Regional development and EU research policy

Fabienne Corvers*
European Commission, DG Research,
SDME 02/123, B-1049 Brussels, Belgium
E-mail: fabienne.corvers@cec.eu.int
*Corresponding author

Peter Nijkamp
Faculty of Economics and Business Administration,
Free University Amsterdam,
De Boelelaan 1105, NL-1081 HV Amsterdam, The Netherlands
E-mail: pnijkamp@feweb.vu.nl

Abstract: The globalisation of economic life has far-reaching implications for the position of regions in this new world order and hence for any regional development policy. Creating better competitive conditions in order to reduce regional disparities has become an essential element of the current regional development policy. Consequently, an innovation policy has become an essential and intricate part of a regional policy in a modern network society. A closer look at Europe reveals the striking differences in R&D investments among the European regions and cause policy-makers great concern, given the enabling role of R&D in creating innovations and sustaining competitiveness. In order to address this concern, the European Commission has made an attempt to bring two hitherto distinct EU policy areas – regional policy and research policy – together. This paper intends to outline these new ideas, position them from the perspective of modern growth theory and assess the implications for regions and policy-makers.

Keywords: EU regions; regional development; RTD; innovation; RITTS/RIS; community research policy.


Biographical notes: Drs. Fabienne Corvers is Senior Policy Analyst at the Impact Analysis unit of DG Research, European Commission. Before joining the European Commission, she was Research Fellow at Maastricht Economic Research Institute on Innovation and Technology (MERIT). The views expressed in the article are purely those of the author and may not in any circumstances be regarded as stating the official position of the European Commission.

Dr. Peter Nijkamp is Professor in Regional, Urban and Environmental Economics at the Faculty of Economics and Business Administration of the Amsterdam Free University. He is currently Chairman of the prestigious Netherlands Organisation for Scientific Research (NWO), the main research funding agency in the Netherlands.
1 Introduction

Harmonisation of European policy ranks high on the EU agenda. But implementation of policy requires a fine-tuning vis-à-vis national and regional settings. This issue is particularly important as Europe is essentially composed of heterogeneous regions. And with the advent of the Candidate Countries, this feature will become even more prominent. One look at Europe’s regional map reveals, unmistakably, how different Europe’s regions are. What they seem to have in common is their diversity: whether it concerns their economic performance, sectoral specialisation, regional culture, natural endowments, or political decision power, to name a few aspects (Cole and Cole, 1993; Button and Pentecost 1999; Corvers 2001). Yet, the isle of Crete as well as the northern fringe of Scandinavia, the old industrial heart of England as well as high-tech regions, such as Stuttgart and Midi-Pyrénées, all belong to the European Union.

Indeed, one of the main challenges of formulating EU policy has always been to seek out common features and to find compromises amongst the diversities that remain (Button and Pentecost, 1999). That is also why reducing economic disparities between regions, in terms of levels of development, has always been at the heart of European integration. In order to achieve this, it was considered appropriate, if not necessary, to intervene in the spatial distribution of economic performance by means of public policy. Whether these interventions have been a success, has been the subject of many studies (Molle, 1980; Molle and Cappellin, 1988; Armstrong and Taylor, 1993; Bachtler and Turok, 1998; Rodríguez-Pose, 1998; Fagerberg, Guerrieri, and Verspagen, 1999).

Nevertheless, as too much economic divergence has always been considered counter-productive to the ‘overall harmonious development’ of the EU, public policies have been put in place at the Community level to reduce ‘disparities between the levels of development of the various regions and the backwardness of the least favoured regions or islands, including rural areas’. The most well known are the Structural Policies administered by the Regional Policy Directorate-General, and also policies dealing with Research and Technological Development (RTD) administered by the equivalent Directorate-General, which seek to strengthen Europe’s ‘economic and social cohesion’, as there is indeed much evidence on significant spatial disparities in R&D intensity.

A recent strategy paper from the European Commission brings these two hitherto distinct EU policy areas – regional policy and research policy – together. Building on experiences made with regional innovation policy schemes at the Community level in the nineties, this joint Communication presents an outline of a more regionalised RTD policy at the Community level.

The scientific reflection on region-specific development patterns and structures in the EU, in the context of EU-wide RTD policies, is still in its infancy and needs a broader positioning from the perspective of modern growth theory. This article will start with a concise review of current theoretical issues (Section 2). After that, the article will present some regional data measuring R&D intensities in order to raise awareness for the magnitude of regional differences between European regions that underlie economic growth and development (Section 3). In order to understand the ‘new’ Community research policy, this article will not only describe the main features of EU RTD policy, but also the main development stages of Community research and technology policy in general (Sections 4 and 5). It will outline then the main motivations, key factors and related region-specific features of EU technology policy (Section 7). It seeks to explain the driving forces in EU RTD policy towards regional interests and opportunities, taking
regions as stakeholders in EU technology policy. As this idea was preliminary tested in the so-called RITTS/RIS pilot projects during the 1990s, Section 6 will dedicate some attention to the features and the main impact of this Community scheme. The article concludes with some remarks and three messages providing further food for thought (Section 8).

2 Modern regional economic growth theory

In a globalising – or at least an open economic – world, many regions witness an extension of their action radius. Regions tend to become global players in an international market and even more so with the advent and rapid adoption of the ICT sector. Regions are exposed to new ICT inventions, but are also willing to play an active role in this new activity field. One need not believe in the ‘death of distance’ to argue in a plausible way that regions are able to offer a potentially strong position in a global network economy (Castells, 1996). Given the pervasive nature of information technology, regions are faced with the challenge to build competitive ICT strategies in an open world. They have to benefit from efficiency gains accruing from technological innovation and increasing returns related to economies of density and scale (Rivera-Batiz and Romer, 1991).

Regions are only competitive actors, if the process of innovation, production, diffusion and absorption is effectively organised. Failure to be competitive will erode the regional growth potential and will turn the regional economy into a losing one (Slaughter, 1997). High adjustment costs for capital and labour will then pave the road towards economic decline, ‘hollowisation’ and growing unemployment.

Various regions have been successful in understanding the ‘sign of the times’ (for example, Baden-Württemberg, Catalonia, greater London, the Third Italy). The high economic performance of some of the regional forerunners has induced other regions to follow the same strategy, but this has not always been very successful due to the lack or failure to identify a clear ICT market niche. Operating in an open international market presupposes that integration benefits be materialised through returns of scale (Venables, 1995). More openness may bring about a higher average growth rate, but at the same time also a rise in regional disparities (Taylor, 1996). Modern economic growth theory may be helpful in understanding that a trade-off may exist between the average growth rate in an open system and spatial equity (Walz, 1996).

The changing scene in the position of regions in a global economy has had far reaching implications for the regional development policy. Regional policy does not so much only serve to reduce disparities, but more so to create better competitive conditions, because regions are the ‘work floor’ of economic activity. Consequently, innovation policy is becoming an essential and intricate part of regional policy in a modern network society. ‘Schumpeterian’ regional growth initiatives are more favoured than conventional equity initiatives (Nijkamp and Poot, 1988).

In the recent economic growth theory, it is taken for granted that many seemingly autonomous phenomena, such as technological change, institutional embeddedness and network emergence, are essentially the outcome of complex underlying behavioural processes at the micro and meso level (De Groot, 2000). Modern endogenous (or new) economic growth theory has been influenced strongly by the seminal contributions of Lucas (1988) and Romer (1986) who have spurred fundamental research on causes of
economic growth, both locally and globally. Initially, the basic aim was to formulate
dynamic general equilibrium models with precisely formulated microeconomic
foundations that would allow a clearer understanding of evolutionary processes, such as
physical and human capital accumulation, innovation, knowledge accumulation and
diffusion and product differentiation, in terms of their impact on long-run economic
growth. The adjustment of the traditional Solow-Swan growth framework, in which
 technological progress was treated as exogenous, by the incorporation of various
endogenous learning and technology mechanisms (Aghion and Howitt, 1998; Barro and
Sala-i-Martin, 1995) has generated a wealth of literature on endogenous growth and
technological progress since the 1980s. Such new growth theories focus on the economic
spin-off effects related to technological change and R&D, specialisation and trade,
monopoly rents from innovation, Schumpeterian 'creative destruction', human capital
and government policy. Other treatments of the relationship between technology, growth,
and externalities have stressed its disequilibrium, uncertainty and evolutionary
(or Schumpeterian) character (Dosi et al., 1988).

It goes without saying that region-specific RTD development does not come about
automatically, but needs clear and focused policy initiatives. As part of the overall
mission for a balanced and competitive regional development in Europe, the EU has
launched a series of RTD initiatives with the aim to create the seedbed conditions of
regional technological innovation in European regions. Such active public involvement
would increase the overall economic efficiency of regions through scale advantages,
dynamic forerunner effects and long-term reallocation consequences. Clearly, this is not
an easy task, as the specific contribution of innovation to regional development is not
crystal clear at all. Consequently, much policy attention has to be given to enabling
conditions. This issue will be further taken up in the next sections. But first, some
regional data measuring R&D intensities are presented to demonstrate the enormous
disparities in the underlying basic conditions for economic growth and development in
Europe’s regions.

3 Regional differences in R&D: is there a technology gap?

It is well established by now that ‘technological change’ – often shortened to ‘innovation’
– is, next to infrastructure access, among the main determinants of productivity growth.4
‘Productivity is the key to increasing real income and competitiveness and is one of the
most important yardsticks of industrial performance’, to quote a recent OECD report
(OECD, 1999).

What applies for national economies, also applies for regional economies. Innovation
has, in general, become a distinguishing factor separating the economically successful
from the less successful regions. This causes concern with policy-makers given the
striking differences in innovation performance among European regions. Taken as a
proportion of GDP (gross domestic product), gross expenditure on research,
technological development and innovation in Europe’s 25 least-favoured regions is less
than a quarter of the EU average (ITT Newsletter, 2001). Clearly, this is only an input
indicator, but there is due evidence that shows the prominent role of R&D in creating
wealth.

Figure 1 is based on the same indicator of R&D intensity5, showing remarkable
differences in R&D investment between European regions. The Greek archipelago of
island regions Notio Aigaio spends a mere 0.06% of its GDP whereas the German region Braunschweig – home to Volkswagen automotive sector – spends 4.84% of GDP on R&D, far above the EU average of 1.87% of GDP (1997 data; EU average 1998).

Figure 1  Regional R&D expenditure disparities (GERD as a % of GDP) in Europe (1998)

Notes: exceptions to the 1998 reference year for NO: 1999; D, EL, P: 1997; I: 1996; A: 1993. All regional data are at NUTS II level except for the UK which data are at NUTS I level
Source: EUROSTAT

One could draw at least three conclusions from Figure 1. One, the average R&D intensity does not only vary between countries, but also and more profoundly between regions. The ‘technology gap’ between the approximately 200 regions in Europe, therefore, is far greater than the ‘technology gap’ between the fifteen Member States. Of course, some caution is needed here as the data lead to more extreme outcomes with a lower spatial scale. Another reason for being cautious in interpreting Figure 1 is that it might give the (wrong) impression that regions are completely closed systems. Regions, of course, never function like closed systems, not in the least because companies based in the region are linked through functional linkages with the outside world. These in turn create cross-sectoral and cross-regional spillovers, which shape very much the development path of any region. For administrative and statistical reasons, we have, however, decided to demarcate regions.

Two, ‘best’ performing regions in terms of R&D investments as well as ‘worst’ performing regions can be found throughout the European Union. Across Member States, best performing regions seem to share similar characteristics just as worst performing regions do. For example, the German region Weser-Emms invests only 0.39% of its GDP to R&D that is twelve times less than the before-mentioned Braunschweig region, but the same as Extremadura, Spain (0.39%, 1997 data). Regions with low R&D intensity scores show consistently low levels of R&D investment coming from the business sector. This low level of undertaking some form of internal R&D activity results in sub-optimal absorptive capacities that could otherwise enable firms to take advantage of knowledge spill-overs elsewhere in Europe. Given the importance of the business sector for a
region's economic competitiveness, policies can help these companies to develop an 'internal bottom-up learning process' (Antonelli and Calderini, 1999).

Three, not surprisingly, the best performing regions in their home country are often large metropolitan areas as is the case for Comunidad de Madrid in Spain, Lazio around Rome, Vienna in Austria, the greater Lisbon area and Eastern UK south of London. These regions provide firms with a thriving business environment due to economies of scale and scope, a well connected infrastructure (including ICT), a concentration of highly qualified people, high-class universities conducting basic research and a political power centre.

As said above, technological change and innovation are considered to be important factors promoting regional economic growth and development, which incorporates softer aspects such as sustainability, environment, human potential. In the recent strategy paper from the European Commission, also referred to as Commission Communication, is the acknowledgement that not only applied research and technological advancements have distinct regional features, but also basic research and new-to-the-world technologies have a territorial dimension which has been neglected until now.

Before discussing this Communication in detail, a short overview will be given first on how European research and technology policy came into existence. This will also enable the understanding of what is new about the Community's 'new' research policy.

4 The history of community RTD policy in short

It would be fair to say that RTD policy is a fairly young policy area at Community level to get its first official mandates from the Member States some 15 years ago. With the drafting of the Single European Act in 1986, Research and Technological Development became the official responsibility of the European Commission; that was incorporated in the Treaty on European Union five years later. The thirty years preceding the Single European Act, a true European research and technology policy did only exist as a supportive measure 'to improve the overall competitive position of the European industry' focusing mainly on nuclear energy, coal and steel.¹⁰

Since the mid-1960s, the Community's research activities gradually extended to other fields, besides nuclear energy, coal and steel, although the RTD landscape was still mainly dominated by national policies and their focus on creating 'national champions' (Peterson and Sharp, 1998). This started to change in the early 1980s under the inspiring leadership of Commissioner Davignon and proved to be a period of policy transition within the European Community. At the most senior levels of EC policy-making in the 1980s, an active interventionist view was taken towards European high technology industry's competitive enhancement (Lawton, 1999).

This new policy climate was reflected in the Single European Act, which would prove to be a significant landmark in the development of European RTD policy, when it came into force in 1987. The European Single Market initiative promoted greater concern with the competitiveness and productivity of industries and firms when free movement of goods, services, labour and capital was going to take place in the European Union. Research and technological development, and more generally, the capacity to innovate and upgrade, particularly in products and processes, started to gain importance among EU policy-makers as one of the essential factors shaping Europe's competitiveness (CEC, 1993).
With the ratification of the Treaty of Maastricht in 1993, the objective of Community RTD policy became 'the strengthening of the scientific and technological bases of Community industry and encouraging it to become more competitive at the international level, while promoting all the research activities deemed necessary by virtue of other chapters of the Treaty'.

In the early 1990s, the idea grew stronger that Europe had serious problems in converting basic research results into commercial profitable products, despite its strong technological base. The so-called 'European innovation paradox' referring to its innovation deficits was born (Muldur, 2001). Two important strategy papers from the Commission analysing these problems and suggesting solutions should be mentioned here: the White Paper on Growth, Competitiveness and Employment (CEC, 1993) and the Green Paper on Innovation (CEC, 1995).

The 1993 White Paper on 'Growth, Competitiveness and Employment' identified a number of weaknesses from which Europe suffered, including unduly low levels of RTD investment, a lack of coordination at various RTD levels and a comparatively limited capacity to convert scientific breakthroughs and technological achievements into industrial and commercial success. A similar list of weaknesses emerged from the 1995 Green Paper on Innovation. The White Paper identified the need to define a global strategy bringing together the public authorities, research bodies and the various sectors of society concerned, while the Green Paper stressed the importance of the regional level in the formulation and implementation of such a strategy.

Thanks to these policy documents, 'innovation' got a prominent place on the political agenda during the second half of the 1990s, not only at EU level, but also at national and even regional levels of government. Looking at Community RTD policy from an historic point of view, one could say that it has moved from being a minor industrial policy instrument in the 1950s to becoming a research and technology policy in its own right in the 1980s with its own set of instruments – the Framework Programmes are the most well known ones – and an increasing budget over the past 15 years.

5 A new vision on Europe's research policy: building a European research area

At the start of his mandate in 2000, the new Commissioner for Research, Philippe Busquin, launched a new vision on Europe's research policy called the 'European Research Area'. The European Research Area could be considered a new landmark for RTD policy at EU level as it advocates a fundamental reshaping of relationships between 'layers and players' in the RTD landscape.

On March 23–24, 2000, a European Council was held in Lisbon under the Portuguese Presidency and its key strategic objective endorsed by the Member States was set 'to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion'.

Given the significant role played by RTD in generating economic growth, employment and social cohesion, it was agreed in Lisbon that the Union must work towards the objectives set out in the Commission's Communication 'Towards a European Research Area' (CEC, 2000). Research activities at national and Union levels must be
better integrated and coordinated to make them as efficient and innovative as possible, and to ensure that Europe offers attractive prospects to its best brains. The instruments under the Treaty and all other appropriate means, including voluntary arrangements, were to be fully exploited to achieve this objective in a flexible, decentralised and non-bureaucratic manner. At the same time, innovation and ideas should be adequately rewarded within the new knowledge-based economy, particularly through patent protection.

The idea of the European Research Area centres around an institutional reshaping to turn the EU into one ‘European Knowledge System’ – which functions as a true Single Market for research – based on a new rationale for Community action in the area of science and technology and a new form of Commission involvement in the management of European RTD policy.

Similar to the early 1990s, the European Research Area is based on an observation of what is wrong with Europe’s research and how to cure it. This time the main problem seems to be that research in Europe is not only diverse, but also highly fragmented. As Cannell (2001a) describes it, ‘[Europe’s research] operates, for the most part, within national structures, of funding, regulation, and administration. These act in parallel with one another, and with the actions of the Union and other European cooperation frameworks, with very little coordination. The result is a highly sub-optimal overall environment for research, with numerous rigidities, overlaps and duplications.’

The European Research Area intends to promote a more coherent overall policy framework and has – as such – ‘the ambition of re-inventing the European research landscape, in re-defining the roles of each of the players (including public authorities and private operators) and re-configuring the processes and policies that underpin the research effort in Europe’ (Mitsos, 2001).

The major challenge of European Union research policy is therefore not the implementation of research action on the Community’s behalf – which will remain in place through the Framework Programmes for Research and Technological Development –, but the development of greater coherence between national frameworks for action (Cannell, 2001b).

Seeing Europe’s research landscape as a system containing different ‘layers and players’, the European Research Area requires more ‘governance’ instead of more ‘government’. Activating the self-organising elements of this system can be done in various ways. One, until recently neglected, way is to integrate the regional dimension more actively in the European research governance system.

The European Research Area introduces the idea of building upon the potential of the regions and using ‘prime regional movers’ to develop a more dynamic scientific and technological landscape. Although new within the ‘research policy’ context, other Community policy areas already experimented with this idea during the 1990s in the so-called RITTS/RIS projects13.

Was Community regional policy, since its inception in 1975, mainly based on equity arguments - reducing the economic development disparities between Europe’s regions - , Community RTD policy was always based on a different rationale, namely encouraging research excellence to enhance firms’ competitiveness. During the 1980s, however, another rationale started to be heard in regional policy circles, namely that of ‘endogenous development’, helping regions to help themselves. Given the inequalities that existed among regions, including those related to their innovative capacities, the starting point for public intervention should be improving the resource base of the
regions. No longer was infrastructure investments – the ‘neo-classical’ answer to economic imbalances – considered the sole solution. Intangible investments in education, training, research and innovation had to be made if regions were to succeed in taking charge of their own destiny.

During that same period, the Single European Act, later officialised in the Maastricht Treaty, added ‘economic and social cohesion’ as an objective for Community RTD policy. This meant that research and technological development should be regarded not only as an objective in itself, but also as an instrument to achieve other Community policies. Taking the Maastricht Treaty as evidence, regional policy and research policy seemed to be converging, even though it goes without saying that encouraging ‘excellence’ in order to achieve more ‘equity’ is a challenge in its own right. The way Community RTD policy intends to reconcile these two at-first-sight contradictory aims is by opening up possibilities for less developed regions to create better competitive conditions through RTD initiatives. As said earlier, although new within the research policy context, other Community policy areas already experimented with this idea during the 1990s in the so-called RITTS/RIS projects. It is therefore worthwhile to dedicate some attention to these projects.

6 Previous ‘regionalised’ European policy schemes dealing with technology transfer and innovation: the RITTS/RIS scheme

Since 1994, Regional Innovation Strategies (RIS), under the European Regional Development Fund (ERDF), and Regional Innovation and Technology Transfer Strategies (RITTS), under the third activity of the Fourth and Fifth Community RTD Framework Programmes, have served as experimental policy tools for developing innovative capacity in the regions.

Since 1994, more than hundred regions have participated in the RITTS/RIS scheme and positive evaluation results can be shown (CEC, 1997). In 1998, the concept was further developed by the Commission through the RIS+ initiative, aiming to ensure that the work begun under the RITTS/RIS projects moves beyond the strategic framework for action towards a concrete implementation of new measures and projects. Further developments include the Transregional Innovation Projects and the Transnational Innovation Strategy Projects under the Fifth Community RTD Framework Programme, aiming to encourage the transfer of experience from RITTS/RIS regions to partner regions in the accession countries.

The objective of RITTS and RIS projects is to formulate a regional innovation strategy, which identifies the strengths and weaknesses in the innovative capacity of the region, including management, training and organisational issues as well as purely technological ones. The development of such a regional innovation strategy should be the outcome of a process that involved all the regional actors related to RTD, innovation and associated business support activities.

6.1 The two-fold idea behind RITTS and RIS

The main idea behind RITTS and RIS is two-fold:
To improve the capacity of regional actors to formulate regional economic policy that takes into account the real needs of the business sector, particularly small and medium-sized firms, and the strengths and capabilities of the regional RTD and innovation community.

To provide a framework within which both the European Union and the regions can optimise policy decisions regarding future investments in RTD, innovation and technology transfer initiatives at the regional level.

The evaluation of the aforementioned RITTS/RIS scheme showed a number of important results that are encouraging signs to continue both within EU regional policy and within EU research policy in the direction already started. For regional policy that means a continued focus on innovation-led regional development creating conditions that enhance regional competitiveness; for research policy that means treating regions as forces in their own right capable of defining tailor-made regional RTD policies.

The over hundred regions that participated in the RITTS/RIS scheme between 1994 and 2000 differed in terms of economic conditions, population density, political power, financial resources and research and innovation capacity. Despite these differences, all regions shared the view that supply-side problems were not the core problem of their hampering economic development. Most regions in Europe had, due to the decentralisation and devolution processes over the years invested, partly with Structural Fund money, in the creation of science parks, innovation and incubation centres, university-industry liaison offices, technology demonstration centres, technology diffusion networks, public laboratories and universities, training institutes and so on.

The real problem was increasingly considered to be the mismatch between the supply and the demand of the innovation system. Firms, particularly small and medium-sized ones, face a number of weaknesses with respect to innovation, such as finance, human resources, design, marketing, organisation and management issues. The policy actions put in place by local and regional governments over the years had been too long focused on supplying firms with innovation-related services, thereby forgetting to monitor changes in the firms’ needs for these services.

The RITTS/RIS scheme aimed at enhancing the operating efficiency of the regional innovation and technology transfer support infrastructures and policies towards satisfying the firms’ needs, particularly of SMEs. In addition, it examined the efficiency of policies directed at these issues, and the allocation of resources and tasks within the region’s SME support infrastructure directed at innovation, technology diffusion and exploitation. The RITTS/RIS scheme was warmly welcomed by the regions, because they offered them valuable policy-making support; the RITTS/RIS scheme can, therefore, be considered a tool for building ‘policy-making capacities’ in the area of innovation and technology transfer (Corvers, 2003).

Although the extent to which regions managed to develop a strategic innovation policy varies, one could argue that the RITTS/RIS scheme had positive impacts for all regions on the following aspects (Charles et al., 2000; Boekholt, Arnold and Tsipouri, 1998):

It brought in a much-needed move towards strategic thinking for innovation-oriented regional development. Innovation was put on the political agenda and resulted in some regions in a significant increase in public expenditures dedicated to R&D. Other regions, eligible for Structural Fund money, used the scheme to define policy priorities for the Operational Programmes and Single Programming Documents of the Structural Funds.
The ad hoc selection of projects made room for a more systemic appraisal of the region’s strengths and weaknesses and was translated into a ‘vision’ on the region’s future.

It offered mechanisms and incentives to create a dialogue between the regional players. Attempts to bring all regional stakeholders together and work towards a shared view on the region had already been undertaken by several regions, but had always failed, because of the inability to overcome institutional, political, cultural and sometimes even geographical barriers. This scheme offered the possibility to ‘use’ the Commission as the organisation placed above all regional parties demanding of them to work together in this Community co-funded project. Deliverables had to be presented to this organisation in order to obtain funds. As a result, unlikely coalitions become feasible, even desirable. Policy options, non-existing or not spoken out loud earlier, were put on the table and lively discussions followed.

It helped to develop a broader concept for innovation, different from technology transfer, and put this higher on the policy agenda. The RITTS/RIS scheme contributed significantly to establishing a strategic planning culture and helped widening the scope of RTD policies. Other areas linked to RTD and innovation were discussed and incorporated in the innovation strategy process, such as human resource development, finance for innovation projects, firm collaboration, supply chain management, the use of clean technologies and sustainable development.

It supported many regions to clarify the scene of innovation support infrastructure and to develop actions to rationalise, better define and augment the visibility of this infrastructure. With the help of a team of regional, national and even international experts, each RITTS/RIS region had to perform a ‘needs analysis’. Regional firms were interviewed, surveyed, visited, invited to meetings and workshops, all in order to assess their innovation needs. For many regional policy-makers, this confrontation was an eye-opener, but also helped them to redefine innovation structures. In doing so, they came to realise that universal solutions to innovation deficits do not exist. All policy solutions need to be tailored towards the specific characteristics of the regional innovation system and should be, if possible, demand-led instead of supply-push.

7 Building a European research area means involving Europe’s regions

Coming back to the ‘new’ Community RTD policy which gives regions a more prominent place in the European Research Area, one can clearly see that the emphasis on applying a bottom-up and tailor-made approach to research and technological development builds upon the good practices accumulated in the RITTS/RIS scheme.

The idea that ‘local action should start from a shared diagnosis of the territory and the definition of common strategic objectives’ is certainly RITTS/RIS inspired, as is the governance idea of ‘integrating all local players in the regional strategy, including the regional authorities, the private sector, academic and RTD institutions, social partners and civil society’ (CEC, 2001a).

A greater emphasis on regions in EU research policy addresses two main issues. First, increasing regional awareness of national research and innovation policies and tuning them towards the socio-economic needs of the region. Second, directing these policies to build research and innovation capacity in the regions, enhancing their ability to act as drivers for economic and technological development. This may be achieved through (CEC, 2001b):
• Establishing research and innovation strategies to develop material and human resources such as supplying research infrastructures and equipment, local university and training facilities, support structures to foster creation and growth of innovative enterprises, efficient interfaces within the innovation system linking, for example, researchers, innovators and sources of finance, science and technology parks, research programmes, initiatives to attract researchers locally or promote staff exchanges.

• Fostering partnerships between the public and the private sector in order to contribute to the European knowledge-based economy and stimulate knowledge creation and diffusion.

• Promoting an environment conducive to research and innovation, through the introduction of accompanying legal, financial and fiscal conditions that would prove necessary.

• Stimulating experience exchange with other successful regions in specific fields.

• Contributing actively to an integrated strategy for sustainable development.

Streamlining the efforts of regions in an European Research Area mind-set should have two clear objectives, both with a distinct added value for European research and innovation policies. First, to stimulate a better uptake of research results into the local socio-economic fabric (especially vis-à-vis small and medium-sized enterprises) and help translate them faster into economic growth. And second, to increase public and private investment in research and innovation in the regions, thereby stimulating economic and social development.

The Sixth Community RTD Framework Programme (2002–2006) intends to help regions achieve these objectives by enabling them to participate as an independent legal entity in the new funding instruments for Community research, namely Networks of Excellence and Integrated Projects.

Networks of Excellence – to be selected through Call for Proposals – can create better connectivity between central and peripheral hubs of scientific competence, thus offering increased opportunities for collaboration, staff mobility, information and knowledge exchange as well as positive spill-overs to the local and regional economies.

Integrated Projects – to be equally selected through Call for Proposals – will allow regional bodies to cooperate on a trans-national basis around specific scientific and technological objectives, aiming at concrete results.

8 Concluding remarks

With the arrival of Commissioner Busquin, responsible for Research and Technological Development in the European Union, a new direction was given to Community RTD policy at the beginning of the new millennium. Similar to the Single Market for goods, services, persons and capital, one single market for research – one European Research Area – was to be put in place. One European Research Area can contribute to more coherence in the European research landscape and reduce costly duplications of Europe’s research efforts undertaken at various ‘layers’ and by numerous ‘players’.
Regions will play a particularly important role in the creation of a true European Research Area. Their role is two-fold. First of all, building up research and innovation capacities in Europe’s regions will enable them to become better performers which are better equipped to deal with competition forces. An objective that is also promoted by the EU regional policy is helping regions to help themselves through innovation-led regional development. Regional disparities can be reduced if more attention is paid to the RTD base and the innovative capacities of the region, given the fact that the regional growth potential is increasingly shaped by the effective organisation of innovation production, diffusion and absorption.

Second, due to the fact that regions will (have to) go through a learning process in order to become better performers, their ability to identify their RTD needs will be strengthened. Being able to define and voice these needs, these regions can have a constructive interaction with other policy actors at other policy levels demanding more fine-tuning of national (and European!) RTD policies towards the socio-economic needs of the region. By doing so, the self-organising elements of Europe’s Research System are activated bringing greater coherence between the different frameworks for action, creating more synergies and reducing fragmentation of activities and resources.

The implications of giving Europe’s regions a more prominent role in the implementation of Community RTD policy should not be underestimated for at least three reasons:

- In the Communication, the region is seen as an actor in its own right, representing an economic system as well as political system whose forces can be mobilised in such a way that they can make a difference to the region’s development path. An idea which has been around for some time now – both in the academic community as well as with policy-makers – but not all Member States equally subscribe to this in practice, even though the RITTS/RIS scheme shows encouraging results to continue in this direction.

- Another message of the Communication which has been around for some time as well is the idea that ‘technological change’ – in the Schumpeterian definition – is quintessential to economic growth, job creation, renewal of the industrial fabric, competitiveness – also at the regional level. In this respect, it is important to emphasise again that the difference in RTD capacities and performance at national level are far less divergent than those differences measured by the same indicators at regional level. Sophisticating the system of regional RTD indicators and the up-to-dateness of data collection at regional level is paramount to design appropriate RTD policies at regional level.

- In order to arrive at one European Research and Innovation System, an improved system of co-operation between stakeholders is crucial. It is more ‘governance’, not more ‘government’, that matters, bringing together different policy actors – at different policy levels – in different countries – involved in different policy areas – using different policy instruments. Making this system operational will be the true challenge of the European Research Area.
References


Notes

1 With the ratification of the Maastricht Treaty or Treaty on European Union on November 1, 1993, the European Communities entered the next phase of the economic integration process. As both regional policy and research policy fall under the first pillar of the Treaty on European Union and are referred to as ‘Community’ affairs, this article interchangeably uses ‘EU’ and ‘Community’ for these policy areas.

2 Constitution Treaty article III-220 (ex-article 158 of the Treaty on European Union).

3 Although there exists no conceptual difference between RTD and R&D, in this paper ‘RTD’ will be used when referring to policy intervention supporting the undertaking of research and development activities – whereby RTD policy is sometimes shortened to research policy – and ‘R&D’ when referring to indicators measuring research and development activities in line with the Frascati definition as ‘creative work undertaken on a systematic basis in order to increase the stock of knowledge, (…), and the use of this stock of knowledge to devise new applications’ (OECD, 2002, Frascati Manual, Proposed Standard Practice for Surveys on Research and Experimental Development. Paris: OECD, page 30).


- Invention, encompassing the generation of new ideas.
- Innovation, encompassing the development of new ideas into marketable products and processes.
- Diffusion, when the new products and processes spread across the potential market and the impact of new technology happens. Besides the Schumpeterian description of innovation as one of the three stages making up technological change, innovation is often widely used as synonym for the whole process of technological change (Stoneman 1995:3). New insights based on real life changes underlying economic dynamics have broadened the concept of ‘innovation’ to incorporate not only ‘technological’ novelties defined by the Oslo Manual as ‘technologically new and/or improved products and/or processes’ (OECD/EUROSTAT, 1997, Oslo Manual. Proposed Guidelines for Collecting and Interpreting Technological Innovation Data. Paris: OECD, page 47) found in the manufacturing sector, but also ‘organisational’ novelties as evidenced by the service sector including new ways of distribution and marketing, e.g. banks (new ways of banking via phone and internet) and insurance companies (new combination of existing insurance products). One could, therefore, define ‘innovation’ as any new mode of production, distribution, marketing or organisation, while ‘technological change’ refers more narrowly to the hardware of the economic process.

5 R&D intensity is defined as ‘gross expenditure on research and development [= GERD] measured as a % of GDP [= Gross Domestic Product]’. GERD can be subdivided in BERD [= business enterprise expenditure on research and development], GOVERD [= government expenditure on research and development], HERD [= higher education expenditure on research and development] and OTHER [= for example, expenditure on research and development from abroad].

6 The ‘technology gap’ refers to the disparities in R&D spending, relative to GDP between countries or regions. The technological disparities between Europe’s regions are far greater than their economic or wealth disparities. Moreover, instead of convergence at the regional level, some authors argue that one can observe divergence – an increasing gap between technologically advanced regions and less technologically advanced ones. For those interested in the ‘convergence versus divergence’ debate, a good starting point might be The Economic Challenge for Europe: Adapting to Innovation Based Growth by Jan Fagerberg, Paolo Guerrieri and Bart Verspagen, published in 1999 by Edward Elgar.
7 Based on the ‘Nomenclature d’Unités Territoriales Statistiques’ (NUTS) classification of EUROSTAT. The NUTS classification – translated into English as ‘nomenclature of territorial units for statistics’ – was established by EUROSTAT to provide a uniform and consistent breakdown of territorial units for the production of regional statistics for the European Union. NUTS subdivides the 15 Member State into 78 regions at NUTS I level, 211 regions at NUTS II and 1093 regions at NUTS III.

8 By presenting the minimum and maximum values of R&D intensity per country, Figure 1 makes immediately clear that the differences in R&D intensity between Europe’s Member States originates from the even larger differences between Europe’s regions. Given the limited data available, it was not possible to test the (statistical) significance of this hypothesis, for example, by means of the statistical modelling technique (M)ANOVA, which could have identified intertemporal patterns as well. What is interesting about Figure 1, though, is that it indicates significance at some level and the necessity for some form of policy intervention to reduce this ‘technology’ gap by upgrading the ‘lagging’ regions in Europe.


10 Treaty of Rome article 3.


13 More information can be downloaded from http://www.innovating-regions.org.