *Knowledge transfer and support to innovation poles* is the largest element of funding in Competitiveness regions, accounting for 39% of the total, and *Innovation-friendly environment* is the most important under the Territorial Cooperation Objective, accounting for 40% of the total. Expenditure in the three areas reflects different RTDI regional policy objectives and strategies:

- *Boosting applied research* and product development encompasses two main policy aims to invest in research potential, through university led applied research projects including infrastructure and equipment endowment; and to support RTDI in firms, especially SMEs.
- *Knowledge transfer and support to innovation poles and clusters* reflects a policy strategy based on reinforcing infrastructure within clusters and poles and networking activities, assisting SMEs to upgrade technologically by encouraging cooperation between research centres and firms through clusters or poles.

- *Innovation-friendly environment* is an horizontal intervention to set up the preconditions for RTDI, especially in infrastructure for developing information and communication technology, and in services for SMEs': technological audits, financial services and human capital.

Table 4 – ERDF contribution to innovation by policy area

	Convergence	Competitiveness	Territorial cooperation	Total
	EUR million			
Boosting applied research and product development	18,305	4,898	586	23,789
Knowledge transfer and support to innovation poles and clusters	15,641	4,777	516	20,934
Innovation friendly environment	14,505	3,275	810	18,590
ERDF for innovation	48,451	12,950	1,912	63,313
	%			
Boosting applied research and product development	37.8	37.8	30.7	37.6
Knowledge transfer and support to innovation poles and clusters	32.3	36.9	27.0	33.1
Innovation friendly environment	29.9	25.3	42.3	29.4
ERDF for innovation	100.0	100.0	100.0	100.0

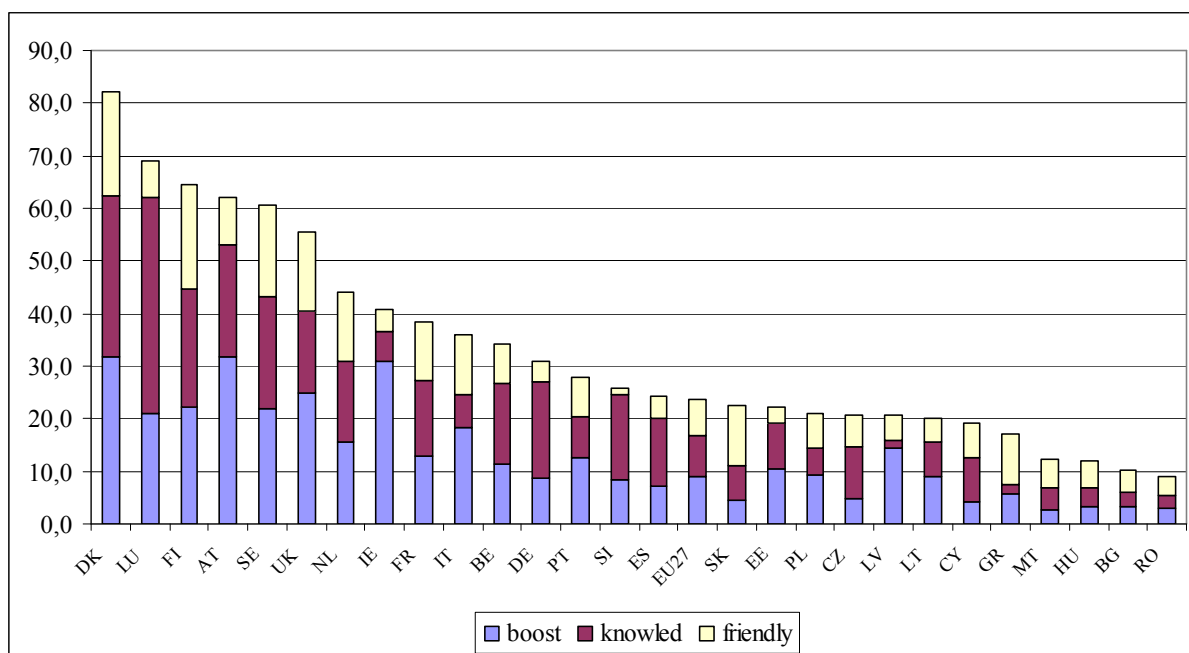
Source: Applica-Ismeri Europa calculations based on DG Regio data

In the Figure below, the resources allocated to innovation in each country are divided into the three policy areas and are shown in relation to their share of total ERDF support. A simple cluster analysis suggests that three main types of strategy can be identified:

1. A share of ERDF devoted to innovation around the EU average and a preference for “*Boosting applied research*” (in Italy, Ireland, Poland and the three Baltic States);
2. A relatively large share (i.e. relative to the EU average) of ERDF allocated to innovation and a preference for “Knowledge transfer and the development of innovation poles” (in the three Nordic countries, Germany Austria, the Netherlands, Luxembourg, the United Kingdom, and Slovenia).
3. A relatively small share of ERDF allocated to innovation and a preference for “Innovation friendly environment” (in Belgium, Greece, Spain, Portugal and most of the EU12 countries).

These figures indicate that there are significant differences between Convergence and Competitiveness regions both in the share of resources devoted to RTDI and the policy areas to which they are allocated.

Figure 4 – Share of ERDF allocated to innovation by main policy area in Member States (%)



“Boost” = Boosting applied research; “Known” = Knowledge transfer and poles; “Friendly” = Innovation friendly environment.

Source: Applica – Ismeri Europa calculations based on DG Regio data

As compared with the previous programming period, there is a shift of support towards “Innovation friendly environment” and a reduction in the importance of “Boosting applied research”, which may in part reflect a rising awareness of the importance of creating the pre-conditions for the development of competitive innovation systems in EU12 which benefited of a substantial increase in funding.

It is also important in this regard to take account of national policy on innovation and the relationship of the ERDF to this. In Germany, Austria, Ireland and Luxembourg, for example, relatively little of ERDF support goes on creating an “Innovation-friendly environment”, but a large part of national funding is devoted to this. The ERDF in these cases, therefore, is used to complement national policy by supporting other policy areas. By contrast, as indicated below, in many other countries national funding for RTDI is relatively small and the ERDF provides much of the financing. In these cases, the ERDF support closely reflects overall RTDI policy.

The different strategies pursued are also generally “demand oriented” and are aimed at involving enterprises in innovation, especially SMEs. The development of research centres and the financing of infrastructure are, however, essential elements in creating the capacity to innovate, especially in the EU12 countries.

It is equally of interest to compare the amount of resources devoted to traditional support of enterprises with that allocated to support of innovation (see Table below).

Table 5 – Support to enterprises other than on innovation in the 2007–2013 period (% of funding allocated to enterprises)

	Other support to enterprises as % of total			Other support to enterprises as % of total
HU	44.6		UK	12.6
BE	42.7		SI	12.3
RO	36.9		LT	12.3
DE	36.6		PL	12.0
CY	35.5		FR	11.2
ES	27.8		NL	9.8
AT	22.7		EE	8.6
IE	20.7		MT	8.2
BG	20.1		CZ	6.9
PT	19.1		LV	6.6
EU27	18.2		IT	3.4
GR	15.5		SK	2.3
SE	15.3		DK	1.3
FI	13.7		LU	0.0

Source: Applica – Ismeri Europa calculations based on DG Regio data

The importance of more traditional support is highest in Hungary (45% of total resources going to enterprises), while it is zero in Luxembourg and only around 1% in Denmark. The variation in the share of enterprise support which takes a more traditional form, therefore, varies markedly across countries, irrespective of whether they comprise mostly Convergence or Competitiveness regions. The share is particularly small in Italy, the Czech Republic, Slovakia and Estonia as well as in Denmark and Luxembourg. In some EU12 countries with low traditional, the classification of the interventions might have overvalued the innovation support categories of expenditure.

In brief, examination of innovation by policy area indicates that

1. The policy mix between countries and Objectives does not differ radically in most cases.
2. Strategies, however, do differ as does the emphasis, or focus, of support in similar strategies.
3. In Convergence regions, there is a tendency for policy to be more oriented towards creating an “innovation friendly environment” and supporting infrastructure and research potential, while in Competitiveness regions it is more oriented towards “Knowledge transfer and innovation poles” by strengthening cluster and pole activities and their capacity to be a central point for SMEs and in general to coordinate the activities of actors. “*Boosting applied research*” is of major importance in a few EU12 countries (Italy for RTDI in firms; and Ireland and Poland and the Baltic States, for the enhancement of the university research potential), though it is significant everywhere.

Innovation oriented measures are predominant in the overall support for enterprises, which reflects the emphasis in the Cohesion policy guidelines on these, though the degree of innovativeness of the interventions remains an open question.

3. Evidence available on performance of innovation measures co-financed by ERDF

Evidence on the output and results from support for innovation is at the moment extremely limited. Countries are very much in an initial stage of deploying funding in support of policies. The information, in some countries (specifically Denmark, Greece, Spain, Hungary and Poland) where either no funding, or hardly any, was committed in 2008 should be carefully verified (see table commitments in annex D).

In relative terms, the resources committed on innovation measures are in line with the overall commitments as regards support for enterprises, though slightly less than the total ERDF and Cohesion Fund resources committed. Differences are much greater across countries in this respect than across policy areas within countries.

(Data for certified expenditure are not available by type of intervention and, accordingly, cannot be considered here.)

In general, projects began to be implemented on a significant scale only in 2009 and, as a result, there is very little information at present on outputs or results. This is the case, if to differing degrees, for all countries and under all Objectives. The slow start of the programmes is reflected in the lack of completed projects and consequently of result and outcome indicators, especially for the large OPs in Convergence regions.

Analysis of performance in the 2007–2013 period can at present only be based on indirect evidence of programme execution in terms of ongoing projects and, in some cases, of partial output indicators, which, however, say little about the effectiveness of expenditure. The information available indicates what is already underway, the outputs and results that can be expected, the measures which are a continuation of those implemented in the past and those which are considered a priority within the regional strategy. In what follows, we highlight the most common measures implemented in each policy area and identify those considered to be the most innovative. (See table 9 and 10)

A second indirect source of information, more relevant for assessing the effectiveness of RTDI programmes, are the results of ongoing or past evaluations on policies implemented in the previous programming period and which, because of their success or importance, are being continued within the present programming period. Since there is a fair degree of continuity of measures in the 2007–2013 OPs, this evidence gives some indication of the effectiveness of the policies being followed, especially since the evaluations concerned should have helped the authorities to make improvements.

It should be emphasised in this regard that there are fewer evaluations for the previous programming period in the EU12. Accordingly, the authorities concerned tend to draw upon the experience in EU15 to formulate policies. While this may mean a faster learning process, institutional capacity remains a crucial condition for success.

It can also be observed that there is a correlation between the progress made in implementing present programmes and the scope and depth of the evaluations that have taken place.

3.1. MAIN ONGOING INTERVENTIONS

This section focuses on the main types of intervention in the regions, identifying the most common form they have taken, and the potential effect on the regional dimension of policy.

Main interventions in Convergence regions

Delays in spending the funding available seem to be longer in Convergence regions than in Competitiveness ones, which may reflect a lack of capacity to absorb resources for innovation because of a weaker productive system. This difficulty may well have been accentuated by the economic crisis.

A number of interventions have been launched and have been partially implemented since 2008. In the following paragraphs, we highlight the general objectives of the instruments and of the main interventions activities that are being carried out at the present time in Convergence regions. We can try to group the most frequent interventions to explain the underlying logic supporting the strategy that Convergence regions are following.

- 1) Grants to support in-house firm RTDI and develop innovations. These are very frequent and large sums of money are dedicated to this aim. It is a typical demand side intervention subject to the condition that firms know where and how to carry out RTDI and have resources to invest, and that public authorities know how to select truly innovative projects. These instruments have been designed in many ways according to the priorities and context, they can focus on large or small firms; they may require a group of firms including a research body or a University, to jointly participate to encourage networking etc. Most Convergence regions use these instruments to directly support innovation and to create an innovation context, since participating bodies usually continue to cooperate once the project ends (see evaluations in various countries Italy, Germany, Austria). Countries and regions that implemented these instruments are Austria, Germany, Italy, Latvia, Malta, Poland, Lithuania and United Kingdom. They are often implemented at national level and in some cases (in Spain, Italy) through multiregional programmes, which are territorially blind, but which tend to widen the range of potential projects for selection. They may, however, be focused on areas of regional specialisation or on priority areas like eco-efficiency or energy-efficiency (Romania, Austria).
- 2) Advanced services for firms – These interventions take various forms and may include more than one service; vouchers for firms, technological audits, or financial engineering for innovation (venture, seed, start up capital etc.) or managerial support to start ups and spin offs. In their simplest form, these measures are designed to create an *Innovation-friendly environment* and make firms more aware of their innovation needs and of the market and technological issues that are at stake. The most complex versions include the support and financing of start ups– these services may be centrally implemented (financial engineering or vouchers) but often are tailor made for SMEs at regional level.
- 3) Technology parks, clusters, poles, centres of excellence, incubators and other kinds of intermediate institutions. These are common measures with many variations that usually depend on the maturity of the regional innovation strategy and the quality of the actors. In Convergence regions it sometimes includes a significant share of infrastructure and equipment. It is the most regionally oriented intervention as it is most often carried out at a regional level and implies a territorial strategy as well as a sector or technological priority setting. Most, if not all, countries and many regions concentrate resources by promoting these kinds of institutions.

Beside a concentration effect these instruments are able to stimulate synergies and territorial or sector spill-over in the area of innovation. These instruments are particularly strong in Germany, Italy Convergence regions and France where regions have a decision making power and are often represented in their governing bodies. In EU12 countries they take the form of intermediate institutions located in the newly created regions which have the task of creating the conditions for a regional RTDI policy. The risk with the proliferation of these structures is that they may be too weak to be sustainable, namely, too few firms (evaluation of Austrian clusters in Convergence regions) or research bodies are involved and as a result the infrastructure on site is not fully exploited. These bodies can be supported in many ways, from infrastructures and equipment to incentives to cooperation and networking, focused incentives to SMEs in the form of innovation project financing, services to SMEs etc. The number of countries and regions that use these instruments has increased significantly since the previous programming period to the extent that their number may be too large in relation to the potential. In the EU15 most countries finance this kind of intervention (Portugal, Italy, France, Germany, Spain), some for the first time. In the EU 12 those clusters are also widespread (Romania, Hungary, Poland, Lithuania, Czech Republic, Slovenia). Concern for their sustainability in EU15 and EU12 are rising specially since there are no evaluations to support neither their feasibility nor the selection process.

- 4) Funds for competitive research and equipment and strengthening centres of excellence, combine with scholarships and other forms of support for human capital development, and collaborative research outside clusters and technology parks. These measures are less common but play an important complementary role in many countries where RTDI potential needs to be strengthened, where universities and research centres are weak and technologically unfocused and have little relationship with businesses. Countries that have invested most in these measures are Spain, Poland, Ireland, Romania, to a lesser extent Italy and Portugal. These interventions are most effective when designed within a coherent regional strategy. In some countries (many of the EU12), however, they are implemented centrally as a general growth incentive to the knowledge producing sector.
- 5) Finally several interventions focus on ICT infrastructure at national and regional level, which may include the development of e-services of different kinds. This form of intervention has been applied widely in many regions, in EU15 mainly in the form of service development and in EU12 in the form of the development of basic infrastructure development (Spain, Poland, Italy and Slovenia). These infrastructures are not specifically regional and may involve all regions in a country and be centrally implemented. Their risk is linked to the degree of utilization of the facilities by the regional actors as well as the ability of the public and private sectors to make an appropriate use of the technologies involved (e-commerce, e-health, etc.).

Main interventions in Competitiveness regions

Implementation of RTDI programmes in Competitiveness regions is progressing faster than in the Convergence regions. In general, interventions are more diversified and less standard than in Convergence regions, since the regional innovation system is more advanced, actors are relatively strong and the needs, development objectives and potential are clearer. The focus of policy is on SMEs and on the engineering of innovation to establish a permanent exchange between knowledge producers and businesses.

The interventions so far implemented can be grouped by scope and objective. There is a variety of underlying strategies within the same group of interventions since regions focus more tightly on needs

and priorities because of the more limited amount of funding available. Despite this, the groups of intervention are much the same as in Convergence regions though the specific features differ. Competitiveness regions, however, spend much less on infrastructure for ICT, clusters, and research. Their interventions focus more on soft measures, on services, technology transfer, networking targeting the involvement of SMEs in the innovation process, enhancement of human resources and support for collaborative research. Some regions focus more on development in priority areas of technology and encourage the establishment of technology platforms. The size of projects tends to be much smaller than in Convergence regions, though in most cases there is substantial private co-financing.

The following groups of intervention can be highlighted:

- 1) ICT services for SMEs and citizens aimed at developing the use of existing infrastructures and facilities (Austria, Spain, France, Ireland, Slovenia and Cyprus).
- 2) Research and knowledge production involving collaborative research with Universities (Austria, Italy, Netherlands, Portugal, Spain). Fundamental intervention to foster networking and the adaptation of university research to business sector needs. In Competitiveness regions this aspect is easier to deal with, since the economic fabric tends to be stronger than in Convergence regions. In Cyprus this action has been directed towards international cooperation and has received a great deal of interest.
- 3) Technology transfers in poles, clusters and incubators These measures are aimed at reinforcing the existing centres, mostly through the financing of ad hoc projects involving knowledge producers, businesses and SMEs, with the support of local authorities (Austria, Spain, Italy, Netherlands, France, Germany). These measures pave the way for interregional cooperation and the development of common platforms. They are at the core of the regional strategy and are often supported by various forms of technological scenario-building, foresight exercises and other forms of forward-looking analysis to identify future areas of specialisation.
- 4) Eco-innovations in several areas (Belgium, Austria, Czech Republic, Germany, France). These measures are aimed at improving regional performance as well as at developing technological know how in green technology.
- 5) Grants to students and support to the employment of researchers in firms (Germany, Netherlands, Cyprus). These are complementary measures to enhance in-house know how and skills in SMEs.
- 6) Technologically focused centres (Czech Republic and Italy). These are measures to reinforce regional strength in a specific area of technology and its application in the business sector.

The following common tendencies are evident:

- The Competitiveness regions have encountered only minor problems in the launching of RTDI initiatives, which often account for the bulk of ERDF expenditure. The economic crisis does not seem to have hampered the start up of projects and the demand of enterprises for grants has generally been high.
- Projects have been initiated in three policy areas in Member States, though with differing emphasis: *Boosting applied research* in some regions, innovation poles in some, human capital in others. The differences in emphasis to some extent reflect differences in the maturity of innovation systems, but also derive from a desire to support SMEs during the crisis.
- Many country reports underline the complexity of EU funding procedures and the consequent inclusion in the OPs of the most straight-forward and least risky projects. Problems of coordination and institutional capacity seem to affect interventions less than in Convergence

regions, perhaps because of the more decentralised and clear demarcation of responsibilities in the former.

- The growing need for interregional and international collaboration is evident in a number of aspects of RTDI policy, such as between firms or in respect of the mobility of researchers
- Even though evidence of results is limited, it is already clear that there are some key issues which require examination in order to judge the effectiveness of innovation policy. These include:
 - the extent to which interventions are in line with local needs;
 - the success of the poles of innovation or centres of research which are being supported;
 - the extent to which funding is concentrated on the most effective measures and in the most productive areas, avoiding excessive fragmentation of support;
 - the effect of support for an “innovation friendly environment” on the overall innovation capacity of the region and on other policy areas.

3.2. EVIDENCE AVAILABLE FROM EVALUATIONS AND STUDIES

Evaluations undertaken and other studies carried out on the interventions are a second source of information.

The table below summarises, for each Member State, the evidence available on performance from relevant evaluations or studies as reported in the national innovation policy papers. The national experts have been asked to report evidence referring to the current programming period as well as evidence related to initiatives implemented in the past (2000–2006 or 2004–2006 for EU10) when there is a continuity in the type of initiatives being carried out. It should be noted that some current evaluations carried out internally by the administrative authorities were not available to experts and are not recorded.

The considerable continuity in interventions between programming periods in several cases has already been mentioned. Some types of measure have been maintained in the present programming period, which implies that spending authorities have a favourable view of them. This is the case for RTDI aid schemes for enterprises in Italy, Spain and Germany and the level of applications from firms tends to be high. A high degree of continuity can also be found in Austria, France, Belgium, Finland and Ireland in relation to knowledge transfer and *boosting applied research*. Some degree of continuity is also evident in the United Kingdom, Portugal and most of the remaining EU15 countries. In only a very few countries, most notably the Netherlands, there is no continuity with the previous programming since a new planning system has been set in which ERDF support a specific regional program.

EU12 Member States do not have much experience of previous measures to draw upon, at least so far as business support for innovation is concerned. These countries have continued to support research in the public sector but, at same time, have launched schemes to boost RDTI in the business sector drawing upon experience in the EU15. In some cases, measures have been continued from the previous, relatively short, programming period (e.g. in Slovakia, Latvia, Lithuania, Estonia, Slovenia and Hungary).

The country experts were encouraged to consider not only evidence directly related to ERDF but also that relating to national sources of funding when the measures concerned are similar. The following observations and the table below summarise the country reports.

Across Europe, evidence on performance drawn from relevant evaluations and studies is non negligible in EU15 and more limited in EU12. In fact, there is evidence in most of the EU15 countries (Austria,

Belgium, Germany, France, Spain, United Kingdom, Finland, Italy, Denmark, Ireland, Sweden) while it is missing or poor in other MSs (Portugal, Greece, Luxembourg). As mentioned, in some cases (e.g. Netherlands), existing evidence referring to the past cannot be considered relevant due to the discontinuity between the interventions carried out in the different programming periods. We consider as relevant only those evaluations carried out during 2000–2006 which focus on instruments and interventions which are also supported in the present programming period.

The evidence on performance is much more scarce across EU12. Relevant evaluations/studies have been identified in some cases (Poland, Slovakia, Estonia, Slovenia) while very limited evidence or no evidence at all could be found in the other countries due to an evaluation culture which is only now starting to grow, or to the fact that the studies carried out focus mostly on implementation efficiency and procedures rather than on performance.

Obviously, as highlighted in the Evalsed⁴ guide, the choice of methods and techniques stems from the evaluation design and depends on: the type of the socio-economic intervention; the evaluation purpose – accountability, improving management, explaining what works and why, etc.; the stage in the programme/policy cycle – prospective analysis/retrospective analysis. Furthermore, the appropriateness of the methods and techniques depends on the scope of the evaluation – which could range from an overall evaluation of a multi-sectoral programme, to an in-depth study of a particular evaluation question.

In general, two main methodological approaches can be identified in relation to the evaluations and studies examined in the country reports. On one hand, counterfactual approaches which use econometric analysis are employed mostly ex ante and ex post to assess the effects of RTDI aid schemes (e.g. Impact of RTDI in the Spanish productive fabric; Survey on R&D incentives, Italy). They are mainly used in academic studies and, to a more limited extent, in programme evaluations supported by the Managing Authorities. They rely on large databases of balance sheet indicators and are commonly not circumscribed to ERDF funding but analyse instruments financed by several sources including national and regional resources. These approaches differ in terms of the actual techniques used in each specific case and also in relation to the selection of the control groups. The examples made in the reports highlight that the basic ways to approximate the counterfactual are used: comparison between beneficiaries and non-beneficiaries; before-after comparisons of beneficiaries. There are various approaches to eliminate the selection bias (e.g. difference-in-differences, matching, discontinuity identification strategies).

On the other hand, approaches based on questionnaire surveys are adopted mostly in mid-term and ex post evaluations of the OPs to collect information (e.g. Up-dated mid-term evaluation of the industrial research projects co-financed by the NOP Research 2000–2006, Italy). They are generally focused on analysing policy efficiency and instrument effectiveness as perceived by beneficiaries of aids. Control groups are not always identified.

Finally there are studies and, in particular, mid-term evaluations characterised by combinations of methods for collecting and analysing information such as case studies and input-output analysis (e.g. Case study on regional effects of ERDF co-funded investments in companies in Niederösterreich, obj.2, 2000–2006, Austria; Evaluation on the skills Impact of the Smart Scheme, UK), focus groups and expert panels etc. See individual country reports and their references for more detailed information on relevant evaluations carried out, specific methods used and results.

⁴ http://ec.europa.eu/regional_policy/sources/docgener/evaluation/evalsed/index_en.htm

As regards the three policy areas considered here, most of the evidence available relates to initiatives which can be classified as *Boosting applied research* and product development. This includes funding of “pre-competitive development” and “industrial research” projects and related infrastructure. It also includes support for the creation and development of innovative enterprises. The evidence on performance highlights the mainly positive effects of grants at firm level (increased turnover, employment and productivity), and also the continuity in investing in innovation and in the networking of firms with knowledge producers. These interventions often support businesses which for the first time carry out innovation activities, which become endogenous to the businesses and go on without further support.

The deadweight effects and the impact of measures on the overall competitiveness of the economy are in general less visible but, in some cases, results show that financial incentives involve a deadweight (e.g. Italy, Poland).

It must be emphasised that the results of the evaluations of RTDI grants, where available, seem to be strongly dependent on the method used, the control groups and the dataset. In the case of Italy where a major share of funds has been allocated to RTDI support, there are positive results in terms of innovation in products and processes, investment and collaborative research among beneficiaries, patents etc. However, an excessive length of time for decision making and payments adversely affected the overall performance of the program.

The (mainly) positive evidence on performance of initiatives within this policy area is most relevant where the share of resources allocated to *Boosting applied research* is highest. In Ireland, Austria, Italy and Spain Convergence, Portugal Competitiveness, over 50% of total ERDF resources are devoted to this area. Over a third of ERDF resources are allocated to *Boosting applied research* in France, United Kingdom, Finland, Sweden, Netherlands, Denmark, Greece, Competitiveness Belgium, Germany and Italy, and Convergence Portugal. The share of this policy area is also large in those EU12 countries where some positive evidence on performance (Estonia, Poland and Competitiveness Slovakia) is also available.

There is more limited evidence available on performance as regards knowledge transfer and support to innovation clusters and poles. This policy area includes direct (aid schemes) and indirect support (infrastructures and services) for knowledge and technology transfer as well as direct and indirect support for the creation of poles (involving public and non-profit organisations as well as enterprises) and clusters of companies. Evidence on performance of measures in this policy area, where available, is mostly mixed. Positive effects are reported in terms of increased cooperation, public-private partnerships and engagement of SMEs. Negative or neutral effects are evident in the form of the small impact of advanced services on organisational change and a limited improvement in managerial capacity. Moreover, doubts are expressed concerning the economics of innovation poles and their capacity to self-sustain their activities. In France an independent evaluation on the 71 Pôles de Compétitivité arrived at positive conclusions as regards the momentum of concentration and synergic efforts of all the actors which they have generated. However, it also concluded that 32 of the 71 poles needed to redefine their strategy more or less fundamentally. These results may be relevant more generally, since little or no evidence on the performance of such poles or clusters exists elsewhere.

Over 50% of total ERDF resources have been allocated to knowledge transfer, clusters and poles in Convergence Belgium, in Convergence Germany and in Luxembourg and over a third in Finland, Netherlands, Denmark, Sweden in Competitiveness Germany, Spain and France. The share of resources devoted to this policy area is also high in EU12 but, as stressed, almost no evidence on performance is available: over 1/3 of total ERDF in Lithuania, Estonia, Cyprus, Malta, Slovenia, Hungary, Czech Republic and over 25% of total ERDF in Poland, Bulgaria, Competitiveness Slovakia.

Table 6 – Evidence (not available, mixed, positive) at EU27 level related to the % of ERDF resources for innovation by policy area and objective

Policy area	EVIDENCE	CONVERGENCE	COMPETITIVENESS	TOTAL
Innovation friendly environment	n.a.	96,8	60,0	88,2
	Mixed			
	Positive	3,2	40,0	11,8
Knowledge transfer and clusters	n.a.	41,4	36,0	40,0
	Mixed	34,8	30,9	33,8
	Positive	23,8	33,1	26,2
Boosting applied research	n.a.	34,6	29,1	33,5
	Mixed	2,4	29,9	7,8
	Positive	63,0	40,9	58,7
Total innovation	n.a.	55,5	41,3	52,3
	Mixed	11,9	21,0	14,0
	Positive	32,6	37,7	33,8

The estimation is made on the basis of the financial allocation of each policy field which has been evaluated in one or more of its components. The estimation includes only 2007–2013 evaluations or those 2000–2006 evaluations on interventions which were carried on in the present programming period. The percentage corresponds to the funds allocated in each policy area which is covered by one or more relevant evaluation.

Limited evidence exists in relation to initiatives to create an innovation friendly environment. Some evidence of mainly positive effects exists only in France, Denmark, United Kingdom and Convergence Germany. Evidence of negative results of a particular initiative geared towards the creation of a public ICT network has emerged in Italy.

The lack of evidence, in some countries and regions, could be considered worrying in cases of innovation financing devices and e-government interventions which are very diffused and used across the majority of MS.

Over 40% of total ERDF resources are devoted to *Innovation-friendly environment* in Convergence France and Greece. High shares (over 25%) can be also observed in the case of United Kingdom, Finland, Denmark, Netherlands, Italy and Sweden as well as in Competitiveness Belgium and France, in Convergence Spain and Portugal. Across the EU12, a very large share of resources, sometimes the largest chunk is allocated to this policy area. This is the case for instance in Slovakia, Bulgaria, Cyprus, Malta, Romania. In the light of this, gathering more evidence on these kinds of initiatives appears even more urgent. It is also worthwhile stressing that some initiatives in this policy area are new or innovative in a given context, and there are less well-established methods to evaluate them, differently from aid schemes.

The summary table indicates that, overall, across the three policy areas slightly less than half of the allocated funds have been subject to evaluation or study either during the present programming period or the previous one. Of the evaluations carried out, 14% were mixed in their results and 34% were positive. These aggregate results differ greatly across countries, as do the number of evaluations which have been carried out. In Germany, Belgium, Austria, Poland, Sweden, Finland, France, United Kingdom and Ireland evaluations there are evaluation covering roughly 70% or more of the funds allocated to the three policy areas. Results are mixed in some cases (Belgium, Finland, Hungary, United Kingdom, France and Denmark) but on the whole they tend to be positive (See table 7). It is worth noting that when all the results and outcomes are positive, this may cast some doubts on the degree of independency of the evaluation exercise and in these countries, the evaluators' selection procedure and the methodological standards should be revised for the next programming period.

Table 7 – Evidence (not available, mixed, positive) related to the % of ERDF resources for innovation by country and objective

	CONVERGENCE			COMPETITIVENESS			TOTAL		
	n.a.	mixed	Positive	n.a.	mixed	Positive	n.a.	mixed	positive
AT	44,8		55,2		35,6	64,4	6,6	30,3	63,1
BE	18,4	81,6		24,0	76,0		22,0	78,0	
BG	100,0						100,0		
CY				100,0			100,0		
CZ	100,0			100,0			100,0		
DE			100,0	17,6		82,4	6,5		93,5
DK				0,0	38,5	61,5		38,5	61,5
EE	13,5		86,5				13,5		86,5
ES	71,3		28,7	68,7		31,3	70,3		29,7
FI				30,8	69,2	0,0	30,8	69,2	0,0
FR	35,6	23,7	40,7	32,9	39,2	27,9	33,2	37,6	29,2
GR	100,0						100,0		
HU	49,5	50,5		72,2	27,8	0,0	51,0	49,0	
IE				10,4	14,3	75,2	10,4	14,3	75,2
IT	45,5		54,5	64,9		35,1	49,0		51,0
LT	100,0						100,0		
LV	100,0						100,0		
LU				100,0			100,0		
MT	100,0						100,0		
NL				100,0			100,0		
PL	31,3	24,5	44,2				31,3	24,5	44,2
PT	100,0			100,0			100,0		
RO	100,0						100,0		
SE				28,5		71,5	28,5		71,5
SI	4,5		95,5				4,5		95,5
SK	55,6		44,4	20,2		79,8	50,9		49,1
UK	27,7	48,5	23,7	26,7	43,2	30,1	27,0	44,7	28,4
EU27	55,5	11,9	32,6	41,3	21,0	37,7	52,3	14,0	33,8

Table 8 – Examples of good practices in evaluation indicated by the experts

Country	Title	Policy area/Focus	Reasons for considering the evaluation good practice	Additional information
Finland	Evaluation of the Finnish National Innovation System	<p>Innovation friendly environment. The evaluation covers the whole range of issues concerning the national innovation system, including the regional aspect of innovation policy. The objectives are: to identify ways of addressing future challenges, to suggest adjustments and reforms, and to draw conclusions on governance and steering.</p> <p>It is not a direct evaluation of ERDF but it is relevant for EU Cohesion Policy support to innovation.</p>	<p>The evaluation analyses from a broad perspective the important aspects of innovation policy with references on recent scientific studies on innovation, including several studies carried out for this evaluation project. The conclusions include suggestions for policy adjustments and reforms. The major part of the analysis and conclusions are relevant from the point of view of most EU countries.</p> <p>The panel commissioned about a dozen supporting studies and conducted an extensive structured survey. It interviewed and heard over 100 actors and experts. All available information was analyzed both qualitatively and quantitatively.</p>	<p>Authors: An international evaluation panel chaired by Reinhilde Veugelers.</p> <p>Evaluation of the Finnish National Innovation System – Full Report / Policy Report</p> <p>www.evaluation.fi</p> <p>Publisher: Taloustieto Oy (on behalf of the Ministry of Education and the Ministry of Employment and the Economy). Helsinki 2009.</p>
Finland	<p>The role of competence clusters in pooling the strengths of regions – interim evaluations of the Centre of Expertise Programme (2007–2013).</p> <p>Osaamisklusterit alueiden yhdistäjänä.</p> <p>Osaamiskeskusohjelma (2007–2013) väliarviointi.</p>	<p>Knowledge transfer, innovation poles and clusters. In 2007 the OSKE (Centre of Expertise Programme) began to utilize a new cluster-based operating model. The OSKE is a special measure of regional development aimed at exploiting expertise of an internationally high standard on the basis of regional strengths.</p> <p>The main task of the evaluation is to assess the functionality of the new operating model but it</p>	<p>The evaluation analyses the functionality of the new cluster model which is in various forms used in several EU countries. It draws conclusions of the emphasis of the programme and of its role in national innovation policy. It also analyses the management of the programme.</p> <p>The study is based on analysis of programme documents and monitoring indicators, interviews of cluster experts, decision makers, cluster coordinators</p>	<p>Authors: Antti Pelkonen, Jari Konttinen, Juha Oksanen, Ville Valovirta & Johanna Lehväsluoto.</p> <p>Publications of the Ministry of Education and the Ministry of Employment and the Economy, Innovation 44/2010. In Finnish with an abstract in English.</p>

		also analyzes the operations of each cluster, alongside the success and effectiveness of operations in the first three years. It is linked with regional ERDF programmes because ERDF is an important source of finance for the innovation projects of OSKE.	and project managers, and a literature review of international application of the cluster model.	
Spain	Impact of RTDI in the Spanish productive fabric (“Impacto de la I+D+i en el sector productivo español”)	Boosting applied research. Effects of CDTI aid schemes to increase the probability of undertaking internal RTDI expenditure by firms. The results show robust evidence of higher investment probability in supported firms – an increase around 32.4% – compared with a control group of non supported similar firms.	Based on leading academic research and good quality data (Technological Innovation Survey of the Spanish Statistical Institute), a counterfactual methodology with sophisticated econometric techniques is used to evaluate the effect of RTDI aid schemes in overcoming barriers to innovation and stimulating additional RTDI activities by firms.	Authors: Centro de Desarrollo Tecnológico Industrial (CDTI) (Spanish Centre for Industrial Technology Development), Madrid, 2009.
Spain	Evaluation Report on Public Calls for ICT aid schemes (“Informe de Evaluación de las Convocatorias TIC”)	Knowledge transfer. Effects of the Madrid ICT aid scheme on market results of beneficiary firms.	A three folded methodology: 1) thorough statistical analysis of the beneficiary firms’ database, 2) questionnaire sent to 233 participant firms (137 positive replies) and 3) Several in depth interviews to check the quantitative results of the previous steps.	Authors: DG de Innovación tecnológica, Comunidad de Madrid (DG Technological Innovation, Madrid Autonomous Community), report commissioned to Novadays S.L., Madrid, 2008.
Austria	Case study on regional effects of ERDF co-funded investments in companies in Niederösterreich, objective 2 programme 2000–2006 (Bewertung der Bedeutung von geförderten Unternehmen im	Boosting applied research. Investment in companies directly linked to research and innovation	The impact study employs a twofold methodological approach: The impact of ERDF co-funded investment projects on the company strategy and innovation capacity is analysed by means of qualitative methods (interviews). Furthermore, fiscal effects, impacts on added value and on the employment	Authors: Pech, S., Bröthaler, J., Gruber, M. (June 2008) Client: Amt der Niederösterreichischen Landesregierung, Abt. Raumordnung und Regionalpolitik

	Ziel-2-Programm Niederösterreich)		situation caused by company activities are evaluated through a comprehensive regionalized input-output-analysis. The diverse integration of the companies in the regional economic system caused by intermediate inputs and salary payments could be shown.	
Germany	ERDF contribution to the development of the regional innovation system in Bremen (Analyse zu den Wirkungen der EFRE-Förderung auf das regionale Innovationssystem im Land Bremen und daraus abgeleitete Handlungsoptionen für die Fortführung des RWB-Zieles nach 2013)	Knowledge transfer, innovation poles and clusters.	The study analyses the contribution of several instruments co-financed by ERDF to the development of the regional innovation system. It highlights the importance of a coordinated use of different instruments to develop regional clusters. The study shows that not only the classic approaches to support R&D, but also instruments like infrastructure development, grants for investment or training can support cluster development if used in a coordinated manner under a strategic framework.	Authors: Bornemann, Holger; Rautenberg, Ralph; Breuer, Anja (Prognos AG)
Italy	Up-dated mid-term evaluation and ex- post evaluation of the industrial research projects co-financed by the NOP Research 2000-2006	Boosting applied research and product development. The evaluation analyses the quality and technological level of the funded projects, their role in the strategy of the beneficiaries and the cost-benefit of the schemes. It also address the time projects	A step forward compared to previous programme evaluations focused on financial progress of measures. Methods used: 1) peer review of the technological level of the projects funded; 2) survey of beneficiaries to analyse the strategic role of projects and their effect; 3) financial cost-benefit analysis of funded projects;	Authors: Ismeri Europa with a team of sectoral experts
Italy	Analysis of the implementation process of the regional IT network	Innovation friendly environment. The study assesses the implementation of the regional IT network (RUPAR)	Among the few studies to assess a project that is still being funded in this and other regions without a	Regional evaluation team of public investments - Apulia Region (Gaudino, S. and

	<p>(RUPAR) for the public administration (“Innovazione nella PA attraverso la realizzazione di una rete telematica unitaria. Analisi del processo di implementazione”)</p>	<p>and the preliminary effects of e-government support</p>	<p>clear evaluation of its actual results. It was found that only half of potential beneficiaries used the infrastructure, with other service providers being used besides RUPAR, indicating a suboptimal use of public resources.</p> <p>Moreover, interoperability was not well developed and other technical problems exist. The method used consists of a survey of beneficiaries (municipalities).</p>	<p>Moro, G. – 2008)</p>
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Table 9 – Evidence available on the performance of the implemented interventions by allocated resources, country, objective and policy areas (IFE=Innovation friendly environment; KTP=Knowledge transfer, clusters and poles; BAR=Boosting applied research and product development)

Member State / Policy area	CONVERGENCE		COMPETITIVENESS	
	allocated res. as % of tot. ERDF for innov.	Evidence available on performance from relevant evaluations/studies	allocated res. as % of tot. ERDF for innov.	Evidence available on performance from relevant evaluations/studies
EU15				
Austria	CONV		COMP	
IFE			15%	Positive evidence (provision of advisory services for SMEs increases competitiveness)
KTP			35%	Mixed evidence (increased RTDI capacity – e.g. technopol-programme; sustainability still to be assessed; positive effects of clusters on the economy)
BAR	55%	Positive evidence (at firm level)	50%	Positive evidence (spillovers of RTDI activities in research centres on SMEs; employment increase; economic returns)
Belgium	CONV		COMP	
KTP	56%	Mixed evidence (e.g. positive impact of poles of competitiveness on collaboration, critical mass etc.; negative aspects: low impact of advanced services on managerial capacity, organisational change etc.)	40%	Mixed evidence (e.g. positive impact of poles of competitiveness on collaboration, critical mass etc.; negative aspects: low impact of advanced services on managerial capacity, organisational change etc.)
BAR	26%	Mixed evidence (positive on employment and innovation capacity; neutral on profits)	36%	Mixed evidence (positive on employment and innovation capacity; neutral on profits)
Denmark	CONV		COMP	
IFE			24%	Positive evidence (public-private collaborations on climate policy; Copenhagen Finance IT Region etc.)
KTP			37%	Positive evidence (e.g. business cluster of mechatronics)
BAR			39%	Mixed evidence (international centre for innovation).
Germany	CONV		COMP	
IFE	11%	Positive evidence (communication infrastructure)		

Member State / Policy area	CONVERGENCE		COMPETITIVENESS	
	allocated res. as % of tot. ERDF for innov.	Evidence available on performance from relevant evaluations/studies	allocated res. as % of tot. ERDF for innov.	Evidence available on performance from relevant evaluations/studies
KTP	66%	Positive evidence (of cooperative projects on RTDI intensity and of networking)	47%	Positive evidence (of transfer centres, networks and clusters)
BAR	24%	Positive evidence (additional investment; patenting activities; spin-offs etc.)	36%	Positive evidence (RTDI infrastructure)
Spain	CONV		COMP	
BAR	52%	Positive evidence (increased RTDI capacity; increased labour productivity etc.)	39%	Positive evidence (of grants at firms level)
Finland	CONV		COMP	
KTP			35%	Mixed evidence (evaluation focused on selection criteria and identification of appropriate indicators)
BAR			34%	Mixed evidence (positive at firm level; no relevant impact on Convergence of disadvantaged regions)
France	CONV		COMP	
IFE	41%	Positive evidence (evaluation of regional innovation strategies is currently being carried out)	28%	Positive evidence (evaluation of regional innovation strategies is currently being carried out)
KTP	24%	Mixed evidence (of Pôles de compétitivité: more collaborative projects and active involvements of SMEs; partial achievement of objectives and need for reorganisation in some poles)	39%	Mixed evidence (of Pôles de compétitivité: more collaborative projects and active involvements of SMEs; partial achievement of objectives and need for reorganisation in some poles)
Ireland	CONV		COMP	
KTP			14%	Mixed evidence (BMW programme of innovative actions e.g. centres of excellence)
BAR			75%	Positive evidence (e.g. IDA RTDI capability scheme; PRTI)
Italy	CONV		COMP	
BAR	55%	Positive evidence (mainly at firm level)	35%	Positive evidence (mainly at firm level)
Sweden	CONV		COMP	

Member State / Policy area	CONVERGENCE		COMPETITIVENESS	
	allocated res. as % of tot. ERDF for innov.	Evidence available on performance from relevant evaluations/studies	allocated res. as % of tot. ERDF for innov.	Evidence available on performance from relevant evaluations/studies
KTP			35%	Positive evidence (centres of excellence)
BAR			36%	Positive evidence (net creation of jobs and increased competitiveness of beneficiary firms)
Un. Kingdom	CONV		COMP	
KTP	24%	Positive evidence	30%	Positive evidence
BAR	49%	Mixed evidence (positive of RTDI support in terms of investment leverage; negative in terms of costs for additional job created compared to other initiatives)	43%	Mixed evidence (positive of RTDI support in terms of investment leverage; negative in terms of costs for additional job created compared to other initiatives)
EU12				
Estonia	CONV		COMP	
KTP	40%	Positive evidence (e.g. competence centres programme)		
BAR	47%	Positive evidence (e.g. RTDI financing programme)		
Hungary	CONV		COMP	
KTP	36%	Mixed evidence (Limited analyses e.g. cooperation research centres - 2005 - analysis of key problems hampering cooperation)	37%	Mixed evidence (Limited analyses e.g. cooperation research centres - 2005 - analysis of key problems hampering cooperation)
Poland	CONV		COMP	
KTP	25%	Mixed evidence (of technological parks: firms involved are those that usually make more use of public money)		
BAR	44%	Positive evidence (at firm level)		
Slovakia	CONV		COMP	
KTP	9%	Positive evidence (of incubators, technology parks etc. In terms of implementation efficiency)	25%	Positive evidence (of incubators, technology parks etc. In terms of implementation efficiency)
BAR	14%	Positive evidence (in terms of implementation efficiency, but bottlenecks in the process)	37%	Positive evidence (in terms of implementation efficiency, but bottlenecks in the process)

Member State / Policy area	CONVERGENCE		COMPETITIVENESS	
	allocated res. as % of tot. ERDF for innov.	Evidence available on performance from relevant evaluations/studies	allocated res. as % of tot. ERDF for innov.	Evidence available on performance from relevant evaluations/studies
Slovenia	CONV		COMP	
KTP	63%	Positive evidence (centres of excellence: intensified cooperation and public-private joint exploitation of research equipment)		
BAR	32%	Positive evidence (on value added and employment at firm level)		

3.3. EXAMPLES OF NEW/ORIGINAL MEASURES BY POLICY AREAS

This section focuses on the most innovative interventions as they emerged from the country reports

In the case of *Innovation-friendly environment* in the **EU15**, the use of more innovative methods for financing high risk projects is something which most Member States have been trying to promote in both Competitiveness and Convergence regions, often drawing upon the JEREMIE experience. Another innovative approach is to extend urban functions and cooperation between urban areas in innovation policy to strengthen weak areas in regions. This implies joint organisation and common infrastructure, and is also relevant in the EU12 where regions tend to be weak or located in small countries.

Not surprisingly, initiatives considered as innovative differ greatly across the EU. Their common factor is that they focus on a specific need or potential at regional level, such as, for example, in Competitiveness regions, support for the specific application of technology (in health, bio-energy or services to solve coordination and operational problems in technology transfer). Planning and governance initiatives are rarer, though the French RIS has supported the regional dimension of innovation significantly and empowered the regions in this respect. In Convergence regions, more conventional measures are included, usually aimed at upgrading SMEs through services or coordinating RTDI activity in various ways, including through clustering.

In the **EU12**, the interventions focus on establishing intermediate institutions to central and local authorities in managing the policy and organising cooperation among the different actors.

A second area of innovation is support for clusters and poles and the selection and organisation of areas of activity and of participants along with the infrastructure to provide. Some countries are more advanced in this respect and are trying to develop risk financing for innovation and the provision of soft services to SMEs, as well as technological foresight analyses and other means of supporting strategic decision-making. A third area of innovation is support for research through centres of excellence, including in universities, and for the training of researchers.

The above illustrates the range of challenges that innovation policy, and most especially a regionally based approach, raises for the authorities concerned.

Table 10 – Examples of new/original measures or projects in the EU15

Policy area	EU 15 Country	Description
Innovation friendly environment	AT	Inter-communal business location co-operations are implemented in 3 Reg. Comp. programmes using comparatively less funds. This intervention is estimated as a highly innovative organisational improvement accompanied by joint infrastructure investment to create valuable common business locations and to achieve a significant decrease of costs for the participating municipalities.
	AT	Under ETC cross border programmes soft projects are developed to foster cross-border exchange, training and qualification of young talents in specific fields of advanced industrial production such as robotics.
	DE	Development of new university courses and research in areas of excellence: Support for universities has not so far been coordinated with regional development strategies.
	DE	Financing Instruments (venture Capital): Financing innovation and development in enterprises by new financial instruments is new for the few Länder that are experimenting with this.

Policy area	EU 15 Country	Description
	FR	Elaboration of Regional Innovation Strategies in all French regions (it is the first time that French regions carry out such an exercise which is expected to have a mid-term impact beyond its impact on the implementation of ERDF OPs)
	FR	Financial engineering for innovative companies (JEREMIE in Auvergne and Languedoc-Roussillon, co-investment fund in PACA) Support for participation of regional actors in FP7 (there is a clear and recent awareness of the importance of regional actors being involved in EU/international RTDI networks)
	UK	(obj.1) Venture Capital Funds/ Co-Investment Funds offering innovative approaches to overcoming market failure in capital markets for a wide range of company types at different stages of development.
	ES	A JEREMIE Fund set up by the Spanish Instituto de Credito Oficial (ICO) taking in two funds: a) A warranty fund giving warranties for business RDI projects, principally those awarded by CDTI and 2) A multi-instrument fund providing a series of venture capital tools (Another important JEREMIE fund has been set up by the Andalusian development agency, IDEA).
	PT	"Axis 3 – Financing and Innovation Risk Sharing" of COMPETE OP represents a significant innovation in SME support instruments, effectively facilitating access to bank financing as well as reducing the cost.
Knowledge transfer, innovation poles and clusters	AT	Instruments for knowledge transfer such as the Innovation Assistant Support Scheme, Innovation Coaching, networks for innovation projects are gaining in importance in Convergence and Competitive Programmes to transfer expert know-how of universities and research centres to companies.
	BE	The Technology Voucher Programme is a recent measure aimed at providing flexible support to SMEs from research centres in the Walloon region. The scheme is managed by the recently created Agency for Technology Promotion. The measure is considered a success as regards both the interest it receives from firms and the quality of services provided by the research centres.
	DE	A specific approach is to be found in the objective 1-programme of Niedersachsen, where a bundle of different initiatives were bound together to form one major project (innovation incubator at the University of Lüneburg).
	FI	Developing a Health and Well-being cluster. Aims: to create new hi-tech enterprises; to promote growth and internationalisation of health and well-being enterprises; to support RTDI and efficient exploitation of expertise in products, business, and promotion of health; to increase national and international cooperation; to actively develop the innovation environment and boost innovation activity; to support specialisation of centres of excellence.
	FI	Dynamic Bioenergy Cluster in Central Finland. Aims: to develop Central Finland as a region where almost the entire production of heat and electricity is based on local biomass; bio-energy technology and supply of expertise become significant business activities in both national and international markets. Reason for being considered new/original: good prospects because of high demand and wide cooperation basis: joint project of big energy producers, local SMEs, Energy Technology Centre of Expertise, bioenergy associations' educational institutes, public authorities and financiers.
	UK	(obj.1) Knowledge Spa centres of excellence offering opportunities to engage local business with knowledge base and realise commercial opportunities.

Policy area	EU 15 Country	Description
	UK	(obj.2) Regional Innovation Networks building on public sector opportunities in energy and environmental management, exploiting new opportunities for innovative solutions involving interactions between Knowledge Base Institutes/ public sector agencies/ business (SMEs). Key emphasis on harnessing public sector procurement opportunities.
	UK	(obj.2) Centres of Technology Excellence offering advice on knowledge and technology transfer in emerging markets.
	ES	Cooperative entrepreneurial RDI projects by means of so called "integrated Projects": RD experimental projects having a significant technological and industrial impact in the region, which must be carried out by Economic Interest Grouping or entrepreneurial consortia.
	ES	Projects boosting the transfer of research results to the business sector: Grants aimed at stimulating business RD demand projects by means of agreements between research and technological centres (applicants or implementing entities), which have obtained suitable research results, and the firms which may benefit from these results (co-financing entities).
	PT	Support for the implementation of Collective Actions and Collective Efficiency Strategies, such as Competitiveness and Technology Poles, other Clusters, and Urban Networks for Competitiveness and Innovation. The latter initiative is aimed at promoting the formation of urban networks with sufficient critical mass to attract and develop new urban functions and innovation activities and to strengthen factors of competitiveness.
Boosting applied research and product development	GR	Spin Off Spin Out (company spin out treated in the same way as university spin offs)
	NL	Development traject Ijdijk which is an innovation project in the North the aim of which is to investigate whether monitoring of dikes through sensor techniques is an effective water defence. It is new and original because of the experimental use of sensor technology and the collaboration between knowledge institutes and companies but also because it anticipates the consequences of climate change for water levels.
	NL	Safe tyres & Save Energy, a project in the East under which innovative tyres are developed (through the use of new materials) with the aim of energy saving and the future energy labelling of tyres.
	NL	C-energy, generating energy and electricity through tides and waves in the waters of Zeeland. It is an innovative combination of the development of new technology through collaboration of companies and knowledge institutes, in a context of future energy scarcity
	PT	The Innovation Voucher and the R&TD Voucher, included in business incentives schemes, consists of non-refundable grants of 75% of the cost of employing certified organisations from the National Scientific and Technological System.

Table 11 – Examples of new/original measures or projects in the EU12

Policy area	EU12 Country	Description
Innovation friendly environment	PL	Identification of future directions in scientific research and development using foresight method. In Poland foresight has not been used before (no evidence on performance available).
	LV	Financial engineering instruments, including venture capital, already used in 2004–6, have been expanded in the current period under the JEREMIE initiative.
	LT	Financial instruments to support innovative companies e.g. holding funds, venture capital, guarantees and interest subsidies.
	BG	Support, provided by the National Innovation Fund – grants, provided to enterprises to promote their innovative activities;
	CY	DIDACTOR supporting PhD holders to undertake research in the public or private sector
	SI	Inter-entrepreneurial education centres (IEEC): IEECs carry out workplace training for several enterprises, based on up-to-date equipments. The measure strengthens cooperation between education organisations and companies (new equipment, courses prepared according to the needs of companies), specialisation of educational organisations, and specialisation of local economies.
Knowledge transfer, innovation poles and clusters	PL	Support for establishment and development of business support networks on a supra-regional scale. In Poland the business support sector has developed in recent years, however there is a need to assure quality. Networks and collaboration could play a significant role (e.g. via transfer of good practice or standardisation of services).
	SK	The introduction of innovation vouchers to connect SMEs with universities and national research institutions. The Slovak Innovation and Energy Agency provides the vouchers to businesses for the “purchase” of services from certified research institutions. The vouchers are currently being piloted in the Prešov region.
	SK	Because of continuing difficulties of building Regional Innovation Centres, the Ministry of Education has launched a call for tender in June 2010 to support the creation of integrated Competence Centres based on cooperation between the private and public (academic) sector with high technology research infrastructure.
	EE	Technology Programmes – RTDI programmes have an important role in current policy by bringing together companies, research institutions and other stakeholders in specific areas of technology important for long-term economic development and by coordinating their activities.
	EE	Cluster Development Programme – a first major effort to facilitate interaction between different industrial sectors.
	EE	Innovation Voucher Programme – a new measure aimed at providing flexible support to SMEs to acquire services from research centres.
	BG	Establishment of scientific and technology transfer centres in Universities, University Science and Research Complexes, establishment of clusters, and other initiatives, financed by the Ministry of Economy, Energy and Tourism.
	BG	Support, provided by the National Science Fund for research activities, establishment of Centres of Excellence and research infrastructure, promotion of the participation of Bulgarian scientists in international science programmes.
	CY	Innovation vouchers

Policy area	EU12 Country	Description
	SI	RTDI centres of excellence (based on experience of the 2004–2006 period): The measure supports the development and functioning of centres of excellence in technology priority areas by concentration of high-quality research in these areas and integrate all stages in knowledge development: from basic research to the development of commercial applications.

4. Conclusions: main challenges faced by cohesion policy programmes

The following findings can be extracted from the analysis:

1. The ERDF provides important support for RTDI policy across the EU not only in financial terms but also in stimulating the development of more coherent strategies at regional level which take into account local characteristics and the needs of business.
2. RTDI policy varies across Member States according to their level of development, the public resources devoted to it, the division of responsibility for designing and implementing policy and the maturity of innovation systems.
3. A distinct regional dimension of the innovation policies has clearly emerged in recent years and specific interventions and policy areas which are regionally based have been increasingly financed by the ERDF. This has occurred almost irrespective of institutional arrangements in Member States, as even more centralised governments have devoted more resources to regional operational plans and given more margin of manoeuvre to local authorities and agencies.
4. The innovation activities specific to regions are mainly those included in the *Knowledge transfer and support to innovation poles* which has grown substantially due to the financial allocation for poles and clusters, as most countries and regions in Convergence have started to implement them on a large scale. Other interventions – mainly regional – can be found in *Boosting applied research* and *Innovation-Friendly Environment*. In the former projects for collaborative research and SMEs inclusion can have a strong regional base, be tailor made to local actors and local needs and potential. In the latter field many types of soft interventions from finance to services can be tailor made to fit regional needs and be locally managed. Infrastructure can be financed in *Boosting applied research* and *Knowledge transfer and support to innovation poles*, the first type of intervention goes to Universities and Research centres and is often centralized; the second type for clusters and poles has a strong regional base.
5. As the implementation of RTDI policy becomes increasingly regionally based, either through regionalisation or through different forms of decentralisation, the number of actors involved tends to increase and with it the need for coordination and capacity building.
6. The amount of public resources devoted to RTDI differs markedly across the EU, as does private expenditure. Both are largest in the Nordic Member States together with Germany and Austria, while Cohesion countries tend to have the lowest expenditure. Since ERDF support is concentrated in the latter, it has the effect of narrowing the gap to some extent, though it is still up to Member States to decide how much of the overall funding to devote to this policy area.
7. RTDI has become a major driver of growth in most EU regions. Innovation expenditure is cumulative and the more that is spent, the higher the multiplier effect on private expenditure tends to be, which, accordingly, is a potential source of widening economic and social disparities between regions. To set this process in motion in Convergence regions, policies need to create the preconditions for innovation, in terms of institutions and absorptive capacity, collective action and human resource development. The support provided by the ERDF can help create these preconditions.

8. The use of the ERDF for RTDI policy is constrained, however, by local demand from both SMEs and research centres for support as well as institutional capacity. In broad terms, therefore, the higher national expenditure on RTDI, the larger the share of ERDF support devoted to RTDI measures. Nevertheless, as noted above, the concentration of the ERDF in Convergence regions is helping the latter to catch up with levels of spending in other parts of the EU
9. At present, two main broad aims are common to national strategies and are reflected in cohesion policy across the EU, though they differ in importance between Member States. The first is a concentration of RTDI capacity in innovation poles to exploit excellence, specialisation and accumulated know-how. The second is the greater involvement of SMEs in RTDI, the adaptation of support services to this end and the general move towards a knowledge-based economy.
10. The relative weight attached to the three broad policy areas which can be distinguished, 'innovation friendly environment', 'boosting research' and 'knowledge transfer and innovation poles', varies across Member States. In general, Convergence regions put more emphasis on "innovation friendly environment" and Competitiveness regions on "knowledge transfer and innovation poles"; while "*Boosting applied research*" is accorded significant weight in a number of countries with particularly low levels of GDP per head (the three Baltic States and Poland, especially).
11. At the moment, RTDI interventions in the present programming period are in the initial stages in all Member States. Delays in their implementation are generally in line with those in other policy areas. Though they are a common feature in all Member States, they are more pronounced in Convergence regions. They seem to arise mainly from administrative difficulties – an overlap with programmes from the previous period and difficulties in implementation procedures, in particular – and only to a limited extent from the low demand of enterprises for funding because of the economic crisis.
12. The achievements of innovation policy so far can be assessed indirectly through the evaluation results of ongoing measures. The main features that emerge from the country reports are:
 - The number of evaluations that are relevant for a first assessment on the achievements of policy in the present period is relatively large in many countries since they relate to interventions which continue from the previous programming period.
 - As many as 50% of the interventions in the three policy areas are covered by evaluations
 - These evaluations are concentrated in countries which have systematically carried out evaluations as part of their management procedures.
 - For 11 countries (both EU12 and EU 15) there are no relevant evaluations that can be used to assess the measures implemented in the present programming period.
 - For a small number of countries (4), few evaluations have been carried out and consequently the measures implemented cannot really be assessed in terms of their (likely) performance.
 - Evaluations are mainly concentrated on grants to SMEs, for collaborative research, and to research institutions.
 - Evidence on *Innovation-friendly environment* intervention, both in the form of ICT infrastructure and e-services of various kinds, is scarce.
 - With few exceptions the evaluations carried out during the present programming period are scarce and many evaluation questions concerning instruments effectiveness and the impact of the crisis remain unanswered.

Focusing on the most frequent interventions we can conclude as follows:

- The results as regards grants to research institutions and firms for RTDI are generally positive in all countries. They have eased access of SMEs to research and innovation and have created a collaborative context which in most cases is self-sustainable. In some cases, there is evidence of positive effects on productivity, the development of new products and the application of new processes. Estimates of deadweight effects differ and seem to be closely related to ability to assess risk and select the most promising projects. Positive effects on employment are common to nearly all evaluations.
- Evaluations on knowledge transfer, clusters and poles are also widespread but their results are mixed since the policy is complex and frequent adjustments are needed.
- The third area is worryingly poor in evaluations in most countries; only Competitiveness regions have a fair number of evaluations with positive results concerning vouchers or other services to SMEs. The multifaceted feature of this field however makes attempts to extend the results as widely as in other policy fields very difficult.
- Infrastructure is a cross cutting intervention in the three policy areas, which is impossible to distinguish from other expenditure. There are no evaluation results as regards such type of expenditure, though in some evaluations doubts have arisen as to its use by beneficiaries.

Challenges and recommendations

In the country reports, a concluding section is devoted to the challenges facing innovation policy over the remainder of the programming period and beyond. A synthesis of the main points to emerge is set out below.

EU15

Across EU 15, the following main challenges have been identified:

- **Improvement of governance.**
 - **Knowhow with respect to policy design, implementation, monitoring and evaluation.** In most of the EU15 Member States, especially at the regional level, the evolution of this policy requires a continuous upgrading of the management skills and of the support instrument of technology foresight and intelligence. This requires building capacity in relation to designing, implementing, monitoring and evaluating innovation support. In particular, Convergence regions need to upgrade their institutions and support them with various forms of scenario foresights, technological intelligence, to support both the strategic decision and the implementation of more complex interventions. Most managing authorities do not do this and are unable to carry out the evaluation and selection of projects on the basis of an assessment of their risks. Consequently, the projects with the highest risks but perhaps the most potential are excluded from support.
 - **Coordination between administrative levels and actors.** The increasingly regional dimension of the policy creates problems of coordination between tiers of government especially in countries

where regions have shared administrative power on innovation and R&TD policies. In centralized countries efforts are needed to reinforce the regional dimension of the policy.

- **The regional dimension needs to be linked with interregional cooperation** in strategies as well as with more concrete forms of cooperation to increase the critical mass and widen the platform of actors and of opportunities in a given sector.

- **Need to reduce red tape and bureaucracy.** In many countries and regions red tape is perceived to discourage potential beneficiaries from supporting initiatives. In the United Kingdom tendering costs are considered too high for SMEs and discourage their involvement.
- **Mitigating the effects of the economic crisis.** In many Member States, the economic crisis had an effect, either positive or negative, on the taking up of the funds by the firms; the managing authorities should adjust firm policies accordingly and in the case in which firms' preference for risky innovations lowers significantly, they must avoid financing projects that are not bringing significant innovations to the firms.

EU12

Across the EU 12, the following main challenges have been identified:

- **Improving governance:**
 - **Building capacity and improving coordination.** The limited administrative capacity of managing authorities is a challenge in Bulgaria, Romania and Hungary and Poland.
 - **Assuring continuity in support.** The lack of continuity in support is considered a risk in many countries also as a consequence of the crisis.
 - **Identifying clear directions and agreed priorities.** Lack of or outdated innovation strategies establishes without a sufficient partnership affect many EU12 countries.
- **Raising the innovation culture and business participation in the RTDI system:**
 - **Raising awareness.** In Poland, Bulgaria and Malta, the lack of a culture of innovation is considered a key challenge. In Cyprus, an unsatisfactorily level of business RTDI is reported. In Romania there is also a need to increase awareness of innovation and create a more entrepreneurial culture. Often the lack of an innovation means a low demand for innovation services, as in the Czech Republic.
 - **Mitigating costs of participation.** The high costs of tendering for firms and researchers, hinders the participation of firms.
 - **Connecting business and the research community.** It is fundamental to improve co-operation between business and the research community.
- **Re-balancing the focus of support from infrastructures to softer initiatives and the enterprise sector.** There is too little focus on innovative services and the need to boost non-technological innovation in the programs.

In conclusion, the main challenges for the remainder of the programming period for RTDI interventions co-financed by the ERDF concern the need to:

- ensure effective governance of Innovation policy (as regards coordination between authorities and coherence between national and regional priorities, in particular) and the avoidance of the fragmentation and duplication of support;
- reinforce the regional focus of RTDI interventions, without giving rise to artificial entry barriers, the duplication of effort or an excessively local vision, while promoting trans-regional and transnational cooperation.
- secure effective cooperation between public and private actors
- enlarge the number of SMEs involved in RTDI policy
- coordinate support for RTDI with support for human capital development
- integrate services and the support provided by different bodies (universities, technology transfer agencies, research centres, etc.) in line with local needs
- demonstrate that innovation is essential for restructuring and improving competitiveness in times of economic crisis as well as in more favourable periods
- simplify procedures to encourage SMEs to apply for funding and for important projects to be supported.

A number of evaluations have been initiated during the present programming period but relatively few of these have focused on outcomes and the effectiveness of policy. The challenges listed above, however, prompt *many evaluation questions, which should be considered at both national and EU level. In this regard, it is important to reflect on:*

- the information and indicators available, both of which are still very limited and need to be improved and made more relevant in order to give a better insight into the content and quality of RTDI interventions;
- the need to increase evaluations in relatively neglected policy areas, especially relating to the creation of an *Innovation-friendly environment* and investment in infrastructure
- the possibility of assessing the different policy measures and the way they function in order to compare their effectiveness in different contexts (which involves perhaps carrying out impact evaluations of selected measures in different countries and/or regions, as well as case studies on implementation and partnerships)
- the possibility of undertaking a comparative assessment of the innovation poles and centres of excellence supported, which would enable a better understanding of the potential development of regional innovation systems and their roles in an EU context .
- the possibility of carrying out a detailed examination of the coherence between EDFR interventions and support for human capital development in terms of policy design and impact.

ANNEX A – 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); • regulatory improvements and innovative approaches to public services and procurement (this category could notably capture certain e-government investment 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 assistance funding, support for regional foresight)</p>
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 <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 • indirect support through funding for regrouping RTDI infrastructure in poles, infrastructure for clusters
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) 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), 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 B – CATEGORISATION OF INNOVATION EXPENDITURE BY POLICY AREA

Policy areas	code	Original Categories for priority theme in DG Regio database
Boosting applied research and product development	01	R&TD activities in research centres
	07	Investment in firms directly linked to research and innovation (...)
	06	Assistance to SMEs for the promotion of environmentally-friendly products and production processes (...)
	09	Other measures to stimulate research and innovation and entrepreneurship in SMEs
Knowledge transfer and support to innovation poles and clusters	02	R&TD infrastructure and centres of competence in a specific technology
	03	Technology transfer and improvement of cooperation networks...
	04	Assistance to R&TD, particularly in SMEs (including access to R&TD services in research centres)
Innovation friendly environment	74	Developing human potential in the field of research and innovation, in particular through post-graduate studies
	05	Advanced support services for firms and groups of firms
	14	Services and applications for SMEs (e-commerce, education and training, networking)
	15	Other measures for improving access to and efficient use of ICT by SMEs
	11	Information and communication technologies (...)
	12	Information and communication technologies (TEN-ICT)
	13	Services and applications for citizens (e-health, e-government, e-learning, e-inclusion)

Source: Applica – Ismeri Europa processing on DG Regio data

ANNEX C – SHARE OF ERDF RESOURCES BY POLICY AREA

	Objective Convergence																Total ERDF + CF					
	AT	BE	BG	CZ	DE	EE	ES	FR	GR	HU	IT	LT	LV	MT	PL	PT		RO	SI	SK	UK	Total
Boosting applied research and product development	27,6	6,8	3,3	4,8	6,6	10,4	5,6	4,9	5,7	5,2	18,8	9,0	14,4	2,6	9,2	13,4	3,1	8,3	3,9	21,7	8,1	8,9
Knowledge transfer and support to innovation poles and clusters	14,6	14,7	2,8	9,9	18,1	8,8	10,4	3,3	1,8	10,7	5,2	6,6	1,7	4,3	5,1	8,2	2,2	16,2	5,2	10,6	7,2	7,8
Innovation friendly environment	7,8	4,8	4,0	5,9	2,9	3,0	3,6	5,6	9,6	5,3	10,4	4,5	4,7	5,3	6,5	8,3	3,7	1,2	11,4	12,4	6,3	6,9
Total Innovation	50,0	26,3	10,1	20,7	27,7	22,2	19,7	13,8	17,2	21,1	34,5	20,1	20,7	12,2	20,9	30,0	9,0	25,7	20,5	44,7	21,5	23,6
Other not innovative investment	30,9	35,9	2,5	1,6	20,3	2,1	9,7	6,9	3,1	1,7	1,2	2,8	1,5	1,1	2,8	7,2	5,3	3,6	0,6	3,7	4,4	5,2
1. Entrepreneurship and innovation	81,0	62,2	12,7	22,2	48,0	24,3	29,3	20,6	20,3	22,8	35,7	23,0	22,1	13,3	23,7	37,2	14,3	29,3	21,0	48,4	25,9	28,8
2. Human resources	0,0	0,0	0,6	1,7	0,2	0,0	0,0	0,1	0,6	1,8	0,7	0,3	0,4	0,0	0,0	1,1	0,2	0,0	0,2	0,9	0,6	1,1
3. Transport	0,0	4,9	34,9	33,8	26,6	22,7	31,3	18,3	32,7	36,2	20,3	26,6	29,5	25,3	40,8	17,2	34,3	29,5	36,1	14,1	32,3	28,2
4. Environment and energy	2,9	9,3	32,3	24,0	11,9	27,6	27,6	20,9	26,3	24,8	18,3	23,6	23,1	37,6	19,9	17,7	34,1	27,8	21,4	13,9	22,9	22,7
5. Territorial Development	10,8	22,5	11,2	14,6	11,3	23,5	10,8	38,1	17,4	11,7	21,5	24,9	22,4	22,3	12,0	19,2	13,6	11,7	17,7	20,2	15,0	15,7
6. TA and capacity building	5,4	1,1	8,4	3,8	2,0	2,0	1,0	2,0	2,7	2,6	3,5	1,6	2,4	1,4	3,6	7,6	3,6	1,7	3,5	2,5	3,3	3,6
ERDF + CF	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Source: Applica – Ismeri Europa calculation on DG Regio data

	Objective Competitiveness																	Total obj.3	Total ERDF +CF		
	AT	BE	CY	CZ	DE	DK	ES	FI	FR	HU	IE	IT	LU	NL	PT	SE	SK			UK	Total
	Boosting applied research and product development	32,6	15,0	4,1	9,5	14,0	31,7	13,1	22,1	16,0	5,8	30,8	15,3	21,0	15,5	6,2	22,0			20,8	26,4
Knowledge transfer and support to innovation poles and clusters	23,0	16,0	8,4	9,4	18,2	30,6	21,9	22,4	19,1	5,6	5,9	13,1	41,0	15,4	2,8	21,3	36,4	18,4	17,3	6,6	7,8
Innovation friendly environment	9,2	9,8	6,6	12,4	6,9	19,9	6,9	19,8	13,6	8,7	4,3	15,3	7,0	13,2	2,2	17,2	14,5	16,3	11,0	10,3	6,9
Total Innovation	64,8	40,8	19,1	31,4	39,0	82,2	41,9	64,4	48,6	20,0	40,9	43,7	69,0	44,1	11,1	60,5	71,6	61,1	44,3	24,4	23,6
Other not innovative investment	15,3	16,9	10,5	0,9	12,3	1,1	8,4	10,2	4,1	12,0	10,7	1,7	0,0	4,8	1,3	11,0	0,0	10,2	7,7	0,5	5,2
1. Entrepreneurship and innovation	80,1	57,7	29,6	32,3	51,3	83,3	50,3	74,6	52,7	32,0	51,6	45,4	69,0	48,9	12,4	71,5	71,6	71,3	52,0	24,9	28,8
2. Human resources	4,1	1,4	0,0	3,3	12,4	0,0	0,0	0,8	1,2	0,0	0,0	0,5	0,0	6,6	0,7	0,0	0,0	3,8	2,9	9,9	1,1
3. Transport	1,1	5,9	12,1	0,0	2,7	0,0	14,6	3,5	8,9	18,1	19,6	6,8	0,0	4,8	30,9	6,8	2,8	0,4	8,8	13,2	28,2
4. Environment and energy	6,4	9,2	37,7	47,7	12,4	0,0	17,8	8,0	22,7	9,8	13,6	29,0	24,0	14,1	32,8	8,1	2,2	10,9	17,7	20,3	22,7
5. Territorial Development	6,1	23,4	16,8	12,4	18,5	12,9	16,1	8,8	11,5	36,6	13,5	15,1	3,0	21,5	20,2	9,7	20,4	10,0	15,7	22,3	15,7
6. TA and capacity building	2,1	2,5	3,8	4,4	2,7	3,8	1,3	4,3	3,1	3,5	1,8	3,1	4,0	4,1	3,1	4,0	3,0	3,5	2,8	9,5	3,6
ERDF + CF	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Source: Applica – Ismeri Europa calculations on DG Regio data

ANNEX D – Commitments by policy area (% of allocated resources) according to Annual Implementation Reports (data as of end of December 2008)

MS	Boosting applied research and product development	Knowledge transfer and support to innovation poles and clusters	Innovation friendly environment	Total innovation measures	Other not innovative investment	1. Entrepreneurship and innovation	Total ERDF and CF
AT	16.0	6.7	4.0	11.0	16.8	12.3	11.5
BE	77.6	64.9	50.0	65.8	96.8	79.0	85.4
BG	2.9	0.0	0.0	0.9	14.9	3.7	57.0
CY	31.3	12.4	0.0	12.1	0.0	7.8	2.3
CZ	7.7	2.4	5.1	4.4	29.5	6.2	13.5
DE	11.5	7.8	11.6	9.3	26.1	15.5	12.3
DK	0.0	0.6	0.0	0.2	0.0	0.2	0.2
EE	4.3	16.9	7.9	9.8	51.9	13.4	14.8
ES	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FI	23.6	19.8	12.6	18.9	26.4	19.9	20.7
FR	14.7	11.2	14.4	13.3	22.8	14.4	15.7
GR	0.0	0.0	5.3	3.0	0.0	2.5	0.9
HU	0.6	0.2	0.7	0.5	7.8	3.8	2.7
IE	4.9	148.6	19.3	27.0	29.2	27.5	15.2
IT	10.3	15.4	21.6	14.8	24.8	15.1	22.9
LT	15.4	0.0	0.0	6.9	29.0	9.6	6.7
LU	27.1	10.7	0.0	14.6	0.0	14.6	10.1
LV	29.2	2.7	0.0	20.5	12.4	19.9	16.9
MT	69.2	114.1	18.8	63.2	117.4	67.7	28.4
NL	41.7	36.4	7.1	29.5	5.3	27.1	21.7
PL	6.9	0.2	0.2	3.2	1.7	3.0	1.7
PT	5.9	2.5	1.7	3.8	3.2	3.7	5.3
RO	20.6	0.0	0.0	7.1	0.0	4.5	6.7
SE	26.1	27.7	38.2	30.1	12.1	27.4	24.0
SI	8.8	18.7	5.2	14.9	81.7	23.0	23.4
SK	4.2	1.9	3.3	3.1	81.1	4.9	7.8
UK	33.1	32.9	33.1	33.0	35.2	33.3	28.0
EU27	10.7	7.3	7.8	8.7	13.9	9.6	9.5
Obj.3	18.7	18.6	11.2	15.5	7.0	15.4	16.7

Source: Applica – Iseri Europa calculations based on DG Regio data