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Regional Innovation Monitor - 2012

Credible Actions Key to Regions' Future Innovation Performance

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To the European Commission
Enterprise and Industry Directorate-General
Directorate D – Industrial Innovation and Mobility Industries

Regional Innovation Monitor

Credible Actions Key to Regions' Future Innovation Performance

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Executive summary

Building upon the findings of the first two Regional Innovation Monitor (RIM)[1] Annual Reports, this report pursues the three following objectives. Firstly, it aims to perform further analysis of innovation policies across EU regions, in order to establish a better understanding about the focus and changes in policy priorities that took place over the course of last three years. Secondly, it is an attempt to incorporate the results of the recently published Regional Innovation Scoreboard 2012 (RIS)[2] with a view to make a qualitative assessment of innovation policies and innovation performance. Thirdly, on the basis of concrete examples of regions the report will provide an account of benefits which have arisen as a result of improved practices beyond the launch of additional support measures.

To show the broad diversity found among European regions and ensure the continuity of previous analysis, the report will be structured in three sections addressing specific regional innovation characteristics and policy responses in differentiation for three main groups of regions:

- World-class performers (Section 1);
- Regions with strong focus on industrial employment (Section 2); and
- Regions with a focus on the service sector and public R&D (Section 3).

The classification has been developed based on the regional distribution of employment and R&D expenditure.

Figure: Regions in the RIM repository classified as 'world-class performers'

Source: UNU-MERIT.

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[1] http://www.rim-europa.eu
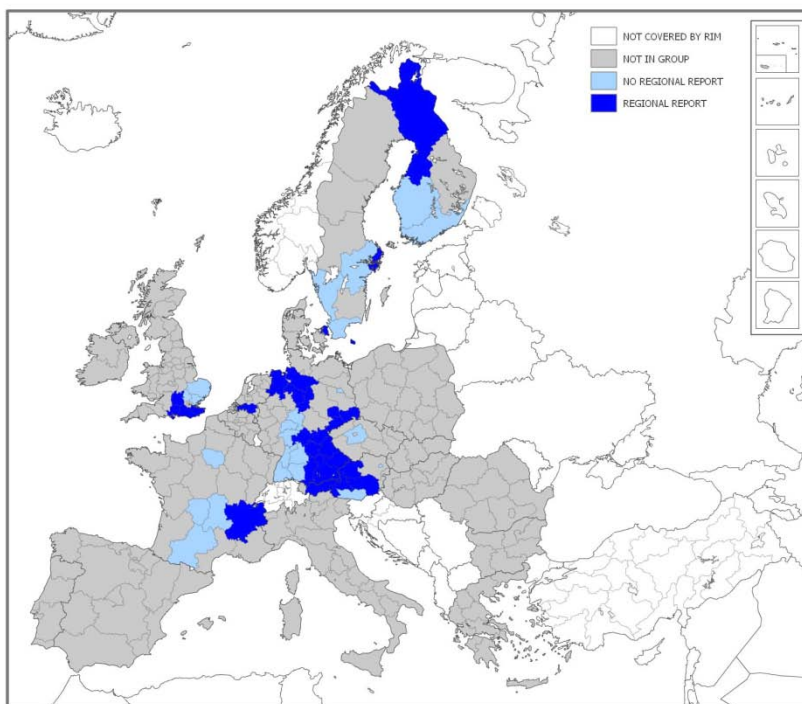
[2] http://ec.europa.eu/enterprise/policies/innovation/files/ris-2012_en.pdf

The group of **'world-class performers'** includes regions with a regional GERD per GDP that exceeds 2.3% and a regional BERD that is above 1.3% of local GDP. Altogether, somewhat more than 10% of the regions covered in the RIM repository fall into this category.

Figure: Regions in the RIM repository classified as 'regions with strong focus on industrial employment, business and, or public R&D'
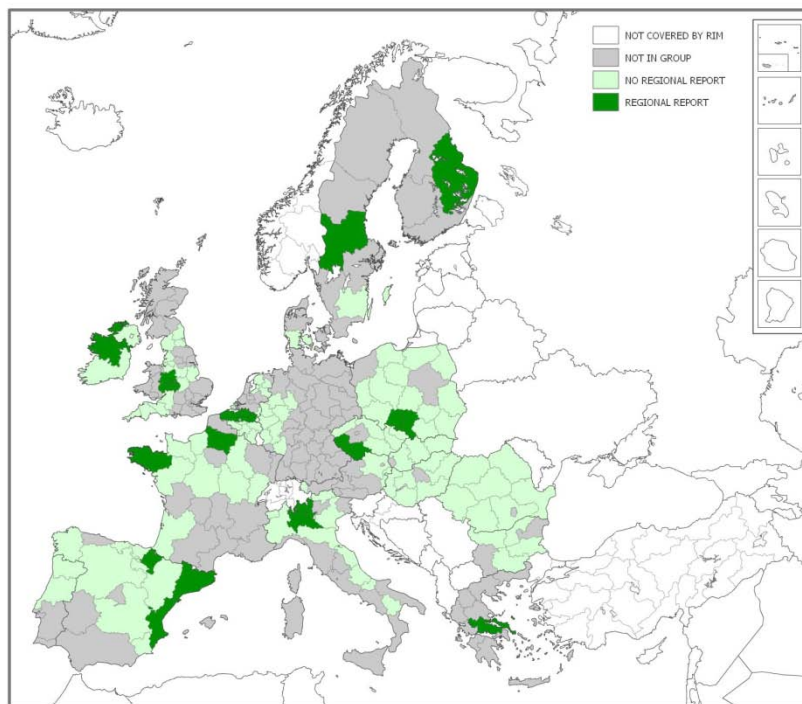
Source: UNU-MERIT.

Regions in which the industrial employment's share in total employment is higher than 45% are labelled as **'regions with strong focus on industrial employment, business and, or public R&D'.** In detail, it subsumes the two sub-groups of innovative-business-oriented regions in which the share of business R&D expenditure in GERD is 63% or above and that of manufacturing-, yet public-research-oriented regions in which a high employment share in manufacturing goes along with relatively low business expenditures on R&D.

Figure: Regions in the RIM repository classified as 'regions with a focus on the service sector and public R&D'
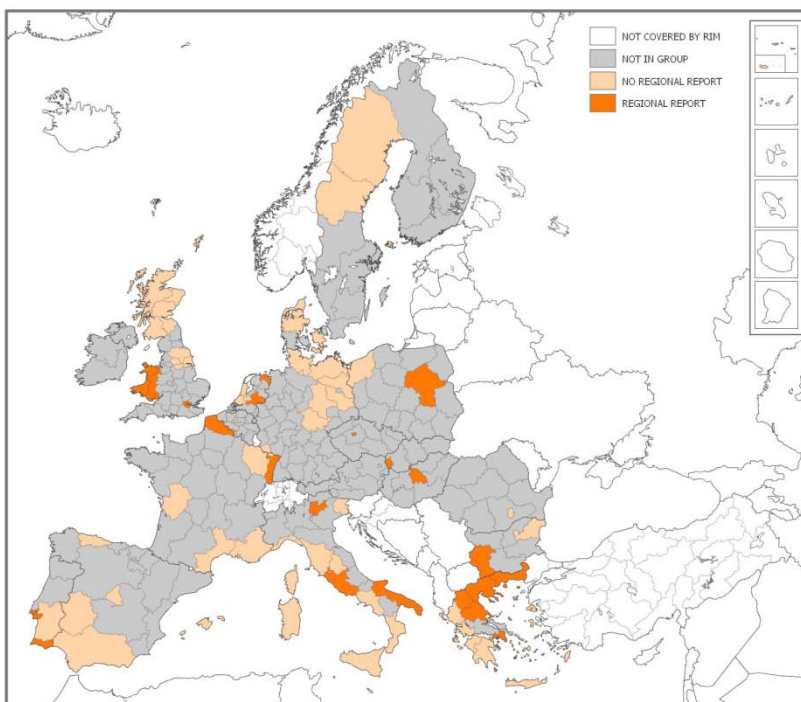
Source: UNU-MERIT.

The group of regions classified **as 'regions with a focus on the service sector and public R&D'** covers regions in which the share of public R&D investments in total R&D is higher than 45%, or where the share of employment in the service sector is higher than 75%.

If the RIM 2011 typology is cross-tabulated with the typology of the 2012 RIS, the classification of the regions belonging to the RIM 2011 typology's the main groups can be further differentiated as follows.

Table: Classification of regions according to the Regional Innovation Monitor and Regional Innovation Scoreboard

Regional Innovation Monitor	Regional Innovation Scoreboard				
	Leader	Follower	Moderate	Modest	Number of regions
World-class performers	21 (55.3%)	6 (9.7%)	0 (-)	0 (-)	27
Regions with strong focus on industrial employment	6 (15.8%)	31 (50%)	26 (63.4%)	38 (65.5%)	101
Regions with a focus on the service sector and public R&D	11 (28.9%)	25 (40.3%)	15 (36.6%)	20 (34.5%)	71

Source: Own figure based on the 2011 Regional Innovation Monitor and 2012 Regional Innovation Scoreboard classifications.

In the group of 'world-class performers' the majority of regions are innovation leaders which is not surprising given their high level of investment in R&D. Altogether, those 21 regions represent more than one half of all innovation leaders. In contrast, only six regions with strong focus on industrial employment are innovation leaders. The remaining regions with a focus on industrial employment are mostly modest-, moderate innovators and innovation followers. In regions with a focus on the service sector and/or public R&D, the distribution across the three RIS 2012 groups is very similar to that of regions with strong focus on industrial employment. There is, however, a distinctive characteristic in that nearly one third of all innovation leaders are regions with a focus on the service sector and/or public R&D, while only 15% are region with a focus on industrial employment. Appendix A contains a detailed list of regions per category.

Coming back to findings emerging from previous analyses, the first RIM Annual Report highlighted **high popularity of cluster policies** and noted that some regions were supporting so many clusters that no clear focus of prioritisation could be identified. Particularly, it strongly argued that while the regional process of strategy development would have to remain inclusive, **regional innovation policy would no longer be able to avoid a clearer definition of priorities in the allocation of funding**. It was also underlined that **policies remained heavily focused on supply-side and there was limited implementation of policies for innovation in services and public sector innovation.**

Moreover, **the analysis of policy challenges and policy options made it possible to question preferences for certain types of policies in specific group of regions.** For example, it put a spotlight on how surprisingly little attention was paid to 'Policy Making Support' in regions located in Eastern Europe and Southern Italy while, to the contrary, many of these regions displayed strong preferences for 'Research Supply Policies'. Given the existing challenges in many capital regions such as Madrid, Rome, London, Berlin, Prague and Bucharest, but also regions in Eastern Germany Scotland and Southern Europe the report underlined the need to increase the implementation of 'Demand – and Service Innovation' policies. It also noted that 'Policy Making Support' should be of higher importance in those regions than it current seems to be. Furthermore, it viewed it as appropriate to link low-tech SMEs networks to scientific institutes in Greek and Portuguese regions, to increase the implementation of policies regarding 'Human Resources, Creation & Growth of Innovators" in industrialised innovating regions, and 'Research Supply' in high-tech business innovating regions which are located in the South of Germany, Finland, Sweden, and some places England and the Netherlands.

With regard to the relevance of Structural Fund interventions, it found that for slightly less than a half of the covered regions the relevance was evaluated as high and very high while for another third it was assessed as very low and low. Based on the analysis, it concluded that **there was a need to further improve strategic use of the Structural Fund interventions.**

Last year's second RIM Annual Report noted that in the group of 'world-class performing regions' (see the RIM 2011 typology above), policy interventions were strategically thought through, followed a clear political mission, and were in general positively assessed. In contrast, it found that in regions with a strong focus on industrial employment less importance was assigned to measures regarding human resources, markets and innovation culture. It stated, however, that the lack of focus of regional innovation support measures on human resources should not be interpreted as suggesting that policies in this area are completely neglected. In different regions, the responsibility over this policy area belongs to different governance level which partly can be an explanation of this situation. For the public R&D-intensive and service-oriented regions, it was recommended that attention should be paid to support innovation in services, which offer immense opportunities for growth, and jobs in this group of regions.

One of the emerging findings of the previous RIM Annual Reports was that **some policy preferences in specific groups of regions could be questioned and their relevance needed further reconsideration.** With a view to the preparation of smart specialisation strategies, regions will not only have to establish higher degree of prioritisation of their policies, but also continue their efforts in designing and implementing more tailored-made policies in responses to region-specific challenges.

Furthermore, it should be noted that regional innovation policies have to be effective and capable of supporting or – in the best case – initiating structural changes in regional innovation systems. The availability of robust evidence-based assessment of results and impacts, however, leaves certainly room for improvement. The last year's RIM Annual Report found that out of 1,052 support measures, evidence of an impact of the measure based on verifiable indicators or an evaluation (e.g. sales generated from new products, jobs created, etc.) was only found in 91 cases (8.7%), while intended targets in terms of results (e.g. number of enterprises investing in innovative projects, people trained) were achieved in 117 support measures (11.1%). In the remaining cases, it was either too early to judge the success of the measure (e.g. results of first call for proposals still not known) or there was positive response by beneficiaries to the measure (e.g. over-subscribed in terms of requested versus available budget) but it was too early to judge results or impact.

It will be therefore of crucial importance for the programming of future programmes to draw lessons from the past implementation of innovation policies. **To put it simply, the design of smart specialisation policies requires objective and independent assessments of what actually worked, what did not, as well as of factors which played a role and contributed to one situation or another. Without this, even more focused and more tailored policies will suffer from an inherent lack of relatedness to the actual challenges that regions are facing.** Subsequently, there is a risk that future instruments may not be able to deliver the expected results and make EU regions more innovative.

Main findings by regional groups

World-class performing regions (Group 1)

- GDP per capita in most world-class performing regions varies between €25,000 and €35,000 in capital regions up to €50,000. As a tendency, it has decreased as a result of the economic crisis, although not on all accounts substantially. Other than in many other places, not all world-class performing regions' industrial sectors were severely affected by the economic downturn. Regional unemployment rates correlate with the developments in the respective national economies. In this group, the job-loss effects of economic crisis were most strongly felt in regions of the Czech Republic, the United Kingdom, the Netherlands and Denmark. Sweden, Finland, France, Austria and Germany, in contrast, are faring better.

- In terms of regional innovative performance, the ranking of most world-class performing regions in the RIS typology continues to display a positive picture. Since 2007, most of them have been and remain assigned to the group of "leaders", complemented by a few "followers". While hardly any region has been left fully unaffected in terms of industrial layoffs, setbacks in GDP per capita and rising unemployment, few negative changes can be identified with a view to innovation performance.

- From 2002 to 2009, the group of 27 world-class performing regions has invested a total of more than €840bn into R&D. Of those expenditures, more than €600bn, or above 70%, were made by the private business sector while only about €240bn, or below 30%, were contributed by the public sector.

- In the group of world-class performing regions, the majority of policy support measures focused on research and technologies and support for enterprises. Many of the support measures aim at 'Research and Technologies' are high volume

programmes while most of the support measures supporting local enterprises are low volume. Moreover, a large share of total budget (46.0%) is bundled in measures documented as 'Horizontal Research and Innovation Policies' (Priority 1).

- Well-performing regions do not invest substantially in basic subsidies for their already well-performing business sectors, although they provide assistance to low-budget network and cluster policies to support local business dynamics. Instead, they more often tend to invest in measures related to the build up and extension of existing or new public research capacities complementary to the strengths of the local enterprise sector. In addition, we find a pattern in forms of support that seems to indicate that many world-class performing regions have indeed implemented a policy mix that is comparatively well-adapted to their innovative potential and well-suited to improve their economic situation in the long run.

- Policy makers in world-class performing regions can and rightly do rely on existing structures and dynamics when deciding about the allocation of additional public funding. Hence, they have to structure policy measures in such a way that they add to the existing momentum of the private sector and trigger the development of novel forms of and approaches to science-industry co-operation.

- Support organisations operating in world-class regions are highly professionalised and that there typically is a well developed division of labour in regional innovation policy. Most support organisations display sufficient capacities in terms of manpower, expertise, and sector specific knowledge as well as a strong network-based orientation towards the needs of the regional enterprises.

- Policy makers in world-class performing regions can often draw on a vibrant community of stakeholders with an intrinsic interest to express its needs. In many cases, independent grassroots initiatives will already have been developed. Hence, a central challenge to policy making in world-class performing regions is to keep and build upon the existing momentum.

- On the one hand, there are well-established processes of stakeholder consultation in many world-class performing regions. On the other hand, most examples place a strong caveat with regard to the question whether these can be 'engineered'. As is natural in democracies, it remains difficult to take central decisions on 'specialisation' without friction. It needs to be acknowledged that good debates on specialisation are dynamic, open and without pre-specified result.

- Good evaluation and valid monitoring are common practice in many world-class performing regions although there still is room for improvement. In many cases, in-depth external evaluations as well as complex monitoring are politically wanted even though they come at a certain financial cost. Mostly, suitable national consultants with both a credible commitment to independent analysis and a good knowledge of the region in question are available.

Regions with strong focus on industrial employment, business and, or public R&D (Group 2)

- The socio-economic performance varied widely in regions with a strong focus on industrial employment. There were 37 (out of 101) regions belonging to this group which accounted for GDP per capita higher than the EU average (€23,500) in 2009. On the other hand, Spanish and Greek regions are among those most affected by high unemployment. With regard to innovation performance, regions in this group are characterised by structurally low public-, and private investment. According to the RIS 2012 composite indicator capturing regional innovation performance, this group subsumes four types of regions: 6 leaders, 31 followers, 26 moderate, and 38 modest.

- According to our findings, there is a positive relationship between private R&D funding and socio-economic performance, even though there are other non-R&D factors which may be equally important. Regions with a strong focus on industrial

employment do not necessarily account for higher GDP per capita only because of substantial R&D investment. There is a number of regions, such as Southern Denmark, the Aosta Valley (IT), Middle Norrland (ES), Marche (IT), and South Tyrol (IT) which prove this point. The existing evidence also suggests that even regions with high private R&D investment are not always remarkably resilient to economic downturns and problems of high unemployment. It is also important to note that regions which are already making considerable R&D investments are likely to achieve better socio-economic results than those regions with spectacular upward trends, but a level of R&D investment still far below the critical mass to have substantial positive effects on growth and jobs.

- With a view to the changes that have taken place in the course of the last three years (since 2010), the re-design and launch of new cluster framework policies is one of the most important trends. Increasingly more attention has been also given to measures in support of research organisations, science-industry cooperation, and measures in support of business R&D, support to innovation and entrepreneurship programmes, start-ups, and access to finance. In relation to last year's RIM Annual Report, it is important to note that an increase in budget allocations to Priority 2 ('Research and Technologies') has taken place.

- The assessment of regional innovation policies reveals some aspects which deserve to be positively assessed. One of the most positive aspects that can be observed is that support for entrepreneurship is on average the most representative form of support in the group of industrial regions. A less favourable picture, in contrast, emerges regarding the general absence of measures supporting public-private partnerships and international cooperation, in addition to an overly high priority given to universities and a lack of attention in the area of improving the skills for education. Consequently, there is a threat that support will remain concentrated on the supply-side policies.

- The low effectiveness of innovation support measures in the group of industrial regions continues to be an issue of concern that should be tackled during the forthcoming 2014-2020 programming period. The RIM repository data suggests that only 16.4% of the support measures launched in this group of regions, i.e. 91 out of 555 support measures, have either achieved their intended targets in terms of results or had a verifiable impact.

- The evidence of credible actions can be traced back in specific regions. Rather than trying only to emulate the skilful performers, the main challenge for regions in the group of industrial regions is primarily to establish a better understanding of what worked well, what did not, and the main reasons behind. So far, the availability of robust evidence-based assessments leaves room for improvement. In parallel, the work on exploring in more detail credible actions should be carried out, precisely because of potential benefits that could arise as a result of well-though through policy actions and relevant practices beyond policy support measures as presented in this report.

Regions with a focus on the service sector and public R&D (Group 3)

- Among the 71 regions in this group regional GDP per capita as well as unemployment varied widely. Classifying the regions in this group according to the four innovation performance groups: leading regions (11), followers (25), moderate (15), and modest (20), shows that also in terms of innovation the performance varies considerably among 'service/science' regions. Almost half of the regions have improved their innovation performance, e.g. by moving from leader-low to leader-medium.

- BERD (2009) as a % of GDP in 'services & science' regions is with 0.61%, way below the EU27 average of 1.24% of GDP. Public R&D investment for 'services & science' regions accounted for 0.77% of GDP, while the EU27 average is 0.75%. So, the regions in this group are on average not very R&D intensive, and public R&D is often the main type of R&D.

- However, total R&D investment for this group increased with €14.2bn or 37% to €52.5bn. The strongest increase was for investments made by the business sector (+47%), which shows that this group is successfully improving its main weakness in private R&D expenditure and has improved the imbalance concerning public-private R&D.

- The majority of support measures for the group of regions with a focus on the service sector or public R&D, are in the priority areas Priority 2 ('Research and Technologies'), and Priority 4 ('Enterprises'). Also in terms of budget the Priority 2 'Research and Technologies' is still the main priority (44% of the budget). Since business-R&D is in general a relative weakness of the regions in this group, and public R&D a relative strength, it makes sense that policies oriented towards innovation in enterprises is receiving a high (37% of budget) and even increased attention.

- The "leaders" and "followers" in the third group have spent the largest share of their budget in Priority 1 ('Governance & horizontal'). For the moderate innovators in this group Priority 4 ('Enterprises') has the largest budget share. For the modest innovators Priority 2 ('Research and Technologies') is the dominant budget category within their policy-mix.

- Relatively large attention for policies addressing applied business research (compared to regions of the other groups), makes sense because it is a relative weakness of this group of regions with a focus on services and public R&D. Among the more frequently implemented regional policies there are a few that receive relatively less attention in 'science & services' regions, compared to the two other groups of regions, such as cluster policy and entrepreneurship policy. Cluster policy (especially in the traditional approach) may be less relevant for service industries, but there is no good explanation why entrepreneurship policies would be less relevant for service industries. Gazelles policies, which are relevant for service industries as well, get relatively more than average attention.

- Although, SME policies are the most important category, the score is way behind the attentions for this policy in the world-class performing regions. Science-industry cooperation policies are the second most important, and this relates to the most important challenge for 'services/science' regions. Promoting science-industry cooperation is the preferred mode to exploit their relative strength in public R&D, but in world-class performing regions it gets even more attention at regional level. Surprisingly, other policies which aim to exploit public R&D such as knowledge transfer and start-up/spin-off policies have a lower popularity in 'science & services' regions than on average for regions in Europe. The below average attention for regional policies addressing universities and research infrastructure seems reasonable, since this is already an existing strength in 'science & services' regions.

General policy messages

- Although there are multiple non-policy factors that play an important role in explaining the innovation performance of regions, effective policies can make an important difference with a view to a region's development. While not every measure will make a substantial difference on its own, the RIM repository and reports confirm that inaction is a non-favourable option. Furthermore, the RIM repository documents that dynamic development goes along with good policy practice, i.e. measures with favourable assessment. While in innovation leaders we find 26% of measures, which achieved their intended targets in terms of results or had an impact of the measure based on verifiable indicators, 22% can be identified in innovation followers, 15% in moderate, and 9% in modest innovators. Consequently, it remains advisable to closely monitor policy trends and improve the availability of robust evidence-based assessments.

- There are no simple solutions to complex issues. On the one hand, the above suggests that lagging regions should study the practices of those which have already put effective policies in place. On the other hand, this should not be done without studying the regional preconditions beforehand. As highlighted in the first Annual Report, it is necessary to develop and implement a balanced policy mix and to avoid indiscriminately following 'common practices'. One of the current issues of concern in this regard is the increasing attention focused on financial instruments in lagging regions. As there is no evidence that this form of support is in itself more effective than others, lessons learnt from past experiences with e.g. rolling out (too many) cluster policies should at this time be taken into account. While there is definitely a need for policy learning with regard to many measures, this learning should include an improved understanding of their prerequisites, such as for example governance aspects.

- In regions with competences in the area of higher education policies one would expect to identify policy actions in support of the attraction of research personnel at universities, the transfer of skilled graduates to local firms as well as skills development on the job through training programmes. In practice, this proves not always to be the case. Arguably, there are several reasons for this situation. Firstly, support for higher education (and thus 'improving skills for innovation') is many cases provided through institutional funding and not through dedicated programmes. Secondly, the RIM repository focuses on the six most important R&D measures per region, which may have resulted in an omission of some measures in the less obviously R&D related field of education and human capital. Nonetheless, support for improving skills for innovation will have to be a priority in many regions – especially in the lagging ones. In fact, good human capital policies are one of the most central preconditions to make many other policies work. Regional innovation policies and (higher) education policies are thus also natural issues to coordinate at the EC level.

- Finally, a more responsive approach to governance will be required, to lead, coordinate and implement systemic changes through regional innovation policies. In many regions, stakeholders are willing to participate in both process of strategy design and in individual support initiatives. This process will not come without a certain degree of friction and require a certain degree of political leadership. Nonetheless, the RIM repository and reports suggest that the involvement of existing grass-roots measures and or networks of actors will in many cases prove a very fertile ground for policy to build upon. Beyond providing framework conditions and infrastructure, responsive regional innovation policy should aim to play the role of a catalyst rather than one of a creator.

1. World-class performers

1.1 Main characteristics of the Regional Innovation System

1.1.1 General characteristics

GDP per capita in most world-class performing regions varies between €25,000 and €35,000 outside of the capital regions, whereas in all capital regions but Berlin it ranges between €40,000 and €50,000, not least as in most countries but Germany corporate headquarters tend to be concentrated in these regions. A notable exception from the rule is Central Bohemia (CZ) where GDP per capita accounted for only €12,100, due to the overall characteristics of the Czech national economy.

For public **R&D expenditure per GDP**, no specific threshold was set since regions were classified world-class as long as they reached an overall level of R&D expenditure per GDP of at least 2.3%. Consequently, very different levels were reached from 0.27% in Central Bohemia (CZ) and Kärnten (AT) up to 1.74% in Vienna and 2.17% in Berlin. With slight differences between nations, the results indicate that the typical level of public expenditure on R&D in world-class performing regions fluctuates around 1% of GDP. In most capital regions, however, the ratio is higher, often around 2%, due to a concentration of universities and national public research organisations.

Since the selection criteria for the group of world-class performing regions clearly foresee a **Business Expenditure on R&D** per GDP ratio of at least 1.3%, all regions exceed this threshold. Further, 20 out of 28 regions surpass the 2% level while seven reach and/or exceed the 3% target. An exception is constituted by Northern Finland, where BERD reach more than 5% of GDP. Likely, this is due to a specific combination of the Finnish knowledge economy and the relatively limited size of the regional economy of Northern Finland and Lapland.

1.1.2 The short-term perspective, resilience to economic crisis

As a tendency, **GDP per capita in world-class performing regions** has decreased from 2008 as result of the financial and economic crisis, even though not on all accounts substantially. While world-class regions suffered from moderate decreases around 5-10%, a particularly hard impact has been felt in Sweden outside Stockholm, the United Kingdom as well as Northern Finland.

Other than many other places, not all world-class performing regions industrial sectors were severely affected by the crisis. In total, about 0.4m **industrial jobs were lost**. In general terms, the resilience and performance of the regions depends notably on the national economies that they are part of. In Austria, for example, all regions displayed a moderately positive development with 2008-2011 growth rates between 1.2% and 5.7% whereas the growth rates in all Danish, Finnish, French, Dutch, English and Czech regions were unanimously negative, typically with industrial job losses between 10% and 15%. In German regions, the overall picture was one of near stagnation with either limited positive or negative growth between +0.6% and 4.1%. In Sweden, finally, some regions realise growth above 5% while others have lost more than 15% of their industrial employment. Interestingly, the high-tech regions of Denmark (Copenhagen) and Finland display the most severe job losses, whereas more broadly structured regional economies based on more traditional – or at least diverse – industries (Austria, Germany) seem, as a tendency, to have fared better. Notable exceptions are constituted by high-tech oriented Stockholm (+6.3%) and more traditionally aligned Central Bohemia (CZ) (-10.0%).

As much as industrial job losses, regional **unemployment rates** strongly correlate with the developments in the respective national economies. Most strongly, the crisis seems to be felt in the Czech Republic, parts of the United Kingdom, the Netherlands and, notably, the capital region of Denmark (all near doubling their unemployment rates, although the absolute level mostly remains moderate, i.e. below 10%). Sweden,

Finland and France have felt a notable impact (+20-30%) but, for the moment, seem to be handling it well, although their structural unemployment rates are somewhat higher with about 8-9% on average. Austrian regions were able to maintain their very low levels of unemployment (around 3%) and have only seen very moderate increases in unemployment. German regions, finally, provides a story set apart from the rest with substantially decreasing rates (between 10-40%), although structural unemployment remains high in some areas.

In terms of regional innovative performance, the ranking of most world-class performing regions in the Regional Innovation Scoreboard typology sketches a positive picture. Since 2007, most of them been and remain assigned to the RIS group of "leaders" (21 regions), complemented by a few "followers" (6 regions).

- Among the world-class performing regions eight fall into the category **"leader – high"** and were already assigned to that category in the 2007 and 2009 studies, among them the leading German, Swedish regions as well as the Danish capital; One further German region, Hessen, has actually improved its RIS ranking from "leader – medium" in 2007 and 2009 to "leader – high" in 2011.

- Among the nine regions categorised **"leader – medium"**, three have maintained the status, one Swedish region, Western Sweden, has dropped down from "leader – high", whereas a number of Dutch, French and Finnish regions have caught up from "leader – low"; One German region, Lower Saxony, has caught up systematically from "follower – high" in 2007 to "leader – medium" in 2009.

- Among the four regions categorised as **"leader – low"**, Saxony has maintained its position while the two regions located in the larger 'Centre-Est' region of France (Rhône-Alpes, Auvergne) seem to have caught up systematically from their 2007 "follower - low" status.

- Among the regions identified as belonging to the **"follower – high"** group, the two Austrian regions located in Southern Austria (Kärnten, Styria) seem to have maintained their position while Central Bohemia (CZ) and Midi-Pyrenées located in the South-West of France have caught up from "follower – low" status.

- Upper Austria and Tyrol in Western Austria, to the contrary, has dropped from "follower – high" to "follower – low" status in the wake of the economic crisis between 2009 and 2011.

While – with the exception of most of Germany and parts of Austria – hardly any region has been left fully unaffected in terms of industrial layoffs, setbacks in GDP per capita and rising unemployment few notable changes can be identified with a view to the RIS typology. Those that can be found, moreover, are not fully in line with the general economic trends. While resilience and catch-up can be documented for the booming German and most Austrian regions it also extends to a number of regions in economically less fortunate countries, notably in Finland, France, and the Czech Republic.

In summary, our findings illustrate that, in line with the respective national patterns, many of Europe's world-class performing regions have dealt the recent economic challenges fairly well – with a view to both direct economic impact and their apparent ability to retain a pronounced innovation orientation.

1.1.3 The long-term perspective, investment and development

From 2002 to 2009, the group of 28 world-class performing regions has invested a total of more than €840bn into R&D. Of those expenditures, more than €600bn, or above 70%, were made by the private business sector while only about €240bn, or below 30% were contributed by the public sector.

In general, expenditure for R&D in world-class performing regions has notably increased in the course of the last decade, as only €400bn of the total of €840bn were spent in the 2002-2005 period, while €440bn Euro were spent in the 2006-2009

period. Even when correcting for an average inflation of 2% this still amounts to an effective rise in spending of about 10%.

Interestingly, the structural rise in R&D spending that is observed in world-class performing regions has been distributed more or less evenly between the two main areas of private (around €290bn to above €320bn) and public investment (around €100bn to above €120bn). While there is a slight tendency towards a somewhat higher increase in public spending, the overall ratio between different types of spending could be preserved.

With a view to the relation of economic development and R&D investment, it has to be finally acknowledged that there is no direct, general correlation between a region's increase of GDP per capita between the 2002-2005 period and the period following the reaffirmation of the Lisbon agenda from 2006-2009 with the increase R&D spending between the same periods. Apparently, many other socio-economic factors – not least the recent financial and economic crisis – come to play. In general, GDP per capita has increased less than R&D spending (unweighted average of 107% to 116% for R&D investment).

In summary, we find that **R&D investment continues to constitute a key pillar of economic activity in world-class performing regions. Even though it does evidently not stand in a direct statistical relation to the development of GDP per capita it provides one of the most relevant ground-laying foundations of these regions' sustained global competitiveness.**

That the local business sectors have continuously and significantly increased their already high investments in R&D throughout the last decade seems clear evidence of the fact that R&D orientation appears to be constitutive to most of the business models pursued in world-class performing regions. Many of the regional public sectors, to the contrary, play a complementary role which, however, has been extended accordingly.

Evidently, a mix of about two thirds private and one third public investments into regional R&D is the most commonly found distribution among the observed regions – and one that has proven viable and profitable in the course of the last decade.

1.2 Regional innovation policy mix

1.2.1 Helicopter view of policy focus

In the group of world-class performing regions, the majority of support measures appears to be implemented in the two main priority areas Priority 2 ('Research and Technologies', 70 measures) and Priority 4 ('Enterprises', 54 measures), with Priority 1 ('Governance & Horizontal Research and Innovation Policies', 26 measures) following third. In contrast to that, few world-class performing regions seem to have launched dedicated measures focused on Priority 3 ('Human Resources, Education and Skills') and Priority 5 ('Markets and Innovation Culture'), irrespective of their ranking in the RIS typology.

With a view to budget, it becomes additionally obvious that most of the support measures in Priority area 2 ('Research and Technologies') seem to be high volume (51% of total budget, 43% of measures) while many of the support measures in the Priority area 4 ('Enterprises') seem to be low volume (2.5%, 33.3%). Moreover, a large share of total budget (46.0%) is bundled in measures documented as 'Horizontal Research and Innovation Policies' (Priority 1).

In particular, the focus on priority 2 and 4 applies to the sub-group of six regions that the RIS classifies as 'followers'. In the substantially larger sub-group classified as 'leaders', a further emphasis can be observed on policy approaches focusing on Priority 1 ('Governance & Horizontal Research and Innovation Policies'). Just like in the sub-group of followers, it binds a significant share of budget nearly identical to that of priority area 'Research and Technologies'. Other than in the group of 'followers',

however, this share is distributed across 25 different support measures, indicating that every 'leader' region has launched on average at least one horizontal measure.

In general, these findings are in line with expectations in that they indication that well-performing regions do not invest substantially in subsidies for their already well-performing business sectors, although they may provide funding for some low-volume network and cluster policies to support local business dynamics. Instead, they tend to invest strongly in measures related to the build up and extension of existing or new public research capacities complementary to the strengths of the local enterprise sector. Furthermore, many well-performing regions host innovations funds or innovation fora with multi-purpose budgets that will invariably be classified as Priority 1. That world-class performing regions seem to invest little in human capital, in contrast, seems remarkable as a large share of them has substantial autonomy with regard to e.g. higher education policy. Most spending in this field, however, is allocated as basic funding rather than through dedicated programmes.

Additionally, the fact that the RIM repository focuses on the most important measures in each region may have resulted in an omission of e.g. small volume ESF funding measures in the field of education and human resources. Arguably, therefore, the observable lack of emphasis in Priority 3 may not indicate that actions in this area are entirely absent. They may, however, have become eclipsed by more prominent support measures in Priority 2 and Priority 4 or been included in cross-cutting activities under Priority 1. Finally, it seems fairly logical that both local markets and innovation culture are already well-developed in the majority of world-class performing regions so that a particular focus on measures addressing these issues cannot be expected.

Table 1-1 Overview of RIM repository support measures (Group 1), RIM 2012

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as world-class performers	46.0%	(26 of 162 measures)
2- Research and Technologies		51.1%	(70 of 162 measures)
3- Human Resources (education and skills)		0.3%	(8 of 162 measures)
4- Enterprises		2.5%	(54 of 162 measures)
5- Markets and innovation culture		0.0%	(4 of 162 measures)
Total		100%	

Source: Own figure based on the RIM repository.

Table 1-2 Overview of RIM repository support measures (Group 1), RIM 2011

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as world-class performers	64.2%	(23 of 167 measures)
2- Research and Technologies		33.2%	(79 of 167 measures)
3- Human Resources (education and skills)		0.2%	(8 of 167 measures)
4- Enterprises		2.2%	(50 of 167 measures)
5- Markets and innovation culture		0.0%	(5 of 167 measures)
n/a		0.1%	(4 of 167 measures)
Total		100%	

Source: Own figure based on the RIM repository.

Table 1-3 Overview of RIM repository support measures (Group 1), RIM 2012

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as world-class performers **leaders**	38.76%	25 of 125 measures
2- Research and Technologies		40.96%	53 of 125 measures
3- Human Resources (education and skills)		0.34%	7 of 125 measures
4- Enterprises		2.53%	37 of 125 measures
5- Markets and innovation culture		0.00%	3 of 125 measures
Change in RIS performance group 2006-10 'leaders'	➕	(8 of 21 regions)	
	↘	(1 of 21 regions)	
	＝	(12 of 21 regions)	
RIM measure priorities	**Focus Group**	**Budget Contribution per Priority in Group TOTAL**	
1- Governance & horizontal research and innovation policies	regions classified as world-class performers **followers**	7.23%	1 of 37 measures
2- Research and Technologies		10.19%	17 of 37 measures
3- Human Resources (education and skills)		0.00%	1 of 37 measures
4- Enterprises		0.00%	17 of 37 measures
5- Markets and innovation culture		0.00%	1 of 37 measures
Change in RIS performance group 2006-10 'followers'	➕	(2 of 6 regions)	
	↘	(2 of 6 regions)	
	＝	(2 of 6 regions)	

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as world-class performers **moderate**	0.00%	0
2- Research and Technologies		0.00%	0
3- Human Resources (education and skills)		0.00%	0
4- Enterprises		0.00%	0
5- Markets and innovation culture		0.00%	0
Change in RIS performance group 2006-10 'moderate'	➕	-	
	↘	-	
	=	-	
RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as world-class performers **modest**	0.00%	0
2- Research and Technologies		0.00%	0
3- Human Resources (education and skills)		0.00%	0
4- Enterprises		0.00%	0
5- Markets and innovation culture		0.00%	0
Change in RIS performance group 2006-10 'modest'	➕	-	
	↘	-	
	=	-	

Source: Own figure based on the RIM repository and RIS.

1.2.2 Trends in the policy mix

In broad terms, the distribution of different support measures across the five priority areas has not changed much between the two points of observation (2011 and 2012) that could be studied during the performance period of the project. Overall, the number of measures listed in the RIM repository has decreased by five (167 to 162).

On the one hand, the focus has shifted from Priority 2 ('Research and Technologies', 79 to 70) to Priority 1 ('Horizontal Policies', 23 to 26) and Priority 4 ('Enterprises', 50 to 54) by a margin. On the other hand, the share of funding bundled in 'Horizontal Policies' seems to have declined (64% to 46%) while role of targeted investment in research and technologies has increased (33% to 51%). The low share of funding attributed to funding for enterprises, to the contrary, remained about identical (2.2%/2.5%).

In the years from 2010 t0 2012, eight new measures have been launched under Priority 1, eight others have been launched under Priority 2, four have been launched under Priority 3, 15 have been launched under Priority 4, and one new measure has been launched under Priority 5. During 2010, the focus of newly launched measures was distributed about equally across funding for research and funding for enterprises. In 2011/12, the focus on research lessened and shifted to an about equal emphasis on funding for enterprises as well as horizontal policies. Among the former were 'Innovation initiation projects' in Austria, 'Technology-oriented new business centres' in Germany and 'Herefordshire Business Support Schemes' in England. The latter included the 'Regional Fund for Innovation/Cluster' in France, 'Innovation Power STHLM' in Sweden, and the 'Open Tampere' Programme in Finland.

1.3 Appraisal of regional innovation policies

1.3.1 Relevance of current innovation policies

When it comes to the different forms of support measures launched in world-class performing regions, the analysis of the RIM repository data suggests that these regions display an above average focus on measures supporting small and medium-sized enterprises, policies for science-industry cooperation, measures supporting knowledge transfer, measures building skills for innovation, measures supporting start-ups/spin-offs, measures to support innovation culture, innovation support services, measures to support innovation networks, cluster policies, measures to launch and support public-private partnerships, incubators/science parks, early stage-financing policies, eco-innovation policies, gazelles, policies to support new technology-based firms, and fiscal incentives (by order of descending absolute importance). Furthermore, a below average focus can be found for entrepreneurship policies, applied business research policies, policies to build research infrastructure, university related measures, policies for innovation in the service sector, innovation vouchers, service policies, as well as policies related to business angels and climate change (by order of descending absolute importance).

That supporting world-class performing regions see many of their support measures as relating to small and medium-sized enterprises, science-industry cooperation, and knowledge transfer seems in line with expectations and the finding of the two first regional innovation monitor annual reports. In those regions, large corporations are typically already doing well so that at least programme-based funding will tend to be financed on SME. Additionally, the regional government will seek to bring together players from the business and the – typically well-performing – public research sector in science-industry co-operations with the objective to improve technology transfer. Additionally, high-performing regions have realised that they need to invest in measures building skills for innovation even though not all of those seem to be dedicated measures in the field of human capital (of which there are few). Finally, it appears sensible that world-class performing regions which mostly have to improve interactions and to add momentum to their regional economies would display an above average focus on measures to support innovation networks, cluster policies and initiatives to build public-private partnership.

That support measures related to different types of financing as well as fiscal incentives are comparatively rarely implemented can be explained by the fact that many of the world-class performing regions are located in nations where tax incentives are not part of the political toolbox and where there is a somewhat less than vibrant venture capital scene (e.g. Germany).

Regarding those measures which are less often mentioned than on average, it should be noted that, within the group itself, entrepreneurship policies and applied business research policies are still more common than a number of other actions for which world-class performing regions display above average figures. With a view to the others, we find confirmation that the build up of research infrastructure or university capacities is nothing that world-class performing regions tend to address via policy programmes, even though many of them may indeed make considerable investment in those fields – e.g. by means of basic funding.

Other type of policies in the field of innovation in the service sector, services in general, or business angels change are simply not yet well developed. Furthermore, some issues may be referred to less often than expected because they are by nature not very regional and thus tend to fall into the domain of national policy makers (e.g. climate change, research infrastructure).

In summary, we find a pattern of keywords that seems to indicate and/or confirm that many world-class performing regions have indeed implemented a policy mix which is comparatively well-adapted to their innovative potential and well-suited to improve their economic situation in the long run.

Table 1-4 Main forms of innovation support (Group 1)

Form of support	Average scores
Applied business research	0.56
Business angels	0.00
Climate change	0.00
Cluster	0.52
Early stage-financing	0.37
Eco-innovation	0.26
Entrepreneurship	0.70
Fiscal incentives	0.04
Gazelles	0.19
Incubators/science parks	0.44
ICT	0.00
Innovation culture	0.70
Innovation in the service sector	0.15
Innovation networks	0.63
Innovation support services	0.67
Innovation vouchers	0.04
IP rights	0.00
International cooperation	0.00
Knowledge transfer	1.19
New technology-based firms	0.15
Public-private partnership	0.48
Research infrastructure	0.26
Science-industry cooperation	1.26
Service	0.04
Skills for innovation	0.89
Small and medium-sized enterprises	2.19
Start-ups/spin-offs	0.78
Universities	0.26

Source: Own figure based on the RIM repository. Above EU average in green, below in red.

1.3.2 Effectiveness of innovation policies and availability of evidence-based assessments

Irrespective of what the exact overall policy mix may be, it is remarkable that more than four in five support measures implemented in world-class performing regions have been assessed by the regional correspondents as being 'fit for good practice'. This share is notably larger than in the two other groups of regions (56%, 65%). Furthermore, the share of such 'exemplary' measures is somewhat higher in regions which the RIS ranks as 'leaders' than it is in those regions ranked by the RIS as 'followers'. The structural difference in assessments, however, is not very substantial. For example, it cannot be excluded that it is a reflection of different assessment cultures in different countries.

With a view to the different priority areas, we find that the 'four in five' tendency applies to all priority areas in which a significant number of measures have been launched (Priority 1, 2, and 4; 81%, 84%, 83%). The fact that the shares in Priority 3

and 5 are slightly lower (63%, 75%) can be attributed to a statistical variation due to the small total number of measures (8 and 4 respectively).

Remarkably in contrast to this, policy measures in world-class performing regions have a lower tendency to have been evaluated (around 15% of all measures) than those in regions assigned to the other two groups (around 20% of all measures).

With a view to the different priority areas, we find that the 'one in five' tendency applies to only priority areas in which a significant number of measures have been launched (Priority 1, 2; 23%, 20%) while measures with a focus on enterprises have a significantly lower tendency of being evaluated (only 6%). Furthermore, measures with a focus on human capital (Priority 3) and innovation culture (Priority 5) have a very low tendency of being evaluated (13%, 0%).

What at first appears to be a remarkable finding becomes clearer when taking into account that many world-class performing regions are located in regions with a fairly well-developed evaluation culture. As a result, some regional correspondents may have applied demanding criteria and e.g. not counted ERDF mid-term assessments as evaluations. Beyond that, anecdotal evidence confirms that the policy mix and support landscape in these regions has grown over time so that responsibilities for regional innovation policy have become fragmented. Against this background, it is in these regions more likely that some aspects of regional innovation policy are not evaluated than in those regions that bundle all actions in one agency and under one OP ERDF.

Additionally, it seems worth noting that all 37 support measures launched in those world-class performing regions that the RIS ranks as 'followers' have remained unevaluated while with 25 out of 125 measures the usual 20% of measures have been evaluated in those regions characterised as 'leaders'. This pattern, however, is not obvious in the other two groups of regions in which the share of evaluated measures in 'leading' regions is typically lower than or equal to that in 'moderate' or 'modest' performers. Consequently, it should not be over-interpreted as in a straightforward manner suggesting that evaluation increases innovative performance. Again, it may be a reflection of the different evaluation cultures in different countries. Possibly, however, it can indeed be concluded that many well-performing regions seek to increase the effectiveness of their policies by means of evaluation, even if many of these policy are already known to work well (see above).

Table 1-5 Available evidence-based assessments and share of good practices (Group 1)

RIM measure priorities	Focus Group	Measures with evidence-based assessments		Measures considered as good practice	
1- Governance & horizontal research and innovation policies	regions classified as world-class performers	23.1%	6 of 26 measures	80.8%	21 of 26 measures
2- Research and Technologies		20%	14 of 70 measures	84.3%	59 of 70 measures
3- Human Resources (education and skills)		12.5%	1 of 8 measures	62.5%	5 of 8 measures
4- Enterprises		5.6%	3 of 54 measures	83.3%	45 of 54 measures
5- Markets and innovation culture		0%	0 of 4 measures	75%	3 of 4 measures

Source: Own figure based on the RIM repository.

Due to this limited prevalence of in-depth evaluation, there is a comparatively small share of support measures whose outcome can be confirmed based on evaluations or a more complex, verifiable monitoring – with 6.2% or 8.0% for measures launched in regions that the RIS ranks as 'leaders'. In general, this share of positively evaluated measures is at par with those found in the other two regional groups (7.0%, 5.7%).

In a larger share of cases of about 18% (22% in 'leaders', 5% in 'followers'), however, can at least the achievement of certain targets be confirmed. This would for example
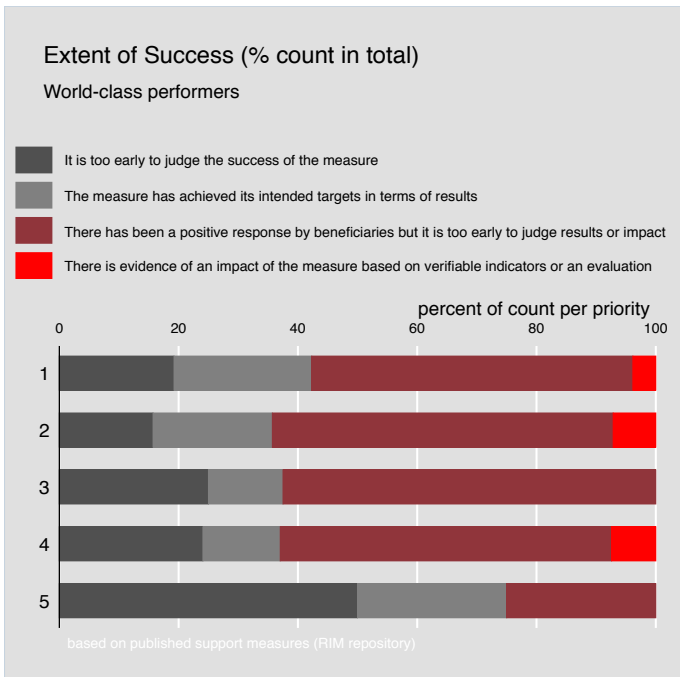
be the case, if a programme specific monitoring has been included in an ERDF mid-term evaluation. Apparently, it is that type of collecting evidence that most clearly sets world-class performing regions apart from the other two groups (9.0%, 12.6%).

Furthermore, nearly 55% of all support measures have received a positive response from beneficiaries, indicating that few of them have been launched in vain even if a final assessment of their impact cannot yet be made. Among the measures launched in RIS 'follower' regions with their less developed evaluation and monitoring cultures (see lower shares of measures evaluated and monitored above) even 76% of all measures can be confirmed as useful in this more general sense. In any case, more support measures are thus positively assessed in world-class performing regions than in the two other regional groups (46%, 46%).

Finally, about 20% of all measures in both types of regions cannot be assessed because they are either too novel to make a well-grounded statement regarding their usefulness or because they have simply not yet been analysed in any useful way. As the possibly most important finding, we can thus conclude that the share of support measures about whose benefit we – and thus policy makers – now very little is much lower than the respective figures for the two other groups (38%, 36%). To an extent, this may have to do with the fact that 'too early too judge' situation will obviously less often occur in regions which have practiced regional innovation policy for decades. On the other hand, it may well suggest that world-class performing regions are developing and supervising their regional innovation policies more closely than others and are thus able to deploy their resources more effectively.

With a view to the different priority areas, we find that Priority 2 and Priority 4 are the focal points for verifiable monitoring or in-depth monitoring, followed by Priority 1. Since both support measures for research and enterprises are more likely to be programme based than horizontal approaches, this finding is in line with expectations. On the contrary, there is a slightly higher tendency of measures to 'have achieved their intended targets in terms of results' in Priority 1, Priority 2 and even Prioirty 5 than there is in Priority 3 and Priority 4. Apparently, it has either been found difficult to specify targets for measures in the field of human capital and enterprise support, or these targets have more often not been achieved. Moreover, there is a solid basis of about 60% of all measures, which – according to the regional correspondents – have met a positive response by their target group. The only exception from this general pattern are the four measures assigned to Priority 5, two of which (50%) which have been found too novel to assess, while the others were confirmed as adequate.

Figure 1-1 Assessments of measures by priority field (Group 1)

Extent of Success (% count in total)

World-class performers

- It is too early to judge the success of the measure
- The measure has achieved its intended targets in terms of results
- There has been a positive response by beneficiaries but it is too early to judge results or impact
- There is evidence of an impact of the measure based on verifiable indicators or an evaluation

percent of count per priority

based on published support measures (RIM repository)

Source: Own figure based on the RIM repository.

1.3.3 Identification of credible actions

In the following, a more detailed insight will be provided into some of the success stories behind those policies that the RIM regional correspondents have considered examples of good-practice and/or which have been positively evaluated. Furthermore, additional information from regional experts has been taken into account.

To guide the reader and provide a structured approach, the examples have been structured along three main headings focusing on policy mix, strategy, and participation; organisations, institutions; and evaluation and monitoring.

With regard to policy mix, strategy, and participation

Which **world-class performing regions** have in the past successfully addressed their local challenges? Which particular policy mixes have proven well adapted to the regional situation? Has the mix of policies/regional strategy been determined in a participatory process? What experiences have been made with such processes?

In general, world-class performing regions have a strong regional economy and a strong regional innovation system that combines a vibrant private economy with a strong public R&D sector. On the one hand, therefore, their challenge is to maintain and extend this comprehensive R&D basis. The provision of this basic funding, however, is in most cases mainly a responsibility of the national government so that most world-class performing regions policy would rather focus on other issues.

On the other hand, few world-class performing regions receive substantial support from European sources (ERDF), with the exception of Saxony in Eastern Germany. If they take decisions to invest in local policy measures, therefore, they cannot invest large sums of money from public budgets and thus have to either focus on inexpensive measures or on leveraging funding from private sources.

As a result, the mix of support measures covered by the RIM repository suggests that the typical intervention in world-class performing displays a **focus on consultancy**, **networking-oriented initiatives** (cluster policies), and other low-budget activities e.g. to develop **innovation management capabilities** by transferring human

capital to SME (innovation assistant). On the other hand, we find **large-scale joint activities of public and private actors** (PPP in R&D, leading-edge clusters).

- **Example: Cluster Policy Baden-Wuerttemberg (DE)**

The cluster policy of Baden-Wuerttemberg consists of different policies and measures by several ministries. By the help of a German consultant, the federal state's government identified 18 branches, technologies and cross-sectional competences or services to be the future fields of cluster policy.

In an increasingly tight market, cluster policy aims to enhance the local competitiveness by bringing regional resources together by focusing on value chains and cooperation between local firms. From the beginning, the policy measure's idea was to provide more than mere financial support which, with an annual €2.75m remains fairly limited.

Instead, the key notion behind the policy design was to trigger the set-up or consolidation of bottom-up private sector initiatives and strengthen their potential for dynamic regional development by providing some complementary funding from ERDF sources. With this in mind, the cluster policy concept of Baden-Württemberg is implemented in the form of a competition over different phases, i.e. up to five clusters have and will be selected as "winner clusters" in the different competition rounds.

To dynamically assist the initiatives development, "strategic intelligence" is organised in the form of working groups to different cross-cutting issues of interest to all clusters (e.g. cluster management) rather than in the context of an ex-post evaluation.

Importantly, the selection of clusters was thus only fairly broadly pre-specified by regional policy makers. Instead, they relied on the creativity of local actors to provide different concepts for future projects and only then selected those that appeared most convincing. It is an important characteristic of the approach that public money can thus only be allocated after the fact of the development of a sound proposal and the establishment of a convincing working group.

- **Example: Regional Technology Initiatives (Lower Saxony, DE)**

The Government of Lower Saxony has initiated regional initiatives in certain key industrial sectors which are particularly important for the economic development of Lower Saxony. For a regional initiative to be created, a future oriented trend, clear market dynamics as well as visible potential in the region have to be present. Like in Baden-Württemberg, these general strategic considerations are taken by the governments itself.

Other than in Baden-Württemberg, however, they are not selected based on a competition. Possibly this is due to the lower density of actors in the regions which makes the choice of the potential participants of an initiative more obvious.

It is the key aim of the regional initiatives to connect regional universities and the regional business sector in one network by informing the network partners about the newest trends and new funding opportunities, the kick-off of major co-operations and innovation project on the European, federal, and regional level, public relations and place marketing.

To avoid a lock-in of unsuccessful approaches regional initiatives are typically established for a period of about three years and only extended following an evaluation of the Centre for Innovation Lower Saxony. During these three years, the federal state's government finances an agency/office as well as a separate budget for innovative projects. Currently, funding amounts to an average annual €250,000.

Overall, six regional initiatives have been set up in the fields of adaptronics, fuel cell technology, life science, microsystems and sensor technology, nanotechnology and material sciences, and telematics. The number of initiatives supported is thus significantly smaller than in other federal states.

- **Example: Strengthening Stockholm's ICT-cluster – Kista Science City**

The policy measures objective is to develop Kista Science City as a world-leading cluster in information and communications technologies by stimulating the co-operation between regional ICT companies.

The project is run by Kista Science City AB, a subsidiary of Electrum Foundation, and involves about 60 companies and nine business networks. The target group is primarily smaller ICT companies in Kista Science Park, but larger companies are also involved in the project. Within the project, three types of networks will be established:

– executive networks, including dialogue, problem solving, knowledge development through regular meetings, coaching and support;

– expertise networks in different thematic fields, in order to develop and exchange inter-disciplinary knowledge;

– network between ICT industry and the audiovisual industry, to initiate business development and growth in the multi media sector.

The project is running during 2009-2011 and has a budget around €1.4m, provided by the ERDF (€0.57m), Kista Science City (€0.79m) and the Interactive Institute (€0.06m).

A recent mid-term evaluation indicated that approximately 40 CEOs are involved in the Kista Science City network and in total there are as well approximately 60 people involved in the specialist and expertise network.

- **Example: Peaks in the Delta (North-Brabant, NL)**

According to the OECD, the Netherlands has successfully implemented national place-based policies. Until 2010, investments in key areas such as infrastructure and housing were strongly coordinated and focused on strong city-regions. One foundation of this success was the policy developed as a consequence of the 2004 "Peaks in the Delta" paper. Since, 2006 the place-based cluster policies of the 'Peaks in the Delta' programme were a central element of the regional economic development effort in the Netherlands. What makes them specific is that they were implemented in co-operation between the state and the regions. Simply put a mix of national and regional funds were channelled to clusters selected by the regions. The goal of this approach thus was to – on a regional basis and with regional participation – strengthen areas of innovative competence that are important to the Netherlands as a whole. Hence, although its 'key innovation areas' were anchored in the national innovation strategy they were applied in a differentiated way which allowed the regions to focus on the specific areas of strength.

PiD Southeast was the part of the national PiD programme focussing on Limburg and (Southeast) Brabant. The 'peaks' supported were high-tech systems and materials, food and nutrition and medical technology and life sciences. Projects could be supported in 4 programme lines: cooperative R&D; cooperation in the value chain (road maps, coupling of design and technology, value chain innovation); knowledge workers (knowledge migrants; international top-level education; keeping knowledge workers in the region; improving interface between education and labour market); open innovation.

PiD Southwest was the part of the national PiD programme focussing on (West) Brabant and Zeeland. The sectors supported by the policy were logistics, the process-industry and tourism.

Its goals were:

– to develop the Southwest into a centre for new bio-energy sources;

– to develop the Southwest into an international hotspot for maintenance;

– to stimulate innovation between logistic chains and attract logistics businesses;

- to attract high-quality tourism companies, develop new touristic markets; and

- to improve the knowledge infrastructure in this area.

Every year, calls were issued to which companies, research institutes and other organisations can submit proposals. The amount of funding available for allocation increased from €10m annually in 2006 to €24m annually in 2010 (PiD Southeast) and from about €2.6m annually in 2006 to €8.5m annually in 2010 (PiD Southwest). In both cases, it was provided in equal shares from the national and from the regional level.

The last projects in the national Peaks in the Delta (PiD) programme were awarded early 2011. From 2011 onwards, regional innovation policy in the Netherlands has become a provincial responsibility instead of a joint national/regional responsibility.

In the meantime, the Peaks in the Delta programme can be considered a good example for national regional co-ordination in countries which, constitutionally, have a rather weak regional governance infrastructure but still display large differences in regional potentials for economic development and regional technological specialisation.

- **Example: Centre of Expertise Programme - OSKE (Southern Finland)**

The OSKE programme was established in 1995. Its first phase lasted until 1999, its second phase until 2006. The aim of the (national) programme is to enhance regional competitiveness and to increase the number of high-tech products, companies and jobs. To achieve this goal, the programme is used to implement projects reflecting the needs of local industries, to encourage local industries to co-operate with research and training institutions, to ensure rapid transfer of the latest knowledge and know-how to companies and to exploit local creativity and innovation.

The new Centre of Expertise Programme period started in 2007 and runs until 2013. The operational model of the programme has been re-defined and now builds on so-called 'clusters of expertise' which function as the new platform for development of inter-regional co-operation. The programme focuses on internationality in R&D and business activities, boosting the growth of knowledge-intensive companies and linking the programme closer to national innovation policies. So far, the Government has approved 13 nationally significant clusters of expertise and 21 regional Centres of Expertise for support during the period from 2007-2013.

The idea is to utilise high-level expertise as a resource for business activities, the creation of new jobs and regional development. The centres of expertise specialise in certain selected fields. One task is to strengthen regional critical mass by pooling local, regional and national resources in these fields. Furthermore, the overriding objective of the programme is to increase regional specialisation and to strengthen both inter- and intra-regional co-operation between national and regional centres of expertise.

All Centres of Expertise have jointly prepared Cluster Programme documents that outline the individual Competence Cluster's strategic focus areas and objectives. Notably, these strategies tailored to the needs and opportunities of enterprises in the area and of other innovation system operators. The process of drafting involved a broad range of local stakeholders including local companies, universities, universities of applied sciences, research institutions, technology centres and various financing bodies such as cities, municipalities, regional councils, TE Centres and their technology development departments, alongside state provincial offices.

In the region of Southern Finland, more than €20m of public funding are currently being allocated to the OSKE (Centre of Expertise) programme on an annual basis. Regional policy actors may take part in co-financing but are not involved in allocations through the programme itself.

Consequently, the OSKE programme can be considered a good example of a strongly situated and place-based national programme in a country where the regional level is arguably too weak to devise and implement cluster policies on its own. Furthermore,

the handling of national and regional level clusters under one support directive allows to more easily support inter-regional, inter-cluster co-operation.

- **Example: Innovation Awards for Small and Medium Sized Enterprises (Saxony, DE)**

The measure aims to reduce the perceived distance between small and medium-sized firms (SME) and research organisations and thus help to identify and leverage additional potentials for research and development (R&D) as well as technology transfer. Its main objective is to help to increase the number of innovating SMEs in Saxony as well as the innovation capacity of those which are already innovating.

Support is provided in the form of a repeated grant for externally provided R&D services and related investments thus seeking to trigger additional science-industry co-operations. The services can but need not be provided by a public research institution.

Eligibility extends to all industrial firms, craft enterprises and engineering service providers that fulfil SME criteria and are registered in Saxony. Individual grants can amount to up to €10,000. Typically, 50% of eligible expenditures will be refunded.

Applications can be submitted to the Development Bank of Saxony (SAB) for consideration at any time. They have to be submitted and approved, before the actual project is started and the envisaged partner organisation has to be determined beforehand.

An in-depth evaluation of the measure in 2011-12 came to the conclusion that its fits with the requirements of the local SMEs and that the programme has succeeded in reaching beneficiaries that did not profit from public support so far.

- **Example: Regional Partnerships: Danish Growth Fora**

The Growth Forum for the Capital region functions as a platform for regional development. It brings together municipalities, companies, organisations and research institutions in a strong partnership with the goal of identifying and improving the framework conditions for innovation and business development in the region.

For instance, the Growth Forum drafts a long term development plan for the region which results in a number of actions taken by the regional authorities such as new policy priori-ties and new policy projects. Furthermore, the Growth Forum decides on which projects should be supported with funding from the European Regional Development Fund and Social Fund. The Growth Forum is therefore the most important regional body launching policy measure in Denmark related to innovation and business development.

The Growth Forum examines the region's strengths and offers suggestions on how to expand them. It also works to develop business strategies for the region and to monitor and analyse conditions for growth in the area. The Growth Forum facilitates regional projects on innovation, knowledge building, technology, new business and tourism - including financial support. Besides that it assigns the EU Structural Funds for development activities that enhance innovation, new businesses, business clusters, capacity building, tourism and encourage the use of new technology. The Capital Growth Forum is one of six regional forums in Denmark. Altogether 20 members of the Capital Growth Forum meet six times a year, whereas the Capital Region acts as the secretariat for the Growth Forum.

The Growth Forum has supported a large number of projects over the years. Recent projects include support for development of renewable energy such as demonstration of technologies for sustainable energy production from biomass.

In particular, the Copenhagen and for that matter all Danish Growth Fora are thus notable for the fact that the regions have institutionalised their processes of regional consultation and regional analysis as platforms for regional development.

- **Example: Bavarian Cluster Initiative 'Clusteroffensive Bayern' (DE)**

From 2003 onwards, the Bavaria embarked on a policy of fiscal restraint which no longer allowed the allocation of similarly remarkable sums to RTDI policy as had been invested in the past. This prompted a new approach to RTDI policy that shifted emphasis from building infrastructure to support for networking. This policy was first announced under the label of "cluster policy" in 2003.

Its guiding political vision limiting potential eligibility was rather broadly defined as:

– to strengthen innovative dynamics in 19 selected sectors;

– to improve firms' access to specialised suppliers, and qualified personnel;

– to increase mutual understanding in related fields, and to strengthen cooperation on pre-competitive projects along the value chain be increased; and

– to strengthen companies' ties to Bavaria as a business location.

As a first step, it was agreed that cluster activities were to be implemented through semi-independent cluster agencies and that well-known figures from the respective industries were to be named spokesperson to bring their experience and networks to the clusters. Subsequently, the state had to decide which technological fields were to be supported by cluster agencies. Originally, this process was supposed to yield ten concepts for implementation of clusters, endowed with a budget of around €500m.

In a top-down-bottom-up finding phase the regional cabinet then authorised its different ministries to tap into their existing informal network of key players who would qualify as spokespersons and to raise their interest in participating in the programme. For purposes of co-ordination among themselves, the relevant regional ministries formed a working group, the "cluster taskforce", while parallel working groups were formed to bring the potential spokespersons together at regular round table meetings. In parallel, a new medium-level organisational unit had been created at the State Ministry for the Economy, to better co-ordinate activities within the Ministry itself.

In the ensuing process of discussion, the sectorally and regionally uneven distribution of benefits from the new line of policy might cause led to hot debates which indeed had to be mediated by the newly set up "cluster taskforce". As a result, the objective was changed to supporting 15 rather than ten sectoral clusters even though in the meantime, the originally envisaged overall budget of €500m had not proven viable in the budgetary process and been cut back to a mere 10% of it (€50m).

Thus and beyond, there is compelling evidence that the process has been subject to a large number of affected interests aiming at and succeeding in broadening the focus of the new policy. What had started as a policy focusing on support for technology-intensive sectors became complemented by elements of support for less technology-intensive sectors and those relevant for regional development. Although some strict official criteria defining the eligibility of sectors were later published they were quite obviously only devised when the selection process was at least well underway. Despite all that, not all affected interest groups and regional stakeholders could push through their interests successfully and a mediated balance of objectives was found.

Moreover, the Bavarian cluster policy has proven a success model on many accounts from its start in 2006 until today – as two detailed evaluations in 2008 and 2010 have documented. Although not flawless, it demonstrates that even a quite dynamic and politically contested "process of discovery" can at time yield better results than one ruled by strict criteria.

- **Example: Innovation Strategy (Saxony, DE)**

For a long time, the Free State of Saxony did not have an explicit Innovation Strategy. After first general 'guidelines for technology policy' had been drawn up following the German reunification, the strategic design of regional innovation policy was not made explicit in a separate document again for nearly two decades. Nonetheless, the overall

development of the regional mix of support measures remained under constant and in part vigorous discussion among regional stakeholders and policy makers. Furthermore, some strategic considerations were in regular intervals expressed in policy documents of a more general nature as well as in the ERDF/ESF operational programmes.

Although the overall absence of an explicit innovation strategy did thus not make the regional approach to innovation policy less strategic, it arguably left some untapped potentials that could be tapped by the comprehensive participatory process that goes along with the development of a regional innovation strategy. In the end, it was not least the foreseeable necessity to respond to the upcoming support period's ex-ante conditionalities that motivated the local policy makers to finally set in motion the drafting of an innovation strategy which had already been considered for a while.

In general terms, the strategy states four main objectives: First, to identify strengths and weaknesses, potentials and issues calling for action in the Saxon innovation system; Second, to develop a set of concrete proposals for measures to strengthen strengths and reduce limitations (profile of the Saxon research landscape, perceived relevance of innovation in economy and society) taking into account best practice; Third, to improve the co-ordination between government action and industrial/academic needs; and Fourth, to optimise the allocation of resources and, if necessary, adapt the current support measures accordingly. The strategy has been developed in a comprehensive and inclusive process of strategy development that was recently initiated.

Judging from the repeated delays in its publication, the process of developing a regional innovation strategy turned out to be somewhat more complex than originally expected. As it seems, however, it will now be published by mid 2013. Even today, it can be stated that the process of discussion among different regional stakeholders itself was certainly not without merit. While the writing up of the strategy itself may (for good reasons) not prompt major adaptations in an already very successful policy mix, it has prompted a useful and fruitful process of public and inter-ministerial consultation.

As a main lesson from these examples it can thus be acknowledged that most of the world-class performing regions **can and rightly do rely on existing structures and dynamics** when deciding about the allocation of additional public funding. In essence, they have to and often do structure policy measures in such a way that they **add to the momentum of the private sector** and trigger the development of novel forms of and approaches to co-operation by the future beneficiaries.

In many world-class performing regions, **policy makers can draw on a vibrant community of stakeholders with a strong intrinsic interest to express its needs to policy makers. In many cases, grassroots initiatives will already have developed by their own**. An important challenge to policy making in world-class performing regions thus is **to keep in mind and be aware of existing initiatives – i.e. existing momentum – when it comes to the specification** of concrete support programmes. As a result, regional governments of world-class performing regions have a tendency to **tailor 'their' regional support measures to 'their' specific research and business landscapes** – and that they have tended to do so successfully in the course of the past few decades.

On the one hand, it thus seems that the regional **processes of consultation in world-class performing regions are well established**. On the other hand, however, the listed examples place a **strong caveat with regard to the question whether such processes can be 'engineered'**, i.e. centrally directed by means of criteria and stipulations. In world-class performing regions, stakeholder participation not only means tapping into a vibrant regional economy but also into an equally vibrant regional political scene. **As is natural in democracies, it will be difficult to take central decisions on 'specialisation', i.e. in practical terms the exclusion of some parties from specific lines of funding.**

With regard to organisations and institutions

Are there good practices in **world-class performing regions** in terms of regional organisational set ups of funding agencies? What are the joint characteristics of such organisations?

In principle, many world-class performing regions can be looked upon as setting examples for highly professionalised support organisations and handling, for example in terms of the allocation of funding from regional foundations or regional support banks. One major drawback, however, is the fact that many of these support organisations have existed in these regions for years (if not decades) and have thus developed the usual complexities and path dependencies with the resulting degree of lack of efficiency.

- **Example: Umbrella Organisations 'Clusterland Upper Austria'**

Clusterland Upper Austria states its mission as contributing to Upper Austria's innovation policy by helping companies to sustain their innovative and competitive edge through cooperation and competence.

In the course of the last decade, Upper Austrian economic development and technology policy has increasingly been focused on supporting existing and building new clusters and networks which, since 1998, were gradually developed in important economic branches in Upper Austria with a specific focus on support for small and medium enterprises.

In general, the Upper Austrian Cluster Policy is built on the notion of a **cluster as a natural existing area of economic and technological strength** in the region. Consequently, it is mainly aimed at boosting the innovation efficiency of the companies by increasing their mutual co-operations rather than at building capacity.

In detail, the following clusters have been selected for support in Upper Austria: automotive, plastics, eco-energy, furniture & timber construction, food, health technology, mechatronics and environmental technology. In addition, inter-branch networks have been set-up in the fields of human resources, design & media, logistics and energy efficiency.

Within Austria as well as internationally, the consistent and systematic support for clusters and networks is considered as a model of good practice. Due to its obvious success and positive impact, the organisation's activities are being continued under the framework of the strategic program "Innovative Upper Austria 2010plus".

Until late 2005, all clusters and networks were administered and directed by Upper Austria's location and innovation agency (TMG). Nowadays they are part of the Cluster-land Oberösterreich GmbH which is operational since January 2006. It main owners are the TMG with 61%, the Upper Austrian Chamber of Commerce, and the Federation of Austrian Industry with 19.5 % of the share respectively.

The organisations mission is stated as: initiating and supporting cooperation, increasing the visibility of the sectors and cluster members in an international context to promote regional fields of strength, as well as to support future growth sectors and cross-sectoral topics critical for the sustained competitiveness of the region.

Hence, it seeks to support all clusters and cluster member by:

- broad information and communication platforms including regular newsletters, journals, detailed databases, frequent company visits as well as interviews and websites;

- the organisation and realisation of events for better knowledge transfer and qualification including workshops, company tours, study trips, know-how transfer on technologies and trends, regular specialised events as well as co-operations with R&D institutions;

- the initiation and support of cooperation projects including the establishment of contacts between potential partners, the organisation of round table meetings involving companies interested in cooperation as well as support during a potential grant application process;

- support for marketing and PR to position clusters and cluster members both home and abroad including joint presentations at fairs and events to enhance visibility;

- support for companies as they enter new markets.

While this overall approach can be considered as common for cluster policies in leading regions, the good practice of Clusterland Upper Austria is that the umbrella organisation brings together the different clusters' administrations in one main 'headquarter' under a centralised management. The advantage of this centralised approach is two-fold. Firstly, it raises synergies and enables the clusters to provide many of the above listed services more efficiently. Secondly, it centralises bargaining powers and enables the clusters to not only identify joint interests and grievances but also to have them heard in the regional strategy process and/or policy debates.

Currently, central management employs a staff of six while the individual clusters employ a staff of two to nine each. Overall, about sixty people thus work under the umbrella of Clusterland Upper Austria.

- **Example: Professionalised Allocation, Public Support Banks in Germany**

From the perspective of the beneficiaries the central role of support banks is that of a one-stop-shop for local businesspeople and entrepreneurs considering applying for support. For them it bundles information on support opportunities and funding from multiple sources, national as well as regional. They facilitate the sharing and bundling of resources between a range of European, national, and regional programmes, aimed mainly but by no means exclusively at small and medium sized enterprises.

Technically, support banks are the central development agencies of the German federal states. Acting on behalf of the regional government, they manage the majority of programmes and allocate and distribute funding to beneficiaries from business, science and society in the form of grants, subsidies, loans and guarantees. Consequently, they have acquired a high degree of professionalism in these areas and relieve the local ministries from the day-to-day controlling and monitoring of support measures.

As financial facilitators, support banks offers a wide range of products as well as services, including low-interest loans and loan guarantees, direct investment, grants and financial consulting. In addition to acting on behalf of various tiers of government, they banks offer packages developed by themselves based on their experience of meeting local needs and helping local businesses. Furthermore, some of them provide entrepreneurs with start-up advice, business coaching, and marketing assistance.

By means of the support bank system, German federal states maintain a system of vision building in policy and administration and professionalised implementation of at least the financial aspect of implementation in the public support banks.

- **Example: OSEO Midi-Pyrénées Regional Directorate (FR)**

The OSEO Midi-Pyrénées regional directorate is the regional office of OSEO, the national public-sector institution dedicated to financing and support for SMEs, created in 2005. OSEO was created by a merger of the French innovation agency ANVAR with the French SME development bank Banque du développement des petites et moyennes enterprises (BDPME) that date back to the 1970s and brought with them a long track record of and embedded knowledge about SME support.

Placed under the supervision of national ministries, the OSEO group has five main fields of activity including innovation, enterprise growth, internationalisation, enterprise creation and enterprise transmission. In the field of innovation, it is one of

the main actors providing financing opportunities and support, as well as technical, financial and marketing sup-port to enterprises carrying out innovative projects. The agency provides assistance by sharing the financial risks generated by such projects with enterprises, through different types of aid schemes: grants, loans and guarantee schemes. It provides support through-out the innovation cycle, from the feasibility study to the commercialisation stages.

OSEO's innovation support mechanisms can be grouped into three categories:

– **Financial support** includes all mechanisms for innovation aimed at sharing the risks generated by R&D projects and improving SME access to private financing. This usually comes under the form of direct grants. Examples include support mechanisms for R&D collaborative projects within poles of competitiveness, the creation of innovative businesses, strategic industrial innovation projects, technology transfer projects.

– **Bank financing instruments** aim at improving access to bank loans in order to finance the production cycles, to increase the cash flow and to guarantee the risks taken by banking and financial partners. Examples include innovation development contracts (guarantee-free loans in order to finance intangible assets needed for an innovation project), innovation guarantee funds, and biotech guarantees aimed at improving SME access to biotechnology.

– **Support services** aim at providing technical assistance and expertise to SMEs for carrying out an innovation project. Assistance is provided in order to find the necessary partners to build transnational technological projects, carry out certification procedures to improve access to public funds and networking among potential project partners.

Currently, approximately 20 % of OSEO's annual national budget of around € 274 m is devoted to subsidies, whereas 80 % takes the form of reimbursable loans based on the philosophy that in case of success, all (most) loans shall be reimbursed whereas in the case of failure the money lent can be considered a subsidy.

In general, the example of OSEO highlights that a national organisation can become a key player in regional innovation policy. By means of regional directorates, it can also provide support that is no less tailored to regional requirements than that of regional agencies. Again, one advantage of regional directorates of national organisations is their high degree of professionalism that a more fragmented approach could not always deliver. In general, it thus underlines that in certain fields of innovation policy (i.e. those related to finance) co-ordinated decentralisation may be a very useful approach.

• **Example: Midi-Pyrénées Innovation – MPI (FR)**

Set up in 2006, Midi-Pyrénées Innovation (MPI) is a regional innovation agency funded by the Midi-Pyrénées Region, the French government and European Union. MPI supports companies regardless of their size, sector of activity or level of technological capability via a team of around 20 permanent staff.

The role of Midi-Pyrénées Innovation is to launch and promote support programmes for companies to encourage commercial and strategic development, based on the networking of various stakeholders.

Within this scope, the agency aims to:

– encourage small- and medium-sized enterprises to commit to a new technology acquisition process and gradually increase their awareness of innovation;

– support innovative companies in their development and give rise to new projects, bringing together the worlds of research and business;

– provide firms with a consultancy service covering aspects of innovation management; and

–   organise events for companies in order to promote innovation.

MPI assists companies in the development of their innovative projects. The agency can provide support at every stage of the project. Examples of activities include the identification of technology needs, support for project planning and management, the search for public and private partners, setting up of consortia, support for identifying and obtaining appropriate funding, support on intellectual property issues, and training.

MPI works particularly with the six following industries: agricultural and biotechnologies, environment/water/energy, healthcare, technical materials and textiles, information and communication technologies, and transport.

In 2011, MPI supported 1,340 innovation projects led by enterprises (representing more than €186m) and MPI's information meetings reached around 19,000 persons.

Notable about MPI is the fact that it bundles many of the activities relate to networking-oriented policies under a central roof. As illustrated above these support activities are among the most central for world-class performing regions and come along with different requirements and specifics than e.g. those policy lines managed by OSEO.

On the other hand it is notable that MPI provides many of the services in a quite general form that are in other regions provided in a more sector/technology specific manner by cluster agencies. It could thus be questioned which approach is more effective.

- **Example: Skåne Food Innovation Network (South Sweden)**

Skåne Food Innovation Network (SFIN) is a network organisation targeting actors in the food industry, public authorities, organisations, and higher education institutions. Regionally, the network was established in 1994 as a bottom-up initiative of the business com-munity. The background was Sweden's approaching membership to the European Union and the increased international competition in the local agro-food sector.

Currently, the stated objectives of the Skåne Food Innovation Network (SFIN) are:

–   develop co-operation in the food industry;

–   support both new start-ups and renewal in established companies;

–   enhance the attractiveness of the food industry, and the support of competences; and

–   give access to meeting places to everyone interested in the food business.

The project is dedicated to creating added value and competitiveness through co-operation and various business-business and business-research constellations. IN particular, SFIN works to increase the attractiveness of the food business to young and well-educated people. Further, it aims to disseminate knowledge so that efforts include education, public opinion surveys, theme days, seminars etc, all aimed at both specialists and a wider audience.

In recent years, SFIM has become a regionally prioritised development initiative, that is in part financed and supported by the Swedish Governmental Agency for Innovation System's (VINNOVA) programme on regional innovation systems, VINNVÄXT. Furthermore, the European Regional Development Fund partly funded the project Innovative Food in Innovative Packaging, initiated within the framework of the SFIN initiative in 2009.

The management considers that Region Skåne's role in the initiative and promotion of the food industry in the region has improved and is currently working well. There is also interest in an active collaboration with Innovation at Interfaces from the new management of Lund University. Further, 2010 halfway evaluation of the VINNVÄXT programme has confirmed that the measure has achieved its intended targets.

In particular, the SFIN network can thus be considered a relevant good practice for two reasons. Firstly, it focuses on an area of regional relevance that is not obviously high-technology related and might under other framework conditions have been neglected by regional innovation policy – to the detriment of regional development. Secondly, it is an organisation that was initially set up as a bottom-up response of the local business sector to upcoming challenges. Only when its main objectives were clearly specified and basic co-operation processes initiated did the initiative apply for additional public funding from the VINNVÄXT programme. It thus illustrates how public funding in world-class performing regions can be effectively guided by responding to stakeholder initiatives.

- **Example: Manufacturing Advisory Service (East of England, UK)**

The British MAS (Manufacturing Advisory Service) is funded by BIS (Department for Business, Innovation and Skills). It provides manufacturing business support for companies based in England, helping them to improve and grow. The MAS is designed to help the manufacturers streamline their processes, reduce waste, become more energy efficient and generally improve and grow their business.

MAS advisors can be contacted by all firms, regardless of the size of their business, as long as they are engaged in manufacturing. Most have experience of both shop floor working and management skills and work with business's workforce to ensure that the business is run in the best way possible. For regional small or medium sized manufacturers, many of the services are free and can be supplemented by appropriate grant funding. Consequently, support is in practice mainly provided to SMEs, although larger companies can use MAS's resources at market rates. The maximum aid to an SME is no more than £10,000 per project. The maximum aid which can be provided is 50% of eligible costs.

A recent evaluation yielded the central findings that:

- The MAS exceeded its original objectives by nearly 50% in terms of numbers of diagnostic visits (Level 2 support) and by 100% in terms of consultancy support (Level 4),

- MAS participants have experienced additional intermediate benefits that can be generated by application of good practice techniques in manufacturing operation.

Overall, a combination both of qualitative and quantitative evidence collected through evaluations suggests that, within the study period the scheme 'worked' and was well received by the sector and its target market.

Nonetheless, it also stated that meeting client expectations and keeping up with high levels of satisfaction is a continuous challenging task so that the MAS regional centres need to assess regularly their market as well as their own capacity and capabilities to deal with emerging needs. Further, there is a need for a comprehensive performance management framework of the scheme. All parties involved will need to be clear about what additional actions and what changes are required, at what level (e.g. region, sector, company, MAS regional centre), by whom and when. This is needed to manage the programme effectively, but also to provide robust information and demonstrate what works well, what adds value and where improvements may be needed.

Again, the Manufacturing Advisory Service is a good and successful example of a nationally funded organisation that works through regional branches and with Area Directors. The benefit of this strategy is that it allows the beneficiaries to address their needs to an ex-pert/employee acquainted with the regional environment that they are located in. De-pending on the type of the regions, local Offices have between four and nearly twenty staff. Against this background, the organisational model of the MAS can be considered good practice for a two-level approach.

- **Example: Common Innovation Strategy Berlin-Brandenburg (innoBB)**

Both federal states were established after German reunification in 1990. As Berlin is surrounded by Brandenburg socio-economic links between both states are strong. Nonetheless in 1996, a referendum was held among the citizens whether to fuse the two states. The people decided against these plans. Nonetheless, cooperation takes place in various fields and has intensified. With regard to innovation policy June 2011 the Senate of Berlin and the Federal Government of Brandenburg passed the Common Innovation Strategy (innoBB).

Cooperation in the field of innovation policy has its routs in the innovation talk held in 2007. Initially, innovation strategies in both federal states had been established individually. But, both concepts revealed a high level of congruency with regard to topics and aims. In addition, synergies were seen in leveraging these complementarities. For further development as common "Zukunftsfelder" (future fields) five industries and technologies fields were chosen which build the basis of the clusters: biotechnology/medical technologies/pharmaceuticals, media/information and communication technologies, traffic system technology, optical technologies[3] and energy technologies. Afterwards, yearly innovation summits followed in which the Common Innovation Strategy was elaborated. At the summit in 2008, lead projects were identified to promote cooperation among actors in both states. In addition, three topics relevant for all five fields were selected: innovation financing, qualification and technology transfer. The summit in 2009 focused on the aspect of technology transfer and the harmonization of technology promotion. For example, with regard to the provision of public funding for cooperative R&D projects with actors in both states treaties were signed so that in certain support programmes promotion agencies are able to support project partners in both states. In addition, so-called field specific "master plans" were elaborated to foster the strategic development. Within the Zukunftsfelder clusters including a management function were established in 2010 and 2011.

- Health care started in July 2010 focusing on pharmaceuticals, biotech, medical technologies as well as health services.

- Energy technology started in January 2011 focusing on turbo engines and photovoltaic. Topics for further development are intelligent energy networks and energy saving technology, e-mobility, energy efficient technologies as well as renewable energies.

- Traffic, mobility and logistics started in May 2011 focusing on automotive, logistics, aerospace, railway and telematics.

- ICT, media and creative industries started in May 2011.

- Optical technologies started in October 2011 focusing on photonic, communication, laser, light, optical measuring, photonics in bio-medicals and micro-system technology.

After having paved the way for a joint innovation policy, innoBB was passed with the main objective to further develop the comprehensive clusters.

In summary, it seems that many support organisations operating in world-class regions are **highly professionalised** and that there is a well-developed division of labour in regional innovation policy. The ways in which these divisions of labour have developed **differ strongly with the individual administrative traditions and multi-level governance systems of the countries**. Nonetheless, most to all regional support organisations in world-class performing regions are similar in that they display **sufficient capacities in terms of manpower and expertise, and**

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3 Cooperation between both states had been established earlier within the association optical technologies Berlin-Brandenburg (OpTechBB).

sector specific knowledge as well as a strong network-based orientation towards the needs of the regional enterprises. In some cases, the **first steps towards the establishment of regional innovation support organisations have even been be taken by businesses instead of regional policy makers**.

With regard to evaluation and monitoring

What type of evaluation and or monitoring has taken place in **world-class performing regions?** Why are many of the existing support measures still evaluated so little, irregularly and/or superficially?

Many world-class performing regions are situated in countries with comparatively strong innovation cultures and a high availability of external consultants and academic institutes willing and able to perform independent, external evaluation. Hence, many of the more expensive individual support programmes in regions like Berlin and Saxony have been evaluated from time to time with the objective of both accountability and policy learning. Nonetheless, systematic evaluations of all regional policy programmes are a comparatively novel – and fairly expensive – phenomenon even among the well-performing regions. While many challenges differ from case to case, experience seems to suggest that a systemic external evaluation of the complete regional policy mix can be estimated to cost about €300-400,000, a good monitoring report at least €100-200,000.

- **Example: Evaluation of Innovation- und Technology Support in Berlin**

In 2010, the first assessment of the large majority of all innovation measures in a German region was performed by a large consulting firm for Berlin. As most independent evaluations in Germany it was strongly based on a comprehensive survey of the opinions and assessments of the recipients of funding in addition to a standardised analysis of the available internal data on allocations and expenditures.

By means of the survey approach the results of the evaluation did not have to be limited to indicating whether or not monitoring targets were met but could provide detailed input on the beneficiaries perception of the support process as such as well as their assessment of a broad range of potential impacts. In detail, these impacts included qualitative effects on firms, qualification in public research, increases in employment and turnover, effects on co-operation and technology transfer and opportunities to finance future projects.

In brief, the survey based evaluation of five major support measures provides a robust basis to reflect on those issues that are of highest interest for a world-class performing region that seeks to build networks rather than infrastructure.

As a synoptic assessment, moreover, the evaluation was able to provide a macroeconomic analysis of the overall effects of the complete spectrum of innovation policy measures. When the evaluators realised that some recipients of funding had made unrealistically high claims regarding certain effects they were able to compensate for that by developing an analysis based on scenarios that allowed them to establish a more credible 'corridor' of likely macroeconomic effects rather than unquestioningly rely on the monitoring figures.

Additionally, the synoptic approach provided the opportunity of a direct comparison of the policy mixes in Berlin, Brandenburg and Saxony and analysed the differences in the overall approaches against the background of a more comprehensive reflection on the policy mix in Berlin from an abstract perspective.

Furthermore, it ended with a number of general recommendations from which a number of very concrete suggestions were derived indicating how the individual programmes could be adapted accordingly. In detail, those recommendations were 'technology and knowledge transfer through knowledge exchange', 'increase of the effectiveness of funding by better integration of measures', addressing the issue of 'early stage finance', 'strengthen soft skills', 'strengthen gender aspects and framework conditions for families', and 'co-operation of applicants in the monitoring of success'.

For a number of years, the Saxon State Ministry for Economic Affairs Labour and Trans-port as well as the Saxon State Ministry for Higher Education, Research and the Arts have commissioned a number of studies to monitor the techno-economic development in the region and to use this information as a basis for policy design.

- **Analysis of the Research and Development Potentials in the Enterprise Sector (2006-09) of the Free State of Saxony (DE)**

The report assesses the R&D potentials in the Saxon enterprise sector in the years from 2006 to 2009 in a differentiated manner and on this basis provides both a (tentative) forecast of future developments and a strategic outlook on future opportunities.

The recent study resulted in the following findings: (1) More than 900 firms in Saxony conduct R&D activities, thereof about 75% continuously, employing more than 10,000 people; (2) business R&D activities remain concentrated on three main sectors: ICT, ma-chine building and R&D services and becoming more concentrated on a smaller number of more continuously active firms. Nonetheless, (4) the development of R&D employment in the SME sector has been stable; (5) the economic crisis has had a limited overall impact, although bankruptcies had to be dealt with; (6) public support for R&D in the business sector was perceived to have had effects; and (7) high export and co-operation intensities in Saxony provide a good basis for future developments.

The report mainly draws on a broad-based, regular survey of above 1,000 regional firms. It is at least the third report of this nature in a row.

- **Report on Technology Development – 2009 (Saxony, DE)**

The Technology Report for Saxony 2009 shows the innovation environment in Saxony as well as its potential and framework conditions. By means of benchmarking, Saxony' position within Germany as well as in an international context is portrayed.

Detailed analyses of individual technology fields as well as the innovation environment and the location as a whole form the foundation for a SWOT analysis that provides orientation assistance for Saxony's technology and innovation policies in order to derive possible development strategies for the innovation capacity and technological performance of Saxony.

Other than the above report, the report is to a large extent based on analyses of secondary statistics, tailored to the needs of Saxony Policy Makers. Among other things, it develops the "Saxon Innovation Index", a composite index with several dimensions which enables a comparison of Saxony's techno-economic performance with that of other German regions.

The report was the first of its kind in Saxony. Recently, a new report with very similar objectives (Report on Technology Development in Saxony 2012) has been commissioned and is currently under development. It will most likely be published in early 2013.

Other than evaluations, none of the two reports develops detailed recommendations for action on the implementation level. Instead, they serve as an independent point of refer-once for regional policy makers in their own considerations. It should be noted, however, that such an extensive, high-quality monitoring does take its time (the reports take about half a year to develop) and comes at a price (more than two consultants will be working in parallel during that period).

In summary, we find that **good evaluation and reliable and valid monitoring are feasible, even if time consuming and somewhat expensive**. On the one hand, some best-practice accounts can to an extent be seen as an expression of an effort to **remain accountable to the regional taxpayer** and regional audit offices. On the other hand, in-depth **external evaluations as well as complex monitoring have to be politically wanted and require the availability of suitable consultants** with both a credible commitment to independent analysis and a good knowledge of the region in question.

2. Regions with strong focus on industrial employment, business and, or public R&D

2.1 Main characteristics of the Regional Innovation System

2.1.1 General characteristics

Regional GDP per capita performance varied widely across the regions with strong focus on industrial employment. In total, there were 37 (out of 101) regions belonging to this group which accounted for GDP per capita higher than the EU average (€23,500) in 2009. The regions with highest GDP per capita were Southern and Eastern (IE) €40,000, Central Denmark Region 38,000, Southern Denmark Region €36,200, South Tyrol (IT) €36,100, and Vorarlberg (AT) €34,600, while the regions which accounted for the lowest GDP per capita were North-west Bulgaria €2,900, North-central Bulgaria €3,100, South-central Bulgaria €3,200, North East (RO) €3,400, and South West (RO) €4,200.

According to the Eurostat most recent data (2011) regional **unemployment rates also significantly differed** across the regions belonging to this group, with the lowest rates recorded in the regions of Zealand (NL) 2.7%, South Tyrol (IT) 3.3%, Burgenland (AT) 3.6%, Vorarlberg (AT) 3.6%, and Lower Austria 4.2%, while the highest rates were registered in the regions of Murcia (ES) 25.4%, the Valencian Community (ES) 24.5%, Castilla-la Mancha (ES) 22.9%, Catalonia (ES) 19.2%, and Central Greece 18.9%.

Based on the 2012 RIS typology, the regions with strong focus on industrial employment can be classified according to the following four groups:

- **Leading regions** – in this group, there are regions from four countries, namely Austria, Belgium, Germany, and Denmark (in total 6 regions). All regions are "leader – low" except Rhineland-Palatinate (Germany) and Flanders (BE) which are ranked as "leader – medium". Among the two German regions which improved their performance are: North Rhine-Westphalia and Rhineland-Palatinate. The other four regions which maintained their performance include: Burgenland (AT), Lower Austria, Flanders (BE) and Central Denmark Region. It is also important to note that none of the regions in this group has actually recorded a decline in terms of innovation performance.

- **Followers** – those regions are identified in 13 countries, notably Austria, Belgium, Czech Republic, Denmark, Spain, Finland, Ireland, Italy, the Netherlands, Portugal, Sweden, and the United Kingdom which makes it a most representative sample of regions across a large number of countries (in total 32 regions). Altogether there are 12 regions ranked as innovation "followers – high"; 9 "followers – medium"; and 11 "followers – low". In terms of trends, 18 regions improved their innovation performance, 9 maintained it, and 5 recorded a decline in the RIS ranking.

- **Moderate innovating regions** – are located in eight countries, such as Sweden, Portugal, the Netherlands, Italy, France, Spain, the Czech Republic, and the United Kingdom (in total 25 regions). This group subsumes the following three sub-groups, notably 13 innovation "moderate – high"; 4 "moderate – medium" and 8 "moderate – low". In terms of trends, 17 moderate innovating regions improved their innovation performance, 5 maintained it, and 3 recorded a decline in the RIS ranking.

- **Modest innovating regions** – are mainly regions from the most recent EU Member States (except capital regions), in addition to five regions from Italy, Greece, and Spain (in total 38 regions). Altogether there are 7 regions ranked as innovation "modest – high"; 13 "modest– medium"; and 18 "modest – low". In

terms of trends, 3 modest innovating regions improved their innovation performance, 28 maintained it, and 7 recorded a decline in the RIS ranking.

The Appendix A contains more detailed information about each individual group of regions.

While the average **BERD in the EU27 accounted for 1.24% of GDP in 2009, BERD in regions with strong focus on industrial employment was much below this level, i.e. 0.63%.** BERD varied significantly across regions in this group, with the highest investment recorded in the regions of Franche-Comté (FR) 2.56%, Wallonia (BE) 1.68%, North West (UK) 1.65%, Basque Country (ES) 1.63%, Rhineland-Palatinate (DE) 1.55%, and lowest in the regions of Warminsko-Mazurskie (PL) 0.02%, Lubuskie (PL) 0.03%, South West (RO) 0.05%, Vest 0.05%, North-central Bulgaria 0.05%, and Podlaskie (PL) 0.05%.

Public R&D investment in the second group of regions accounted for 0.41% of GDP in the same year, compared to the EU27 average of 0.75%. Public R&D investment was highest in the regions of Eastern Finland 1.04%, Central Denmark Region 0.91%, North Rhine-Westphalia (DE) 0.81%, Cantabria (ES) 0.73%, Flanders (BE), Brittany (FR), and Catalonia (ES) all 0.71% of GDP and lowest in the regions of South (RO) 0.03%, Northwest (CZ) 0.04%, Centre (RO) 0.06%, Western Slovakia and North-central Bulgaria both 0.07%.

2.1.2 The short-term perspective, resilience to economic crisis

The financial and economic crisis brought about a sharp drop in sales, resulting in a **large number of layoffs in the manufacturing sector across EU regions.** Since 2008, the industrial sector (except construction) has lost some 3.5m jobs. The regions affected by the redundancies were Catalonia (ES) estimated loss of 182 thous. jobs, the Valencian Community (ES) 87.5 thous. jobs, North Rhine-Westphalia (DE) 80.7 thous. jobs, Centre (RO) 78.8 thous. jobs, and West Midlands (UK) 61.3 thous. jobs. Calculated as the share of current industrial employment, the most affected territories were Murcia (ES) 38.6%, Burgundy (FR) 34.8%, North-west Bulgaria 34.3%, the Aosta Valley (IT) 32.7%, and Catalonia (ES) 32.1%.

The crisis had clearly a severe adverse impact on the EU industry, especially in the group of regions with strong focus on industrial employment. Among the most recent concrete examples of regions concerned by redundancies are: Northern and Central Portugal with 726 redundancies in the automotive industry, Galicia (ES) with 878 layoffs in 35 enterprises in shipbuilding ancillary sector and 703 in 82 enterprises in the textile sector, the Valencian Community (ES) with 876 redundancies in 146 small and medium-sized enterprises in the footware industry, Central Denmark Region with 813 job-losses in the wind turbine manufacturing industry, and Podkarpackie (PL) with 594 layoffs in 3 enterprises in the manufacture of machinery and equipment.

2.1.3 The long-term perspective, investment and development

One would expect that industrial business-oriented regions (the share of business R&D expenditure in GERD 63% plus and total R&D investment exceeding 1% of GDP) would have a better socio-economic performance. We find that 19 out of total 29 business-oriented regions, namely Southern and Eastern (IE), Lombardy (IT), Flanders (BE), Emilia-Romagna (IT), Basque Country (ES), Veneto (IT), Navarra (ES), Piedmont (IT), Lower Austria, Småland and the islands (SE), North Middle Sweden, Pays de la Loire (FR), Aquitaine (FR), Rhineland-Palatinate (DE), Upper Normandy (FR), Border, Midland and Western (IE), Centre (FR), Burgundy (FR), and Bassin Parisien (FR) accounted for GDP per capita above the EU average, which confirms our initial expectations about a positive relationship between the private R&D investment and economic performance.

Despite such a high share of private R&D investment the performance measured in terms of GDP per capita in other 10 business-oriented regions, namely Franche-Comté (FR), Wallonia (BE), Lower Normandy (FR), South West (UK), Picardy (FR), East

Midlands (UK), North West (UK), West Midlands (UK), Northern Ireland (UK) and Northeast (CZ) was below the EU average. It is also important to point out that most of those regions except the latter performed only slightly below the EU average. **Consequently, it can be confirmed that industrial business-oriented regions are likely to have better economic performance due to the existing potential and critical mass.**

Still, there are seven other non-business-oriented regions which account for GDP per capita above the EU average. The underlying characteristic of those regions, including Central Denmark Region, North Rhine-Westphalia (DE), Catalonia (ES), Aragon (ES), Rioja (ES), Brittany (FR), Eastern Finland is that the share of business R&D in GERD is below 63% but they all invest above 1% of GDP in R&D. In the remaining five regions, including Southern Denmark, the Aosta Valley (IT), Middle Norrland (SE), Marche (IT), and South Tyrol (IT) which also perform above the EU average in terms of GDP per capita their R&D investment is below 1%. **It can therefore be concluded that the private R&D investment (discussed above) is not the only source of economic growth. The existing evidence points out that the level of investment and other non-R&D factors may be equally important.**

This finding is further reinforced if we look into recent trends of GDP per capita growth. In total, eight out of 29 business-oriented regions, i.e. Northeast (CZ), Basque Country (ES), Navarra, Southern and Eastern (IE), Flanders (BE), Border, Midland and Western (IE), Wallonia (BE), and Aquitaine (FR) recorded an upward trend above the EU average (23%) during the 2000-09 period. In the case of 16 other business-oriented regions the performance was below the EU average, whereas for the remaining five regions no data was available.

If we look closely at the most recent unemployment rates, we find that the majority of industrial business-oriented regions (22 out of 29) registered unemployment rates below 10% in 2011 (EU27 average: 9.6%). The only six industrial business-oriented regions which recorded higher unemployment rates (above 10%) were Champagne-Ardenne (FR) 10.7%, West Midlands (UK) 11.3%, Basque Country (ES) 12%, Navarra (ES) 12.9%, Southern and Eastern (IE) 14%, and Border, Midland and Western (IE) 15.5%.

While the unemployment rates were fairly stable since 2000 in this group of business-oriented regions, especially three regions registered a significant rise of unemployment, notably Navarra (ES) +7.3%, Southern and Eastern (IE) and Border, Midland and Western (IE) both +10%. **Likewise, as in the case of economic performance measured by GDP per capita, it can be confirms that industrial business-oriented regions are likely to record and maintain sustainable unemployment rates over a period of time. On the other hand, other regions have been able to achieve and maintain the same socio-economic performance as industrial business-oriented regions. This finding confirms the relevance and importance of other sources of growth and jobs.**

In the regions with strong focus on industrial employment from the EU-15 countries we can observe since 2000 peaks of private R&D investment, especially in regions such as: Cantabria (ES), Northern Portugal, Navarra (ES), Centro (PT), Veneto (IT), Castilla y Leon (ES), Galicia (ES), Marche (IT), Basque Country (ES), Rioja (ES), Aragon (ES), Emilia-Romagna (IT) and Murcia (ES). Linking the investment with the socio-economic most recent performance and trends shows some interesting results. **Regions which are already making considerable R&D investment such as Emilia-Romagna (IT), Basque Country (IT), and Veneto (IT) are likely to register and maintain lower unemployment rates as well as higher GDP per capita than regions which recorded peaks of investment but still performed below the critical mass to achieve substantial improvements in socio-economic performance.**

2.2 Regional innovation policy mix

2.2.1 Helicopter view of policy focus

The focus on regional innovation policies in the group of industrial regions is clearly concentrated on two priority areas, notably Priority 2 ('Research and Technologies', e.g. research organisations, science-industry cooperation, and measures in support of business R&D) and Priority 4 ('Enterprises', e.g. support to innovation and entrepreneurship programmes, start-ups and access to finance). The least measures can be found for the Priority 3 ('Human Resources, Education and Skills') and priority 5 ('Markets and Innovation Culture', e.g. fiscal incentives, public procurement, measures in support of IPR, and innovation culture). In terms of budgets, the main result which stands out is a concentration of funding on Priority 2 and similar level of funding for Priority 1 and Priority 4.

Table 2-1 Overview of RIM repository support measures (Group 2), RIM 2012

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as industrial employment, business and, or public R&D regions	27.1%	(103 of 555 measures)
2- Research and Technologies		44.9%	(232 of 555 measures)
3- Human Resources (education and skills)		1.2%	(25 of 555 measures)
4- Enterprises		26.6%	(175 of 555 measures)
5- Markets and innovation culture		0.2%	(20 of 555 measures)
Total		100%	

Source: Own figure based on the RIM repository.

Table 2-2 Overview of RIM repository support measures (Group 2), RIM 2011

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as industrial employment, business and, or public R&D regions	32.9%	(79 of 471 measures)
2- Research and Technologies		32.1%	(205 of 471 measures)
3- Human Resources (education and skills)		1.1%	(23 of 471 measures)
4- Enterprises		33.3%	(131 of 471 measures)
5- Markets and innovation culture		0.2%	(23 of 471 measures)
n/a		0.5%	(10 of 471 measures)
Total		100%	

Source: Own figure based on the RIM repository.

While no significant differences can be found across the RIS groupings of regions in terms of the number of support measures, there are interesting results about concentration of funding per priority (see Table 2-3). More detailed assessment is provided in the following section 2.3 on "Appraisal of regional innovation policies".

Table 2-3 Overview of RIM repository support measures (Group 2), RIM 2012

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as industrial employment, business and, or public R&D regions **leaders**	0.93%	4 of 33 measures
2- Research and Technologies		1.51%	14 of 33 measures
3- Human Resources (education and skills)		0.00%	3 of 33 measures
4- Enterprises		3.65%	11 of 33 measures
5- Markets and innovation culture		0.01%	1 of 33 measures
Change in RIS performance group 2006-10 'leaders'	➕	(2 of 6 regions)	
	↘	-	
	=	(4 of 6 regions)	
RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as industrial employment, business and, or public R&D regions **followers**	11.05%	25 of 191 measures
2- Research and Technologies		15.85%	82 of 191 measures
3- Human Resources (education and skills)		0.96%	11 of 191 measures
4- Enterprises		6.37%	67 of 191 measures
5- Markets and innovation culture		0.14%	6 of 191 measures
Change in RIS performance group 2006-10 'followers'	➕	(18 of 32 regions)	
	↘	(5 of 32 regions)	
	=	(8 of 32 regions)	
RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as industrial employment, business and, or public R&D regions **moderate**	12.13%	30 of 142 measures
2- Research and Technologies		16.31%	67 of 142 measures
3- Human Resources (education and skills)		0.20%	10 of 142 measures
4- Enterprises		2.84%	32 of 142 measures
5- Markets and innovation culture		0.05%	3 of 142 measures
Change in RIS performance group 2006-10 'moderate'	➕	(17 of 25 regions)	
	↘	(3 of 25 regions)	
	=	(6 of 25 regions)	

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as industrial employment, business and, or public R&D regions **modest**	2.99%	44 of 189 measures
2- Research and Technologies		11.21%	69 of 189 measures
3- Human Resources (education and skills)		0.01%	1 of 189 measures
4- Enterprises		13.78%	65 of 189 measures
5- Markets and innovation culture		0.02%	10 of 189 measures
Change in RIS performance group 2006-10 'modest'	➕	(3 of 38 regions)	
	↘	(7 of 38 regions)	
	＝	(28 of 38 regions)	

Source: Own figure based on the RIM repository.

2.2.2 Trends in the policy mix

With a view to the changes that have taken place in the course of the last three years (since 2010), the re-design and launch of new cluster framework policies is one of the most important trends. Increasingly more attention has been also given to measures in support of research organisations, science-industry cooperation, and measures in support of business R&D, support to innovation and entrepreneurship programmes, start-ups and access to finance.

In relation to the last year's report, it can be noted that in terms of percentage the focus across the five main priority areas remained largely the same. It is also important to note an increase in budget contribution for Priority 2 ('Research and Technologies') as presented in Table 2-1.

Despite some new initiatives launched in 2012 (e.g. Liverpool Echo / Aspire Fund, Derby City Council Regional Growth Fund Scheme, Regenerate Pennine Lancashire programme in the UK), many regions in the current economic situation were actually cutting down on the number of measures in support of innovation. The two most notable examples include the developments in the Dutch and Spanish regions. In the case of the former, the national government ceased co-funding of regional innovation policy and is distributing the already diminished amount of money by means of tax credits and national priority programmes (topsectors); and the EU funding is at the end of a programming period. Furthermore, regional innovation budgets themselves are under pressure since the economic crisis has made the national government decrease the income for provinces. In the Spanish regions, some support measures remain in an uncertain situation and although they are not formally cancelled the future allocation of budget to them is not decided. In addition, the recent developments in Hungary have led to further centralisation of innovation policy, which has resulted in the closure of regional development councils and the discontinuation of funding of many regional innovation policy support measures.

2.3 Appraisal of regional innovation policies

2.3.1 Relevance of current innovation policies

It goes without saying that policies should be tailored exactly according to the individual characteristics and challenges of specific regions. In other words, provisions of public innovation support with little relevance will simply become eventually a cost and not an investment stimulating growth and jobs. This is certainly an open question to what extent the ongoing innovation support measures in the RIM repository for a large group of industrial regions are actually relevant.

One very obvious and important observation is that most of the existing measures are dedicated to the Priority 2 ('Research and Technologies' and Priority 4 ('Enterprises'). The low number of measures found for the Priority 3 ('Human Resources, Education and Skills') and Priority 5 ('Markets and Innovation Culture') suggests that these two specific forms of support are not on the radar in this particular group of regions. However, it needs to be taken into account that we should be able to find promising initiatives aimed at the development of skills for innovation especially in regions with competences in education policy. This is the essential information which should not be overlooked by regions. The same comment holds true for demand-side policies and here it is worthwhile to point the reader to the related material, i.e. Thematic paper 4 available on the RIM public website.

The relatively higher percentage of measures in moderate and modest industrial regions in the Priority 1 ('Governance & horizontal research and innovation policies') deserves to be positively assessed, however, the challenge will be to give priority to provide support for improving policy making, developing effective cluster policies, and linking research to promote innovation in traditional industries.

The closer look into thematic areas of regional innovation policy support measures will actually allow us to say more about the relevance of current innovation policies.

Based on the analysis of forms of innovation support (see Table 2-4), it can be noted that there are 10 priorities in industrial regions which accounted for the average higher than the total EU average and 15 for which the average was below. This actually means that relatively more measures than the EU average was found in support of business angels, climate change, cluster, entrepreneurship, fiscal incentives, incubators/science parks, innovation culture, innovation support services, research infrastructure, and universities. Among the measures below the EU average was support for applied business research, early stage-financing, eco-innovation, gazelles, innovation in the service sector, innovation networks, innovation vouchers, knowledge transfer, new technology-based firms, public-private partnership, science-industry cooperation, service, skills for innovation, small and medium-sized enterprises, and start-ups/spin-offs.

Perhaps one of the most positive aspects that can be observed is that the entrepreneurship in on average the most representative form of support in the group of industrial regions. Applied business research is given less attention than the average result for all three main RIM group of regions, which can be also positively assessed as for many regions in this group other forms of support than those aimed at stimulating R&D investment would be more pertinent. On average, cluster policies can be found in every second region which confirms that such instruments are popular and considered as a relevant policy response to the existence of weak linkages between the different innovation stakeholders. While for some specific region the challenge will be mostly about improving local linkages, in others cooperation with the actors outside the region would be the most beneficial. There is also a continued support for incubators and science and technology parks, other innovation intermediary organisations, research infrastructure, fostering science-industry cooperation projects, which given the situation in many regions, in particular from the most recent EU Member States the choice of such policies can be considered as justified. The relatively lesser focus on new technology-based firms, start-ups/spin-offs makes sense as for many industrial regions the support to the existing companies should be considered as priority. This is not to say that support to the newly established companies is not relevant at all. On the contrary, they can be also important sources of innovation breakthroughs of strategic importance to a large number of existing companies, therefore requires some attention.

A less favourable view of the general absence of public-private partnerships and international cooperation emerges. Particularly, the latter can lead to lock-ins influencing the regional development in long-term. The regions in this group also do not seem to pay sufficient attention to the other forms of support like innovation vouchers, and gazelles. It should be added as a caveat high priority given to

universities and lesser attention in the area of improving the skills for education than in the two other main groups of regions. Consequently, there is a threat that support will be concentrated on the supply-side policies.

The results of policy effectiveness will be discussed in a next section which deals with the actual appraisal of regional innovation policies.

Table 2-4 Main forms of innovation support (Group 2)

Form of support	Mean scores
Applied business research	0.50
Business angels	0.06
Climate change	0.13
Cluster	0.51
Early stage-financing	0.31
Eco-innovation	0.17
Entrepreneurship	0.91
Fiscal incentives	0.05
Gazelles	0.11
Incubators/science parks	0.25
ICT	0.00
Innovation culture	0.48
Innovation in the service sector	0.13
Innovation networks	0.45
Innovation support services	0.65
Innovation vouchers	0.08
IP rights	0.00
International cooperation	0.00
Knowledge transfer	0.71
New technology-based firms	0.13
Public-private partnership	0.24
Research infrastructure	0.49
Science-industry cooperation	0.77
Service	0.02
Skills for innovation	0.59
Small and medium-sized enterprises	1.35
Start-ups/spin-offs	0.46
Universities	0.44

Source: Own figure based on the RIM repository. Above EU average in green, below in red.

2.3.2 *Effectiveness of innovation policies and availability of evidence-based assessments*

Altogether there are 122 out of 555 support measures (21.9%) in the group of industrial regions with the evaluation and/or another form of assessment being carried out, which is similar to the result taking into account all (1,081) support measures in the three main group of regions analysed in this report. In the two most representative policy priorities, notably Priority 2 ('Research and Technologies'), and Priority 4 ('Enterprises') evidence-based assessments were identified for 20.3% and 24% of measures, respectively.

Table 2-5 Available evidence-based assessments and share of good practices (Group 2)

RIM measure priorities	Focus Group	Measures with evidence-based assessments		Measures considered as good practice	
1- Governance & horizontal research and innovation policies	regions classified as industrial employment, business and, or public R&D regions	30.1%	31 of 103 measures	69.9%	72 of 103 of measures
2- Research and Technologies		20.3%	47 of 232 measures	55.6%	129 of 232 of measures
3- Human Resources (education and skills)		8.0%	2 of 25 measures	60%	15 of 25 of measures
4- Enterprises		24.0%	42 of 175 measures	53.1%	93 of 175 of measures
5- Markets and innovation culture		0.0%	0 of 20 measures	35%	7 of 20 measures

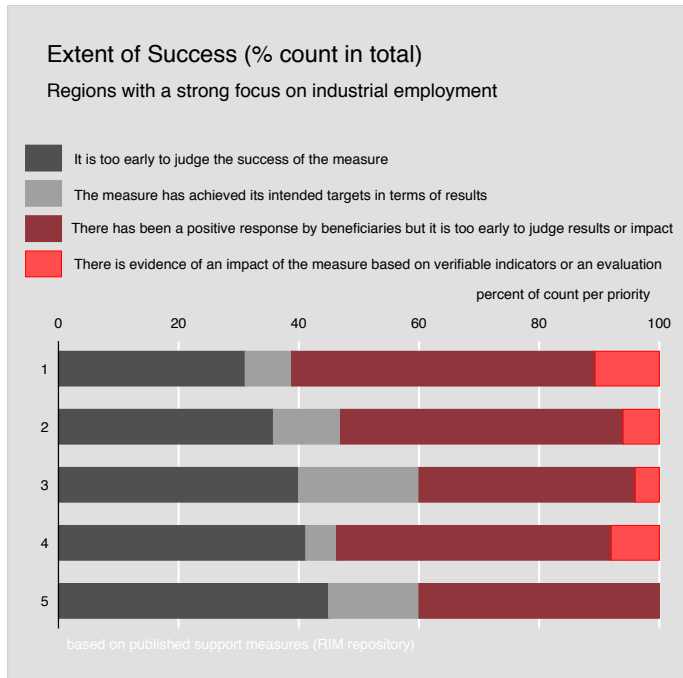Source: Own figure based on the RIM repository.

Concerning the indication of good practice, the assessment provided by the RIM network of correspondents shows rather a positive picture. In the group of industrial regions, the share of measures considered as good practice is actually the lowest among the three main groups and is estimated at 57%. The results per priority also shows that most of good practices were found in Priority 2 ('Research and Technologies), and Priority 4 ('Enterprises') with 129 and 93 out of 555, respectively.

The low effectiveness on innovation support measures in the group of industrial regions continues to be an issue that should be tackled in the new innovation programmes. The RIM repository data suggests that 16.4% of measures in this group of regions which represent 91 out of 555 support measures has achieved its intended targets in terms of results or had an impact. For 37.1% of support measures, it is too early to judge the success and for the remaining 46.5% it can be said that there was a positive response by beneficiaries but it is too early to judge results or impact. Comparatively, the percentage of measures that achieved its intended targets in terms of results or had an impact estimated in the previous RIM (2011) Annual Report was slightly better estimated at 20.4%. This can be mainly explained by the number of new measures entered into the RIM repository which did not receive such favourable assessments. It can therefore be concluded that the situation is not worsening, however, it is certainly not improving. Figure 2-1 shows that the Priority 3 ('Human Resources, Education and Skills') accounted for the highest share of measures with overall favourable assessments, although there are still few measures for which there is evidence of an impact. It is also important to point out to a relatively low number of support measures in this area, in general. Comparatively, the most favourably assessed priorities of the three most representative priorities are as follows: Priority 1 ('Governance & Horizontal Research and Innovation Policies) 18.4%, Priority 2 ('Research and Technologies') 17.2%, and Priority 4 ('Enterprises') 13.1%.

Overall, the existing evidence for the group of industrial regions suggests that more measures (in relative terms) which achieved its intended targets in terms of results or had an impact of the measure based on verifiable indicators can be found in regions

referred to the RIS as leaders than in any other group. The share of such measures is progressively decreasing along the RIS classification, i.e. followers – moderate – and modest.

Figure 2-1 Assessments of measures by priority field (Group 2)

Source: Own figure based on the RIM repository.

2.3.3 Identification of credible actions

Based on the existing evidence, the following observations can be drawn. Firstly, the low effectiveness of innovation support measures needs to be addressed, in order to be able to achieve better outcomes and impacts of public programmes in support of innovation. Secondly, the indication of good practices appears surprisingly quite high (57%), although there is stark difference between industrial leaders and modest innovator it is something that we would have expected. The point we are trying to make is that the debate should go beyond whether it is sensible to speak about good practices or not. Rather than this, more value added could be expected if we manage to pinpoint to credible actions which is explored in more detail below.

Linking innovation performance and policies is a complex phase of learning, which requires a robust evidence base to make a synthesis. Policies aimed at stimulating innovation activities should both have short-, and medium-term positive effects on innovation performance and bring also long-term desirable structural changes into the innovation systems. However, it is true that change in the actual performance does not always happen linearly especially in the area of innovation. For instance, regional endowments such as density of innovation networks, unique combination of entrepreneurs but also governance aspects and many other factors play an important role, all affecting the overall innovation performance. For the purpose of this report, we focused on a selected group of regions which recorded an upward in their innovation performance during the period 2006 and 2010 measured by the RIS 2012 composite indicator capturing regional innovation performance and looked into some additional regions which maintained relatively sound performance over the same period. This will subsequently enable us to identify credible actions and benefits that have arisen as a result of policy actions and relevant practices beyond policy support measures in specific regions.

Which **industrial leading regions** have in the past successfully addressed their local challenges? Which particular policy mixes have proven well adapted to the regional situation? Has the mix of policies/regional strategy been determined in a participatory process? What experiences have been made with such processes?

There are altogether two industrial leading regions, namely North Rhine-Westphalia and Rhineland-Palatinate (DE), which improved their innovation performance and where positive assessments of innovation support measures can be identified.

- **Example: ExzellenzNRW Cluster (North Rhine-Westphalia, DE)**

In terms of policy responses in North Rhine-Westphalia, it is important to point out to the following key policy support measure, namely ExzellenzNRW – Cluster North Rhine-Westphalia. The cluster policy of the state of North Rhine-Westphalia plays an important role as it promotes cooperation between companies, research institutions and public support along value chains in 16 industries and technology fields. The most important success factors which contributed to gaining special momentum for growth and innovation are the intensive collaboration among the actors and professional cluster management. Launched in 2007, the 'Leading-Edge Cluster Competition' which is a national competition gave an additional boost for high-performance clusters. In total, up to €200m was made available to up to five Leading-Edge Clusters. Among the five winners of the 2012 competition was one North Rhine-Westphalian cluster in the area of mechanical engineering, electrical/electronics industry and automotive supply industry, known as the "it's OWL - Intelligente Technische Systeme OstWestfalenLippe".

It should be noted, however, that the cluster policy only plays the role of one element in the broad innovation policy mix of North Rhine-Westphalia. Among other important policy actions are e.g. legislative changes aimed at enabling higher education institutions to operate more entrepreneurially and to intensify knowledge transfer to industry. As outlined above, moreover, other factors beyond policy play an important role and influenced the innovation performance of North Rhine-Westphalia. It has to be remembered that North Rhine-Westphalia has one of the densest higher education and public research landscapes throughout Europe and that almost one half of the 50 largest German companies are headquartered in the region.

- **Example: FiTOUR programme – Funding of innovative technology-based business formation and the Fund for Innovation and Employment (FIB) GmbH (Rhineland-Palatinate, DE)**

In Rhineland-Palatinate, positive assessments were identified for several different support measures. One of the concrete examples is the FiTOUR programme – Funding of innovative technology-based business formation, which is aimed at encouraging and supporting entrepreneurs to establish their own innovative technology-oriented company. The underlying characteristic of this form of support is its flexibility as the programme allows its beneficiaries to combine different types of support, such as training and consulting support, spin-off promotion, promotion of services and goods in the forefront of business start, and support for market entry.

Another interesting support measure is the Fund for Innovation and Employment (FIB) GmbH which provides venture capital for SMEs. To strengthen the innovation and performance of the SMEs sector, Rhineland-Palatinate also provides financial support for the recruitment and employment of innovation assistants, who have completed a university degree with a technical and scientific orientation.

The state of Rhineland-Palatinate host several outstanding research units as well as research clusters (e.g. in information and communication technology, automotive technologies) which in addition to its innovation policy support naturally must have an influence on the overall innovation performance.

Which **industrial followers** have in the past successfully addressed their local challenges? Which particular policy mixes have proven well adapted to the regional situation? Has the mix of policies/regional strategy been determined in a participatory process? What experiences have been made with such processes?

Within the group of industrial followers with positively assessed policy instruments and which improved their innovation performance according to the RIS index, there are such regions as Aragon (ES), Border, Midland and Western (IE), Emilia-Romagna (IT), and Småland and the islands (SE), Limburg (NL), and the North West (UK).

- **Example: Cross-Border Cooperation Agreements and the Technological Voucher (Aragon, ES)**

In Aragon, the most noteworthy examples of promising support measures are the Cross-Border Cooperation Agreements with the Regional Councils of Midi-Pyrenees and Aquitaine and the simplicity of access to the Technological Voucher, which is aimed at helping companies to contract institutes /university research groups of Aragon, in the framework of RTD projects involving the incorporation of new knowledge and/or technologies to innovate in a product, production process or service. Among the other regional assets (beyond the policy support measures) is the strategic location of the region which has attracted a large number of investments in recent years.

- **Example: The Programme of Research in Third Level Institutions and Applied Research Enhancement programme (Border, Midland and Western, IE)**

The Programme of Research in Third Level Institutions (PRTLI) and Applied Research Enhancement programme (ARE) are viewed to be successful policy support measures. While PRTLI has been central to the rapid development of R&D in HEIs and the transformation to an innovation driven economy, ARE was restructured in 2008 to increase effectiveness, widening its capacity to enhance IoT research capability and providing continued funding for those centres demonstrating capacity to work with industry. Overall, the availability of independent evaluation could be also identified. The BMW region is home to world recognised economic clusters in medical devices and software.

- **Example: Dynamism Clusters and Knowledge and Innovation (Småland and the Islands, SE)**

In Småland and the islands, several small-scale successful initiatives, such as Dynamism in Smålands Clusters (DISK) and Knowledge and Innovation in Småland (KIS) can be found, which aims to enhance triple helix cooperation and implement the idea of 'scouting' in firms and organisations to increase the contact between firms and organisations and students, teachers and researchers.

Other non-policy factors which are most likely have contributed to achieving better innovation performance are the presence of several relatively young universities, e.g. Jönköping University and Gotland University, strong entrepreneurial tradition and presence of well established clusters. As background information, the universities of Kalmar and Växjö (Kronoberg) were merged in 2010 into the new Linneaus University.

- **Example: Peaks in the Delta, Southeast (Limburg, NL)**

In Limburg, Peaks in the Delta: Southeast is considered among the measures which have achieved its intended targets in terms of results. Peaks supported are: high-tech systems and materials, food and nutrition and medical technology and life sciences. The existing evidence suggests that the cooperation between companies and research organisations has improved. Among the regional specific assets is it also important to mention the Chemelot campus in Geleen ('the chemical innovation community') and various intermediary organisations with Syntens supporting innovation in companies.

- **Example: Manufacturing Advisory Service (North West, the UK)**

In the Northwest, the combined qualitative and quantitative evidence suggests that Manufacturing Advisory Service - North West which is designed to help the manufacturers streamline their processes, reduce waste, become more energy efficient and generally improve and grow their business 'worked' and was well received by the sector and its target market. The region is also home to 14 universities including a number of research intensive institutions with strengths in science and technology fields (such as the Universities of Manchester, Liverpool and Lancaster). Besides that, the region now has the largest concentration of advanced manufacturing and chemicals production in the UK (Lancashire and Cheshire) and is home to the largest media hub outside of London (Manchester). The region is home to major global manufacturing companies such as BAE Systems, Unilever and Astra-Zeneca.

Which **industrial moderate regions** have in the past successfully addressed their local challenges? Which particular policy mixes have proven well adapted to the regional situation? Has the mix of policies/regional strategy been determined in a participatory process? What experiences have been made with such processes?

The positive assessments of innovation policy support instruments were also identified in the group of **industrial moderate regions** which increased their innovation performance based on the RIS methodology. Most promising support measures can be found in the following regions, notably Drenthe, and the Centre.

- **Example: Bearing North, on the way to 'Peaks', Sustainable Growth by transition to a knowledge economy (Drenthe, NL)**

In Drenthe, we found that there is evidence of an impact of Bearing North, On the way to 'Peaks', Sustainable Growth by transition to a knowledge economy' which aims at strengthening the (inter)national competitive position of the Northern provinces. In general, local governments and others involved were enthusiastic about the measure. It was deemed to reinforce the execution of the provincial and municipal economic policy. The appointed 'peaks' were considered to be recognizable sectors, which already had the regional policy's attention. PiD ensured focus necessary to organise cooperation at the regional level. Drenthe has a relatively low research and development (R&D) intensity compared to other Dutch provinces. In terms of regional strengths, sensor technology is most prominently represented in Drenthe. Major companies in this area are Dacom (global leading developer/supplier of production process monitoring systems for agriculture companies) and Rohill (communication technology).

- **Example: Support for regional competitiveness clusters (Centre, FR)**

In the Centre, we found evidence of an impact of Support for regional competitiveness clusters which aims to promote the creation of innovation and R&D projects by means of collaboration between these types of actors. The regional support has allowed to strengthen the levels of cooperation among innovation stakeholders (business sector, research institutions, higher education institutions) which were traditionally considered as being isolated from each other. The funding provided has allowed to mobilise an important number of actors, and particularly SMEs, around a diversity of projects. Centre region welcomes several competitiveness clusters (Cosmétic Valley, Elastopole, Dream, S2E2).

In summary, one of the most important lessons learnt from the examples above is that **intensive collaboration among the actors and professional cluster management** allows successfully addressing the region specific challenges. With the national support it is possible to provide further boost by topping up the available regional funding. Another important aspect is the **flexibility of innovation public support programmes**. As a result those programme naturally become tailored-made responding actual needs of potential beneficiaries. The existing evidence also shows that a **programme based on successful experiences from the past** is certainly one of the key success factors. The example of **cross-border cooperation**

and the simplicity of access to public support points out the importance of undertaking credible actions both locally as well as in partnership with other regions. **Visits in firms and organisations** can be used as a concrete action, the main benefit of which is the increase of contacts between the different stakeholders of the innovation system. Improving science-industry cooperation can be achieved by **providing funding for strategic priority areas.** The public support is mainly about providing meaningful responses to the actual barriers encountered by the different actors of the innovation system. One of such concrete examples is the support provided to the manufacturing industries to **help become more energy efficient and generally improve their growth**.

With regard to organisations and institutions

Are there good practices in terms of regional organisational set ups of funding agencies in **industrial leading regions**?

- **Example: The Growth Forum and VÆKSTmidt Accelerator (Central Denmark Region)**

In the Central Denmark Region which maintained its position on the RIS composite indicator as "leader low", we could identify positive assessment of the Growth Forum initiatives. The latest available evaluations of the Growth Forum's performance indicate that the measure has achieved its intended targets. One of the recent flagship projects is the VÆKSTmidt Accelerator (2009-2012) programme, which is a further development of the regional business development programme VÆKSTmidt (2007-2009) targeted at SMEs with international growth potential. In summary, the programme is based on successful experiences from the past with advice and network packages and includes specialised advice as well as targeted skills development and networking courses. A new feature of the programme is that companies with a great potential are offered a growth package. Overall, the Growth Forum represented by the main local and regional stakeholders plays an important role in developing a long-term regional development strategy. It is also important to mention that the Central Denmark Region is home to a number of leading companies in the food sector. Arla Foods, a global dairy company, and Danisco, a food ingredient company specialising in sweeteners and sugar are concrete example. The region is also home to Vestas, the biggest manufacturer of wind turbines in the world, and Grundfos, a manufacturer of pumps and other industry machines.

Are there good practices in terms of regional organisational set ups of funding agencies in **industrial followers**?

- **Example: The Catalan Agency for Competitiveness (ES)**

The Catalan Agency for Competitiveness, known also as the ACC1Ó and a number of sectors with a significant level of industrial activity are among the main factors that have an influence on the innovation performance in the region.

In Catalonia, which is much larger region in terms of population (i.e. more than 7 million inhabitants) we find other examples of successful innovation policy support measures (e.g. Innovative Enterprise provides financial support for individual innovation projects carried out by SMEs, R&D Collaborative Projects has the objective to solve existing problems in a particular sector, which cannot be solved by a single company but through the collaboration with other companies in the same sector, and Seventh Framework Programme R&D projects supports the participation of Catalonia's stakeholders in FP7).

- **Example: The Technologic Development Network and close cooperation within the Assistance to competitiveness clusters and (Brittany, FR)**

One of the key factors which provide an explanation about the innovation performance is the existence of a Technologic Development Network (RDT) with 90 organisations gathering most of the innovation actors in the region and dynamic RDTI intensive sectors, such as the naval, telecommunications, automobile and food industries. The success of support measure known as the 'Assistance to competitiveness clusters' is explained by overall good coordination, one entry point for the beneficiaries, high degree of trust, mutual understanding, and close collaboration between the Regional Council and the central government.

- **Example: Regional Innovation Fund (Franche-Comté, FR)**

In Franche-Comté, which is one of the French regions with the lowest number of staff and lowest level of investment in public R&D, the Regional Innovation Fund is considered to be a successful and a unique innovation policy support instrument in France bringing together the OSEO Regional Office, the Regional Council, as well as the departments and urban communities composing the region. Among one the emerging policy trend is continued improvement of public support for innovation through creation of a single point of contact for innovation, whose role would be to direct companies to the relevant organisations. Besides that, the region hosts four competitiveness clusters, in the fields of microtechnology (Pôle des Microtechniques), transport (Pôle Véhicule du Futur), food (Vitagora), and plastics industry (Plastipolis).

- **Example: The High Technology Network, ASTER, and Design2 innovate (Emilia-Romagna, IT)**

In Emilia-Romagna which is one of the most developed regions in Europe, the High Technology Network, the activities of ASTER Science Technology Business, a consortium for industrial research, technology transfer and innovation created between Emilia-Romagna regional government, local universities and other regional and national stakeholders together with a favourable environment for businesses are among the main success factors. We also find evidence of positive assessment for the Spinner 2012 programme which is aimed at preparing young people to undertake research and technological innovation activities. Since 2000 the Spinner consortium received 2,572 valid applications, out of which 375 were innovative business ideas, 919 projects concerning technology transfer and 119 projects on organisational innovations.

- **Example: The Growth Forum and Design2 innovate (Southern, Denmark)**

Southern Denmark is a concrete example of region, which maintained its innovation performances and for which positive assessments of innovation institutional set-up could be identified. In Southern Denmark, the Growth Forum has been positively assessed. One of the recent flagship projects is Design2 innovate which aims at helping small and medium sized companies in the region developing and increasing their business through design. Based at the Kolding School of Design, the project offers consultations, guidance and cradle to cradle programmes for companies. It is also important to be noted that the region's strengths within innovation is within user-driven innovation, a well-developed network structure between companies in the region and the decentralised structure of the University of Southern Denmark.

- **Example: The Science, Technology and Innovation Network, and ETORGAI (Basque Country, ES)**

The Basque Government has promoted and supported the Basque Science, Technology and Innovation Network (RVCTI) to develop a market and client-oriented smart technological infrastructure for complementary and coordinated networking. It aims at providing an integrated, sophisticated and specialised technology offer to the Basque business sector. ETORGAI is one of the programmes which was positively

assessed. It provides funding for experimental development and industrial research projects in strategic areas of the future. Particularly, two aspects are important to be mentioned, notably the fact that the measure reinforces the relations between private companies and technological centres of the RVCTI, since a minimum amount of 20% of the budget as sub-contracting to these centres is compulsory as well as active promotion to gain a greater acceptance in the last (2012) call for proposals. It is also important to note that the Basque Country stands as one of the most important industrial concentrations in Spain.

Are there good practices in terms of regional organisational set ups of funding agencies in **industrial moderate region**?

- **Example: The Galician Innovation Agency and Innovative Investment for Business Growth (ES)**

The Galician Innovation Agency (established in April 2012 replacing the former Directorate General for Research, Development and Innovation) plays a pivotal role as it is responsible for the drafting, management, coordination and control of the Galician Research, Development and Technological Innovation Plan (PGIDIT).

One of support measures which achieved its intended targets in terms of results was Innovative Investment for Business Growth which provides funding for the investment in specific equipment for the development of innovative products, services or processes. Last calls in 2011 and 2012 received over 167 proposals from which 64 where funded. In economic terms, this means more than €14m investment directly related to activities of innovation in the private sector. It is also important to note that Galicia hosts a wide network of private non profit organisations such as centres for private research (e.g. AIMEN, GRADIANT), technological platforms (CTAG, PTGAL), clusters (CLAG, ACLUNAGA, ANFACO), and other private societies.

- **Example: The Economic Development Agency and support for promotion of research, development and innovation (Rioja, ES)**

In Rioja, the measure for which we found evidence of an impact is Support for promotion of research, development and innovation through a competitive tender process, which aims to stimulate the implementation of research, development and technological innovation projects among regional companies. The most positive factor of success of this measure is the easy access that companies of La Rioja have to ADER (Economic Development Agency of La Rioja). Moreover, consultant engineers of ADER have appointments with companies to motivate them (and offer advise) to submit proposals to the corresponding calls. Overall it is important to note that efforts are being directed to innovate in traditional industry.

- **Example: Support for regional competitiveness clusters (Centre, FR)**

In the Centre, we found evidence of an impact of Support for regional competitiveness clusters which aims to promote the creation of innovation and R&D projects by means of collaboration between these types of actors. The regional support has allowed the region to strengthen the levels of cooperation among innovation stakeholders (business sector, research institutions, higher education institutions) which were traditionally considered as being isolated from each other. The funding provided has allowed to mobilise an important number of actors, and particularly SMEs, around a diversity of projects. Centre region welcomes several competitiveness clusters (Cosmétic Valley, Elastopole, Dream, S2E2).

With regard to evaluation and monitoring

What type of evaluation has taken place in **regions with a strong focus on industrial employment**? Why are many of the existing support measures still evaluated so little, irregularly and/or superficially?

- **Example: Regional Innovation Agency – SEINARI (Upper Normandy, FR)**

Launched in 2009, the Regional Innovation Agency "SEINARI" as a joint initiative of the national-, regional authorities, and Oséo provides innovation support to enterprises. Among the main objectives of the Agency are to bring together the different regional innovation actors, promote the concept of innovation, and reinforce both the coherence and effectiveness of public actions in support of innovation in enterprises. The SEINARI provides support both for the creation of new and development of innovative enterprises. It brings together 130 members from 40 different organisations, which on the annual basis result 2.500 visits by enterprises, 150 innovative project being supported, 20 new innovation companies being established, provision of financial support for the total amount of €8m. In 2011, an evaluation to assess the actions undertaken by the Agency was launched. Among the foreseen actions were continuous updating of knowledge of project leaders, reinforcement of seed and incubation phase, raising awareness actions, and identification of potential R&D results obtained by the labs to stimulate the flow of innovative projects.

- **Example: Peaks in the Delta East Netherlands**

Since 2004 there is a regional component within national RTDI policy that is focused on turning existing regional strengths into economic 'peaks' of worldwide recognition. In East Netherlands, these Peaks are formed by innovative clusters around the three universities of East Netherlands: Wageningen University and Research Centre, University of Twente en Radboud University.

The 2010 evaluation of the PiD programme found it to be effective, or at least, on its way towards being effective in the future.. Up to October 2009 almost €200m was used to fund 244 projects. Despite a slow start, it was expected that by the end of 2010 all funds would be allocated (€296m). The first short-term effects were already visible: improved cooperation and knowledge sharing between government, institutions and companies, strengthening of the connection between education and labour market, and the development of new products and services. Expectations were high concerning the long-term effects: better trained and qualified staff, the establishment of new companies, and the realisation of high qualitative and competitive products and services. Applicants rate the measure's level of incentive to be very high: they indicated that without the measure, they wither would not have started their projects, or if they would have, it would have been later in time and with less ambition. In general, local governments and others involved were enthusiastic about the measure. It was deemed to reinforce the execution of the provincial and municipal economic policy. The appointed 'peaks' were considered to be recognizable sectors, which already had the regional policy's attention. PiD ensured focus necessary to organise cooperation at the regional level.

In summary, **strong regional innovation agencies with functional networks** gathering most of the innovation actors in the region are among the key factors that play an important role in improving innovation performance. Finally, **evidence-based assessments** allow streamlining innovation-dedicated programmes and improving governance aspects.

3. Regions with a focus on the service sector and public R&D (Group 3)

3.1 Main characteristics of the Regional Innovation System

3.1.1 General characteristics

Regional GDP per capita is remarkably heterogeneous as the performance of regions ranged from as low as €3,700 in North-east Bulgaria to €59,800 in Brussels Capital Region. Almost 60% of regions have a per capita lower than the EU average (€23,500) in 2009. Other regions with high GDP per capita (above €40,000) include Aland (FI), Bremen (DE), Groningen (NL), Hamburg (DE), London (UK), Nord–Pas-de-Calais (FR) and Utrecht (NL). Other regions with low GDP per capita (below €10,000) include Opolskie (PL), South-west Bulgaria and Western Pomerania (PL).

Unemployment rates also significantly differed across the regions belonging to this group, with the lowest rates recorded in the regions of Salzburg (AT) 2.5%, Prague 3.6% and Utrecht (NL) 3.8%, while the highest rates were registered in the regions of Extremadura (ES) 25.1%, Canary Islands (ES) 29.7% and Andalusia (ES) 30.4%.

Based on the 2012 RIS typology, the regions with a strong focus on the service sector and public R&D can be classified according to the following four groups:

- **Leading regions** – including 11 regions from six countries, namely Belgium, Czech Republic, Germany, the Netherlands, Portugal and Sweden. Only Hamburg (DE) is a "leader – high", the other regions are either a "leader – medium" or "leader – low" innovation regions. In total eight regions improved their performance, only Brussels Capital Region, Utrecht (NL) and South-Holland (NL) did not.

- **Followers** – including 25 regions from nine countries, namely Austria, Denmark, France, Germany, Greece, Italy, the Netherlands, Spain and the UK. There are 13 regions ranked as innovation "followers – high", 7 as "followers – medium" and 5 as "followers – low". In terms of trends, 14 regions improved their innovation performance, 8 maintained it, and 4 recorded a decline in the RIS ranking.

- **Moderate innovating regions** – including 15 regions from eight countries, namely France, Hungary, Italy, Poland, Portugal, Romania, Slovakia and Spain. This group subsumes three sub-groups: 8 innovation "moderate – high", 4 "moderate – medium" and 3 "moderate – low". In terms of trends, 9 moderate innovating regions improved their innovation performance, 4 maintained it, and 2 recorded a decline in the RIS ranking.

- **Modest innovating regions** – including 20 regions from six countries, namely Bulgaria, Greece, Italy, Poland, Portugal and Spain. Altogether there are 10 regions ranked as innovation "modest – high", 8 as "modest– medium" and 2 as "modest – low". Of these regions 10 have improved their innovation performance, 9 maintained it, and only region South-west (BG) recorded a decline in the RIS ranking.

The Appendix A contains more detailed information about each individual group of regions.

Overall, BERD in regions with a strong focus on the service sector and public R&D accounted for 0.61% of GDP in 2009 which was much below the EU27 average of 1.24%. BERD intensities also vary significantly across regions, with the highest investment recorded in the regions of Hamburg (DE) 1.28%, Lisbon 1.32%, North Denmark Region 2.46% and Zeeland (DK) 3.38%, and lowest in

the regions Madeira (PT) 0.03%, Western Pomerania (PL) 0.03%, Algarve (PT) 0.07%, Sardinia (IT) 0.07%, Corsica (FR) 0.08%.

Comparatively, public R&D investment accounted for 0.77% of GDP in the same year, compared to the EU27 average of 0.75%. Public R&D investment was highest in the regions of Upper Norrland (SE) 2.15%, Languedoc-Roussillon (FR) 1.85%, Bremen (DE) 1.57%, Prague (CZ) 1.39% and Mecklenburg Western Pomerania (DE) 1.20%, and lowest in the regions of North-east Bulgaria 0.21%, Corsica (FR) 0.22% and Madeira (PT) 0.25%.

3.1.2 The short-term perspective, resilience to economic crisis

The regions with a strong focus on the service sector and public R&D affected most by a large number of job losses in the industrial sector were London 86,000 jobs, Attiki (GR) 64,600 jobs, Andalusia (ES) 64,400 jobs, Tuscany (IT) 56,600 jobs, Campania (IT) 51,500 jobs, the Community of Madrid (ES) 51,100 jobs, Scotland (UK) 48,900 jobs, South-west Bulgaria 43,100 jobs, Yorkshire and the Humber (UK) 42,800 jobs and Mazovia (PL) 41,000 jobs. In relative terms, i.e. as a percentage share of their 2008 industrial employment, the most affected regions are Canary Islands (ES) -34.8%, Anatoliki Makedonia, Thraki (GR) -33.9%, London, 32.9%, Thessaly (GR) -31.9%, Kriti (GR) -28.6%, Attiki (GR) -25.7% and Algarve (PT) -25.2%.

With 61 regions loosing almost 1 million industrial jobs, the impact of the crisis is deep. But at the same time 11 regions did manage to increase industrial employment with almost 50,000 jobs since 2008, in particular Languedoc-Roussillon (FR) with an increase of 12,900 jobs (+15.6%), Alsace (FR) +7,300 jobs (+4.4%), Saarland (DE) +5,000 jobs (+5.0%), Salzburg (AT) +4,500 jobs (+11.1%) and also Corsica (FR) +3,000 jobs (+44.8%) and Flevoland (NL) +1,300 jobs (+8.1%).

Where industrial employment suffered in these regions, **employment in services has remained stable, however, here there are significant differences between regions** with 37 regions loosing employment in services (in particular South-Holland (NL) -93,80 jobs, Andalusia (ES) -88,200 jobs, North-Holland (NL) -82,100 jobs and Lisbon (PT) -64,700 jobs) and 30 regions seeing an increase in services employment (in particular London (UK) +157,100 jobs, Mazovia (PL) +96,500 jobs and Bucharest – Ilfov (RO) +64,600 jobs). In relative terms regions more affected are Peloponnisos (GR) -9.9%, Thessaly (GR) -8.4%, North-Holland (NL) -7.3%, Asturias (ES) -7.0% and South-Holland (-6.7%). Regions where services employment has grown relatively most are Bremen (DE) +9.6%, Bucharest – Ilfov (RO) +8.7%, Mazovia (PL) +6.2%, Brussels Capital Region (BE) +6.2% and Lorraine (FR) +5.5%).

3.1.3 The long-term perspective, investment and development

Total R&D investment for the group of regions with a strong focus on the service sector and public R&D increased by €14.2bn or 37% to €52.5bn. The strongest increase was for investments made by the business sector (+47%), followed by those made in the government sector (+26%) and the higher education sector (+22%).

R&D expenditures for the regions in this group have grown much stronger than for the EU27 at large (+27%) but quite interestingly **growth in government sector and higher education sector R&D has been below that of the EU27** (+29% and +37% respectively) whereas growth in business R&D investment has been significantly above that of the EU27 (+23%). This implies that 'science & services' regions are catching-up in terms of private R&D investments, which is often still the weakest aspect of their innovation systems, but it is improving. In this regard, it is important to point out to the high and increasing policy attention for innovation support to enterprises which is discussed in more detail in the following section.

R&D investments have increased in almost all regions and relatively most in Bucharest- Ilfov (RO) +231%, Zeeland (DK) +226% and North-east Bulgaria +222%. Regions with faster R&D growth have, on average, also experienced a faster increase in

per capita GDP. In some regions, R&D has thus been one of the main drivers of fast economic growth between 2002 and 2008 with per capita GDP having increased even twice as fast as that of the EU27. Maintaining or even further increasing R&D investments despite current budgetary constraints will be necessary to keep up this outstanding growth performance.

3.2 Regional innovation policy mix

3.2.1 Helicopter view of policy focus

The majority of support measures for the group of regions with a focus on the service sector or public R&D, are in the priority areas Priority 2 'Research and Technologies', (147 measures) and Priority 4 'Enterprises' (111 measures). Priority 1 'Governance & Horizontal Research and Innovation Policies' follows with 65 measures. Dedicated measures on Priority 3 'Human Resources, Education and Skills' (29 measures) and Priority 5 'Markets and Innovation Culture' (12 measures) are less frequently implemented at regional level (Table 3-1).

Taking the budgets into account shows that the two main priorities are even more important. The share of the support measures in Priority area 2 ('Research and Technologies') in terms of budget is 44%, while the share in number of measures is 40 %. Also the support measures in the Priority area 4 ('Enterprises') seem to have a relative large budget (30% of measures, 37% of budget)). On the other hand, measures on Priority 3 'Human Resources, Education and Skills' and Priority 5 'Markets and Innovation Culture' are in terms of budget even less important than in terms of the number of measures, with respectively 8% and 3% of the measures and only 2% and 0.1% of the budget for the total of this group of regions. Measures classified as 'Governance & horizontal research and innovation policies' (Priority 1) have a share in the total budget (as well as number of measures) of 18%. This is very low compared to the importance of measures in this priority for the group of world-class performing regions, where on average 46% of the budget is spend on Priority 1 'Governance & horizontal policies'.

When we look at this mix of the support measures per type of RIS performance group (Table 3-3), we first highlight the observation that the Priority 1 'Governance & horizontal policies' are in terms of budget the most important for the innovation 'leaders' and 'followers' of group 3. The importance in terms of budget of the policies in Priority 2 'Research and technologies' is lowest for the leaders, and increases for each group of a lower performance, and is the dominant policy category for the 'modest' innovating regions.

The policy-mix, in terms of the distribution of the budget over the various measure priorities, for the 'Leaders' and 'Followers' is quite similar. For the 'moderate' innovating regions classified as 'science & services' regions. Priority 4 'Enterprises' is by far the largest in terms of budget. For the RIS performance group of 'modest' innovation the main priority class of measures is 'Research and Technology'.

It remains difficult to make claims and conclusions in terms of cause and effect, but for the 'modest' performing regions, the priority of 'Research and Technologies' might still be the most relevant to start catching-up. The next level of performance calls for policy investments in Priority 4 'Enterprises'. Measures on 'Governance & horizontal innovation policy' seem to be most relevant for leading and world-class regions.

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Table 3-1 Overview of RIM repository support measures (Group 3), RIM 2012

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as 'science & services' regions	17.8%	(65 of 364 measures)
2- Research and Technologies		43.9%	(147 of 364 measures)
3- Human Resources (education and skills)		1.6%	(29 of 364 measures)
4- Enterprises		36.7%	(111 of 364 measures)
5- Markets and innovation culture		0.0%	(12 of 364 measures)
Total		100%	

Source: Own figure based on the RIM repository.

Table 3-2 Overview of RIM repository support measures (Group 3), RIM 2011

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as 'science & services' regions	19.0%	(58 of 352 measures)
2- Research and Technologies		43.6%	(144 of 352 measures)
3- Human Resources (education and skills)		1.1%	(29 of 352 measures)
4- Enterprises		34.8%	(102 of 352 measures)
5- Markets and innovation culture		0.3%	(10 of 352 measures)
n/a		1.2%	(9 of 352 measures)
Total		100%	

Source: Own figure based on the RIM repository.

Table 3-3 Overview of RIM repository support measures (Group 3), RIM 2012

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as 'science & services' regions **leaders**	3.21%	7 of 61 measures
2- Research and Technologies		1.96%	24 of 61 measures
3- Human Resources (education and skills)		0.00%	4 of 61 measures
4- Enterprises		3.13%	24 of 61 measures
5- Markets and innovation culture		0.00%	2 of 61 measures
Change in RIS performance group 2006-10 'leaders'	➕	(8 of 12 regions)	
	↘	-	
	=	(3 of 12 regions)	

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as 'science & services' regions **followers**	6.15%	11 of 121 measures
2- Research and Technologies		4.54%	53 of 121 measures
3- Human Resources (education and skills)		0.49%	12 of 121 measures
4- Enterprises		4.15%	39 of 121 measures
5- Markets and innovation culture		0.02%	6 of 121 measures
Change in RIS performance group 2006-10 'followers'	➕	(13 of 24 regions)	
	↘	(4 of 24 regions)	
	＝	(8 of 24 regions)	

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as 'science & services' regions **moderate**	5.73%	25 of 95 measures
2- Research and Technologies		8.43%	32 of 95 measures
3- Human Resources (education and skills)		0.51%	6 of 95 measures
4- Enterprises		23.06%	29 of 95 measures
5- Markets and innovation culture		0.00%	3 of 95 measures
Change in RIS performance group 2006-10 'moderate'	➕	(9 of 15 regions)	
	↘	(2 of 15 regions)	
	＝	(4 of 15 regions)	

RIM measure priorities	Focus Group	Budget Contribution per Priority in Group TOTAL	
1- Governance & horizontal research and innovation policies	regions classified as 'science & services' regions **modest**	2.72%	22 of 87 measures
2- Research and Technologies		28.93%	38 of 87 measures
3- Human Resources (education and skills)		0.58%	7 of 87 measures
4- Enterprises		6.38%	19 of 87 measures
5- Markets and innovation culture		0.00%	1 of 87 measures
Change in RIS performance group 2006-10 'modest'	➕	(10 of 20 regions)	
	↘	(1 of 20 regions)	
	＝	(9 of 20 regions)	

Source: Own figure based on the RIM repository.

3.2.2 Trends in the policy mix

Between 2011 and 2012 the distribution of different support measures as recorded by RIM across the five priority policy areas has not changed much. In total for the regions which have a focus on the service sector and/or public R&D, the number of measures listed in the RIM repository has increased with 12 new measures from 352 in 2011 to 364 in 2012. In 2012 a total of 24 new programmes have started, especially in Bulgarian and Italian 'services & science' regions. Among the new Bulgarian policy measures, there are quite a number of initiatives promoting innovation in services and

addressing societal challenges, e.g.: IMAGINE - Low Energy Cities in North-east Bulgaria; CCIC - Complex Challenges, Innovative Cities and Design Led Innovations for Active Ageing in South-west Bulgaria. Among the new Italian measures are several new cluster policy measures, e.g.: Innovation support in clusters, i-Start (Umbria, IT).

As was already identified in the RIM Annual report 2011 the priority 4 of measures oriented to 'enterprises' has been increasing and this trend seems to have continued as the share for this priority in the total budget has increased from 35% to 37%, and 9 more measures have been identified and covered in the repository. The other trends, in as far as it can be deducted from the changes in the RIM repository for only one year, do not seem to point to drastic changes in the policy mix for the regions in this group 'science and services' regions. The Priority 2 measures addressing 'Research and Technologies' is still the main priority.

Since business-R&D is in general a relative weakness of the regions in this group, and public R&D a relative strength, it makes sense that policies oriented towards innovation in enterprises are receiving high and even increased attention. Normally it is difficult to speak about causal relations between policy and performance, but the fact that the business R&D expenditures in this group of regions has increased, indicates that the policy mix with its emphasis on 'enterprises' has been successful in addressing the most pertinent challenge of having on average low levels of business R&D. But the emphasis on priority 4 ('Enterprises') also accords with the importance of the service sector, which is less depending on technological innovation.

In terms of budget the share attributed to funding for innovation in enterprises is in the group of 'science and services' regions more than 10 times as high as for 'World-class performing' regions, but these regions already have a particular strength in terms of business R&D. Also the share of the budget for Priority 2 contrasts between these two groups, since Priority 2 'Research and Technologies' has for 'world-class performers a share of 70% in the budget, while for the 'science & service' regions this share is only 44% in 2012.

Concerning Priority 3 'Human Resources' and Priority 5 'Markets and innovation culture' there has been no clear change between the RIM repository in 2011 and 2012 in either the number of measures or in terms of their share in the total of the recorded budgets.

3.3 Appraisal of regional innovation policies

3.3.1 Relevance of current innovation policies

Appraising the relevance of innovation policy is of course something that has to be assessed by each individual region and for each specific policy as well as the exact mix of the various policies. From an analysis of the policy characteristics of three groups of regions, the gained insights are quite generalised, and do not do justice to the large variety among the regions in one of the groups. Also when the analysis is done for many more, smaller groups, the specific characteristics of individual regions call for tailored policy making, but also tailored appraisal of regional innovation policies. However, there are some interesting observations at a more generalised level that can be derived from analysing the RIM data for the three groups, which may help individual regions towards developing more tailored approaches.

Although the number of measures and their share in the budget as monitored by RIM for Priority 3 ('Human Resources, Education and Skills') and Priority 5 ('Markets and Innovation Culture') is generally low, these priority areas should be of more importance within the policy mix of the group of 'science & services regions'. In particular, less R&D-oriented and less technology-oriented areas of innovation policy seem especially relevant for this group of regions where service industries are dominating the economic structure. For innovation in service sectors human resources are perhaps even more important inputs to innovation than R&D. Also the

promotion of innovative demand, developing new markets, issues of innovation culture, creative industries, social innovation public sector innovation and other demand-side innovation policies seem especially relevant for the group of 'science and services' regions.

However, one needs to take into account that some of these policy issues may be address as part of a package, e.g. under the umbrella of a cluster policy project or another large measure, but where the issues of Priority 3 ('Human Resources, Education and Skills') and Priority 5 ('Markets and Innovation Culture') are not the main issue of the concerning programmes. In this respect, we for instance recall a finding of the RIM Thematic paper on Demand-side innovation policies. The existing evidence pointed out that since many measures that have been providing support to innovation projects in companies or clusters for many years, such initiatives have gradually incorporated new and additional elements, including characteristics of Priorities 3 and 5. There are other possible explanations as well, including the possibility that measures for these priorities may be especially relevant at either national (e.g. concerning training PhD researchers) or local level of innovation policy.

The thematic areas of regional innovation policy support measures could also tell us more about the relevance of current innovation policies. From the analysis of forms of innovation support as monitored by the RIM (see Table 3-4), it can be observed that there are 9 priorities in 'science & services' regions which show on average higher scores than the total EU average and 16 for which the average was below. Compared to the EU average relatively more measures were found in support of: applied business research; gazelles; innovation in the service sector; innovation networks; innovation vouchers; new technology-based firms; public-private partnership; science-industry cooperation; and service. Among the measures with below EU average scores are: business angels; cluster; eco-innovation; incubator/science parks; innovation culture; research infrastructure.

Relatively large attention for policies addressing applied business research (compared to regions of the other groups), makes sense because it is a relative weakness of this group of regions focusing on services and public R&D. An explanation for the fact that there are not many regional policies on IP rights, international cooperation, and climate change, might be that these issues are already addressed by national policies.

Among the more frequently implemented regional policies there are a few that receive relatively less attention in 'science & services' regions, compared to the two other groups of regions, such as cluster policy and entrepreneurship policy. Cluster policy (especially in the traditional approach) may be less relevant for service industries, but there is not good explanation why entrepreneurship policies would be less relevant for service industries. Gazelles policies, which are relevant for service industries as well, get relatively more than average attention.

Although SME policies are the most important category, the score is way behind the attention for this policy in the world-class performing regions. Science-industry cooperation policies are the second most important, and this relates to the most important challenge already identified in the Annual Report of 2011 based on a review of Regional RIM reports. Since public R&D is a relative strength for 'science & services' regions, promoting science-industry cooperation is the preferred mode to exploit this strength. However, in world-class performing regions it gets even more attention at regional level.

Surprisingly, other policies which aim to exploit public R&D such as knowledge transfer and start-up/spin-off policies have a lower popularity in 'science & services' regions than on average for regions in Europe. Knowledge transfer policies get for instance more attention in world-class performing regions. The below average attention for regional policies addressing universities and research infrastructure seems reasonable, since this is already an existing strength in 'science & services' regions.

Table 3-4 Main forms of innovation support (Group 3)

Form of support	Mean scores
Applied business research	0.86
Business angels	0.00
Climate change	0.09
Cluster	0.38
Early stage-financing	0.30
Eco-innovation	0.16
Entrepreneurship	0.68
Fiscal incentives	0.00
Gazelles	0.14
Incubators/science parks	0.13
ICT	0.00
Innovation culture	0.38
Innovation in the service sector	0.23
Innovation networks	0.49
Innovation support services	0.61
Innovation vouchers	0.10
IP rights	0.00
International cooperation	0.00
Knowledge transfer	0.68
New technology-based firms	0.14
Public-private partnership	0.57
Research infrastructure	0.33
Science-industry cooperation	0.88
Service	0.09
Skills for innovation	0.55
Small and medium-sized enterprises	1.29
Start-ups/spin-offs	0.46
Universities	0.38

Source: Own figure based on the RIM repository. Above EU average in green, below in red.

3.3.2 Effectiveness of innovation policies and availability of evidence-based assessments

For 72 out of 364 support measures (21.9%) in the group of 'science & services' regions an evaluation and/or another form of assessment has been carried out. When taking all (1,081) support measures into account the result is similar for all three main groups of regions analysed in this report. For the two most representative policy priorities: Priority 4 ('Enterprises') and Priority 2 ('Research and Technologies'), evidence-based assessments were identified for 24% and 14% of the measures, respectively. In particular, for the latter Priority the measures have less often been evaluated or assessed.

Table 3-5 Available evidence-based assessments and share of good practices (Group 3)

| RIM measure priorities	Focus Group	Measures with evidence-based assessments		Measures considered as good practice	
1- Governance & horizontal research and innovation policies	regions classified as 'science & services' regions	26.2%	17 of 65 measures	63.1%	41 of 65
2- Research and Technologies		13.6%	20 of 147 measures	55.1%	81 of 147
3- Human Resources (education and skills)		17.2%	5 of 29 measures	65.5%	19 of 29
4- Enterprises		24.3%	27 of 111 measures	69.4%	77 of 111
5- Markets and innovation culture		25%	3 of 12 measures	91.7%	11 of 12

Source: Own figure based on the RIM repository.

The indication of good practice, based on the assessment provided by the RIM network of correspondents shows that overall the measures of in world-class performing regions is more often considered to be good practice than policies in the other groups. In the group of 'science & services' regions the number of measures considered as good practice is highest for Priority 2 ('Research and Technologies'), because it is the priority area with the largest number of measures (147 measures out of a total of 364). Actually, the share of measures considered to be 'good practice' is with 55 % lowest for this main Priority 2 ('Research and Technologies'): 81 measures out of 147. The 'good-practice-rate' for the measures in the other policy priority area's is higher.

The evidence base of the effectiveness of regional innovation policies is still rather poor and comparable with the results for regions with strong focus on industrial employment (Group 2). The RIM repository data for 2012 shows that for 37% of the support measures in 'science & services' regions it is too early to judge the success of the measure. For 12% of the measures in this third group of regions the measure has achieved its intended targets in terms of results. For 45% of the measures it can be said that there was a positive response by beneficiaries but it is too early to judge the results or impact. For only 5 % of the measures there is evidence of impact based on verifiable indicators or an evaluation.

Figure 3-1 shows that for the two most important priorities the assessment patterns are similar and the shares of measures with overall favourable assessments are highest. However, again, the numbers of measures for which evidence of impact can be shown, remains low. Priority 1 ('Governance & Horizontal policies') takes a middle position. For Priority 3 ('Human Resources') measures the available evidence of success is lowest. For Priority 5 we have to recall the low number of support measures.

Figure 3-1 Assessments of measures by priority field (Group 3)
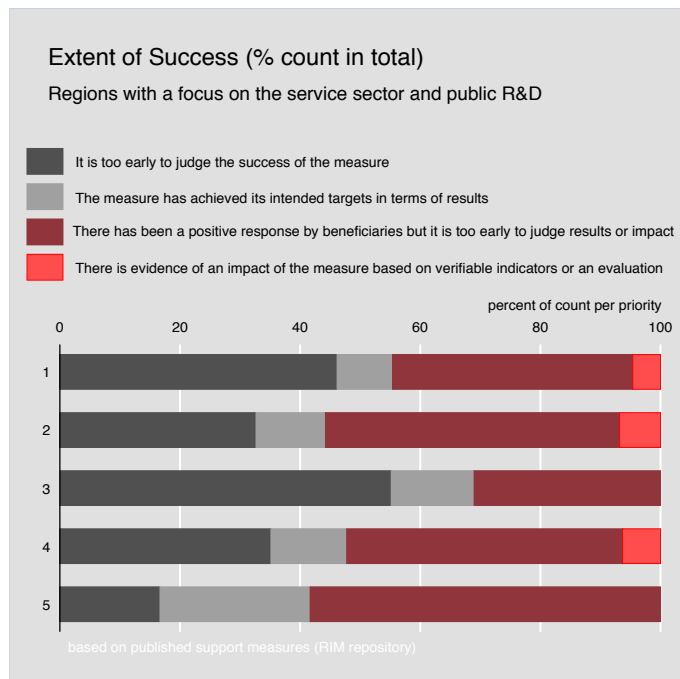
Source: Own figure based on the RIM repository.

3.3.3 Identification of credible actions

In order to identify credible action that could improve the innovative performance of the regions, it is necessary to improve the evidence and intelligence concerning the effectiveness of the existing policy measures. The fact that for only a few policy measures evidence of impact was available, does not imply that there is no impact, but most monitoring and evaluation practices merely report on the subsidised or supported activities. Such monitoring information may show that the measure succeeded in attracting participants, or that the measure had reached its target to support 100 companies, but this kind of information does not tell much about the improvements, the changes that have taken place. Moreover, it does not tell the policy maker what could be improved to increase effectiveness and efficiency. The share of measures that were identified as good practice in RIM for the 'science & services' regions is relatively high, but we have to be also aware that the evidence of impact is still rather poor.

Even if there would be much more evidence on good practice policies in terms of impact, there is still the likely risk in transferring policies that the results in another context might give different results. The division along the three groups at least addresses this difference in context to some extent. In trying to identify credible actions we are also aware that it is not always true that the most innovative regions have the best policy measures and that when an increase in performance has taken place that it remains difficult to relate in a linear, causal way the improvement to certain policy measures. However, we use all the available information for increasing the likeliness that the chosen policy examples are indeed credible actions, worth consideration, and with potential for inspiration in policy making, changing and designing new measures.

Below we provide examples of policies that have been identified as good practice of regions that have improved their innovation performance during the period 2006 and 2010, as was captured in the latest Regional Innovation Scoreboard (RIS 2012).

With regard to policy mix, strategy, and participation

Which **leading regions with a focus on services and/or public R&D** have in the past successfully addressed their local challenges? Which particular policy mixes have proven well adapted to the regional situation? Has the mix of policies/regional strategy been determined in a participatory process? What experiences have been made with such processes?

For identifying credible actions we looked at the RIM information on the following regions which have improved their relative performance as measured by the RIS 2012. First some examples were selected from leading 'science & services' regions which had improved their innovation performance, which includes the following 'service & science' regions: Bremen (DE), Hamburg (DE), Saarland (DE), Thuringia (DE), North-Holland (NL), Lisbon, and Upper Norrland (SE).

- **Example: The "Innovation Alliance Hamburg" and "Model Hamburg: growth with vision" (Hamburg, DE)**

In 2008, the Departmental Authorities for Economic Affairs and for Science and Research commonly launched the initiative "Innovation Alliance Hamburg" whose aim is to develop and implement a holistic innovation strategy for Hamburg based on enhanced cooperation between science and industry. It brings together representatives of policy, industry and science to design a strategy that transforms Hamburg and its surrounding areas into one of the leading innovative regions of Europe. Strategy development is realised in three stages, the first of which resulted in the Strategic Guidelines. These are the basis for measures and instruments and their implementation. Key actors from science, industry, intermediaries, multipliers and administration were involved into the process.

The first implemented measures are: The Innovation Contact Point and the Innovation Starter. The 'Leitbild' launched by the Senate of Hamburg in 2009 "Model Hamburg: Growth with Vision" (Leitbild Hamburg: Wachsen mit Weitsicht) has placed innovation in a more broader and long-term perspective. Growth is understood in terms of economic, fair and social development, as well as quality of life. In this context, the four main objectives are related to: (i) further develop Hamburg as an international metropolitan city with high dynamics, innovation potentials and cultural diversity; (ii) sustainable economic and employment growth, ecological quality and a focus on new economic strengths; (iii) supporting Hamburg's talents and attractiveness for talents, and (iv) further develop Hamburg as a fair and attractive city.

The vision "We are creating modern Hamburg" contains strategic goals and the regional government's working programme. Hamburg's science and research policy focuses on excellence in research, on strengthening science and science-industry cooperation in the Metropolitan Region, on shaping favourable framework conditions for research and innovation, on research support in the City of Hamburg, and on reforms in the higher education sector. Innovation policy is oriented along the vision to become an Innovation Capital in Europe through targeted cooperation between the economy, science, policy and administration. This leads to political measures concerning for instance application-oriented institutes, innovation support, technology-oriented start-ups, or activities on the European level. Hamburg's government further targets small- and medium-sized companies, industry and trade, and strategic competence clusters, both in established and in new fields.

The above three strategic initiatives show that designing and implementing an innovation strategy for a city-region like Hamburg calls for a strategic 'place-based' vision in which the various functions and actors in a city should be included in an holistic and participative vision.

- **Example: Collective Efficiency Strategy and Cascais a local agency to foster entrepreneurship (Lisbon)**

The overall innovation policy mix of the Lisbon region has improved and includes measures such as: incentives for RTD activities, internationalisation and innovation of enterprises, development of industrial and technological science parks, financing instruments to support entrepreneurship, as well as the support to collective efficiency strategy projects. Particularly, the support to internationalisation is successful, especially since the crisis has reduced the possibilities on the national and European market. In 2009, following a competitive call for proposals, the list of approved clusters and centres of competitiveness and technology (equivalent to the "French Pôles de Compétitivité") within the framework of the Collective Efficiency Strategies of the NSRF (2007-2013) was published. In this framework the cluster of creative industries is relevant to the Lisbon region. The centres of competitiveness and technology that are of relevance to the region include the ones specialised in production technologies; tooling industry; health, ICT; automotive industry and mobility.

DNA Cascais is a non-profit organisation based in the municipality of Cascais (part of the Lisbon Metropolitan Area) whose mission is to foster entrepreneurship in Cascais and in the Lisbon region, including social entrepreneurship and support for young entrepreneurs. Social innovation policies are often promoted by specific organisations, but in this case these projects are integrated with other, more traditional and more technological innovation policies. DNA Cascais activities relate to the development of skills and knowledge by promoting and stimulating creativity and innovation in an entrepreneurial environment.

With regard to organisations and institutions

Are there good practices in **leading 'services & science' regions** in terms of regional organisational set ups of funding agencies? What are the joint characteristics of such organisations?

The below examples again are selected among regions which have improved their innovation performance, as captured by the Regional Innovation Scoreboard 2012.

- **Example: Amsterdam Innovation Motor (North-Holland, NL)**

Amsterdam Innovation Motor (AIM)[4] was established to maintain and consolidate the increasing performance of the Amsterdam region in the knowledge economy. AIM is directed by the Amsterdam Economic Board, which includes a variety of actors. One of the best practice characteristics of this 'local' innovation agency is the way it has been set up as a grassroots initiative. AIM is an initiative of the knowledge network, 'KennisKring' Amsterdam, which was merely initiated as a project in 2004 to set up a network of actors, mostly companies, which are involved in the knowledge economy. In August 2006, the project was registered as a foundation under the name, Stichting AIM, and since that time AIM has been operating as an independent organisation and agency. AIM promotes innovation, cooperation and new business in the Amsterdam region. Its focus is on the development of sectors that are most promising in terms of strengthening the position of the region, namely:

- Creative industries;

- ICT;

- Life sciences;

- Financial and Business Services;

- Sustainability.

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[4] http://www.aimsterdam.nl/english

AIM functions as a facilitator to promote mutual cooperation between knowledge institutions, commerce and industry, and government and social organisations in the Amsterdam region. Because it is a local innovation agency for the Amsterdam metropolitan area its activities are closely adapted to the local circumstances. It also allows to develop social innovation programmes and organise the involvement in Smart City initiatives, e.g. projects that also include initiatives of civilians and social entrepreneurs who take initiatives and do pilots that provide local solutions to global challenges.

The activities include:

–   Improving the business development climate for knowledge intensive businesses with extra attention to start-ups and growth companies;

–   Promoting cooperation between knowledge institutions, commerce and industry and government;

–   Profiling the Amsterdam region nationally and internationally as a knowledge-intensive region;

–   Monitoring developments on a sector-by-sector basis;

–   Promoting the availability of adequate employment opportunities.

•   **Example from Leader 'science & services' region: Bremer Aufbau-Bank GmbH (Bremen, DE)**

Since 2001, the Bremer Aufbau-Bank (BAB) has been the development bank of the federal state of Bremen and supports companies in all stages of development. It supports partnerships with local banks and all economic activities that are in the interest of the state of Bremen. The BAB accompanies companies from the foundation to the initial public offering (IPO), as well as in their growth phases and succession. The concrete instruments include financing concepts for start-ups, growing companies, and loans for investments.

Although the focus of BAB is not solely on innovative or technology oriented companies (the mission of BAB is broader than innovation financing), most of the activities are de facto related to innovation:

–   support of start-up companies (e.g. soft loans);

–   loans for growth and innovation;

–   provision of venture and equity capital; and

–   advisory services and contact arrangements.

•   **Example from a leader 'science & services' region: The Saarland Venture Finance Company (SWG) (Saarland, DE)**

The Saarland Venture Finance Company (SWG) supports, in cooperation with other investors, innovative and technological entrepreneurs and companies with equity capital primarily to finance the development and launch of innovative products. In the new Structural Funds programming period agencies specialised in financial measures will increase in importance, e.g. concerning revolving funds and because of the lack of funding for SMEs due to the crisis.

Projects eligible for support from SWG are:

–   investments to facilitate market introduction;

–   applied research and development for starting up commercial production; and

–   for adaptation to market requirements of the technically new or significantly improved products, processes or technical services

Applicants can be technology-oriented start-ups and small and medium-sized technology companies, not older than ten years and which meet the criteria of the

definition of small and medium-sized enterprises (SMEs) in the European Union (EU). Since 1998, the SWG has supported 41 companies with an overall funding volume of €98.5m. The contribution from Regional public funds was 18.5m. The measure has achieved its intended targets in terms of results (e.g. number of enterprises investing in innovative projects, people trained, etc.).

> Are there good practices in **follower 'services & science' regions** in terms of regional organisational set ups of funding agencies? What are the joint characteristics of such organisations?

- **Example of a follower 'science & services' region (Lazio, IT)**

Lazio, as all Italian regions, has full autonomy in RDTI policy since the 2001 constitutional reform, which established shared competences in this as well as other policy areas. This reform, together with the almost simultaneous introduction of the Lisbon Strategy at the EU level, had a strong positive impact, both strategic and financial, on the importance of RDTI in regional policy. The regional administration has gained a central role in designing and implementing the regional innovation strategy and policy.

Since 2005, the Regional Government has set up a Unit directly responsible for Economic Development, Research and Innovation whose mission is to coordinate initiatives in these fields and manage activities carried out as part of programme agreements with the central government as well as other institutions. This Unit is part of the DG Economic Planning, Research and Innovation. In addition, the DG Industry coordinates policy measures aimed at supporting sectoral innovation in manufacturing and services, entrepreneurial innovation, advanced services to enterprises (including technology transfer/brokerage, strategic and economic intelligence, manufacturing advisory services, quality and design advice, etc.) and internationalisation of local firms. The regional Law and an independent budget, introduced in 2008, replaced all the existing legislation and several fragmented funds. Another important step, linked to the introduction of the new regional Law, is the creation of a RTDI Regional Strategy Committee with an advisory role and carries out scenario analysis. The DGs are complemented by public owned agencies.

Horizontal coordination between the different DGs and, within the DGs, between the different Units is weak, despite the introduction of a Unitary Programming Document (DUP 2007-2013) which is an instrument aimed at integrating the initiatives envisaged in the ROPs with the other regional actions. Framework Programme Agreements (APQs) are used to ensure vertical co-ordination between regional and national authorities (MIUR, MSE). They define specific measures, managing actors, implementation, monitoring and evaluation mechanisms, available financial resources, etc.

The "Conference of Regions and Autonomous Provinces" is a body, which aims to improve dialogue between local authorities and between these and the central government. With all the new governance competencies and new and improved structures there is still a remaining challenge: the various DGs, units and the regional agencies in charge of different initiatives find it difficult to interact with each other, as there is no formalised coordination mechanism.

> Are there good practices in **moderate 'services & science' regions** in terms of regional organisational set ups of funding agencies? What are the joint characteristics of such organisations?

- **Example The organisational set-up of funding agencies (Nord-Pas-de-Calais, FR)**

As in all French regions, there have been four key institutions supporting innovation in Nord-Pas de Calais since 2000: the State administration representing the Ministry in charge of research (DRRT), the State administration representing both the Ministry in charge of industry and the Ministry in charge of labour (DIRECCTE); the regional

authorities (Regional Council); and OSEO Innovation. These four institutions are working together through the implementation of a State-Region contract. The Nord-Pas de Calais regional authorities have some autonomy, insofar as they manage some actions and measures through ERDF global grants.

The design of the Regional Innovation Strategy (SRI) was carried out in 2009. The authority responsible for the overall governance is the committee in charge of the Regional Economic Development Scheme (SRDE). The members are State authorities, the Regional Council, the Higher Education and Research Pole, the Regional Chamber of Commerce and the Lille Chamber of Commerce, OSEO Innovation, and the Local Council of Nord and Pas-de-Calais). At an operational level, all the actions decided in the SRI are administered and managed by the regional actors that support innovation projects: clusters of excellence, competitiveness clusters, incubators, local chambers of commerce, platforms for the support of the exploitation of research outcomes, etc.

At management level, the regional innovation agency called NFID was created to implement the Regional Innovation Strategy and monitor the coherence of all the actions taken at the regional level. NFID is a non-profit organisation, based on a partnership between the Region, the State and OSEO Innovation. It replaces the former Innovation platform, following the evaluation of the Regional Programme in support of Innovation (2006) that pointed to the governance problem of the regional innovation policy mix. Its three main missions are as follows:

– Monitoring of the Regional Innovation Strategy;

– Helping regional authorities with new subjects and actions taken in order to achieve the SRI objectives;

– General survey on research and innovation policies, as a support for regional authorities.

NFID is not intended to be the main partner for companies, but should instead help link companies and support organisations together. It was created to reinforce the coherence of all the actions taken at the regional level by diverse authorities to support innovation and research.

The creation of NFID as a monitoring and support institution for the Regional Innovation Strategy should help strengthen the coherence of the diverse range of actions available in the region regarding innovation support.

Because lots of actions regarding innovation are implemented directly by local actors or specific structures, the role of NFID is important in order to generate a 'big picture' of the innovation system in Nord-Pas de Calais. The fact that the monitoring aspect of NFID's mission is coupled with the capacity of this institution to propose new measures and to conduct foresight studies should help regional authorities to keep track of the evolution of regional actors regarding their use of innovation tools.

With regard to evaluation and monitoring

What type of evaluation and or monitoring has taken place in **regions with a focus on services and public R&D**? Why are many of the existing support measures still evaluated so little, irregularly and/or superficially?

- **Example: Evaluation of the Peaks in the Delta programme of the Northwing Randstad (North-Holland, NL)**

One of the regional Peaks in the Delta programmes called the Northwing of the Rim City (Randstad) encompasses the region between and including Amsterdam and Utrecht, an area responsible for a third of Dutch gross national product. This region has an international top position in the 'services industry'. The Peaks programme therefore focuses on services and has five priorities:

– creative industry/ict /new media (related to the strong media sector around Dutch media hub Hilversum and the creative ICT scene in Amsterdam);

– life sciences & medical (around the universities of Amsterdam and Utrecht and the related academic hospitals);

– innovative logistics & trade (around airport Schiphol and the Amsterdam harbour);

– tourism & conferences;

– knowledge intensive business services (related to the financial and ICT services sector in Utrecht/Amsterdam).

Half of the annual budget of about €30m came from the national government and the other half from regional governments. This PiD programme was evaluated in 2010. Since many projects were not completed at the time of the evaluation, the ability to draw conclusions in terms of impact was limited. However, in general, the PiD programme seemed to be effective:

– Up to October 2009 almost €200m was used to fund 244 projects;

– Despite a slow start, it was expected that by the end of 2010 all funds would be allocated (€296m);

– The first short-term effects were already visible: improved cooperation and knowledge sharing between government, institutions and companies, strengthening of the connection between education and labour market, and the development of new products and services.

– Expectations were high concerning the long-term effects: better trained and qualified staff, the establishment of new companies, and the realisation of high qualitative and competitive products and services;

– Applicants rate the measure's level of incentive to be very high: they indicated that without the measure, they would not have started their projects, or if they would have, it would have been later in time and with less ambition;

– In general, local governments and others involved were enthusiastic about the measure. It was deemed to reinforce the execution of the provincial and municipal economic and innovation policy. The appointed priority 'peaks' were considered to be recognisable sectors, which already had the regional policy's attention. PiD ensured focus necessary to organise cooperation at the regional level.

The measure was also considered to be implemented in a correct and efficient manner, with certain improvements made since its start in 2006. The costs of implementation were comparable to costs of implementation of other measures with similar goals and of similar size. SMEs' involvement was ample. Local governments have often matched their regional innovation priorities to the PiD priorities as laid out in the National PiD Nota (2004), but no direct connection was found between local measures and the national PiD measure as such. Also an informal evaluation of the Province of North-Holland in 2011 is positive about the results, although measurement of economic impacts is difficult. The main effect is considered to be the contribution to cluster formation.

4. Summary and conclusions

World-class performing regions (Group 1)

Main Characteristics of the Regional Innovation System

GDP per capita in most world-class performing regions varies between €25,000 and €35,000, in capital regions it can reach up to €50,000. Central Bohemia (CZ) constitutes an exception, as the economic turnover of Czech regions remains more limited. As a tendency, regional GDP per capita has decreased as result of the economic crisis, although not on all accounts substantially. Other than in many other places, not all world-class performing regions' industrial sectors were severely affected by the crisis. To the contrary, some regions in Austria and Germany even experienced a certain boom. In general, regional unemployment rates correlate with the developments in the respective national economies. Among the regions of this group, the job-loss effects of economic crisis was most strongly felt in regions of the Czech Republic, the United Kingdom, the Netherlands and Denmark. Regions of Sweden, Finland, France, Austria and Germany, to the contrary, are faring better.

From 2002 to 2009, the group of 27 world-class performing regions has invested a total of more than €840bn into R&D. Of those expenditures, more than €600bn, or above 70%, were made by the private business sector while only about €240bn, or below 30% were contributed by the public sector.

In terms of regional innovative performance, therefore, the high ranking of most world-class performing regions in the Regional Innovation Scoreboard has remained unaffected by the crisis. Since 2007, most of them have been and remain assigned to the group of "leaders", complemented by a few "followers". In fact, some have even slightly improved their position. While most regions have thus felt some sort of impact in terms of industrial layoffs, setbacks in GDP per capita and/or rising unemployment, few negative changes can be identified with a view to innovative performance.

Regional Innovation Policy Mix

In the group of world-class performing regions, the majority of political support measures focused on 'Research and Technologies' and support for 'Enterprises'. Many of the support measures for research and technologies' are high volume investments while most of those aimed at regional enterprises tend to be low volume, network-oriented approaches. Moreover, a large share of total budget (46.0%) is bundled in measures documented as 'Horizontal Research and Innovation Policies' (Priority 1). These independent 'pools' of funding, often flexibly managed by regional agencies, are a key characteristic of the policy mix in world-class performing regions.

Policy makers in world-class performing regions can and rightly do rely on existing structures and dynamics when deciding about the allocation of additional public funding. They have to structure policy measures in such a way that they add to the existing momentum of the private sector and trigger the development of novel forms of and approaches to science-industry co-operation,

Hence, leading regions do not invest substantially in high-volume, indiscriminate subsidies for their already well-performing business sectors, although they entertain low-budget network and cluster policies to act as a catalyst to local business dynamics. Instead, they tend to invest more extensively into measures related to the build up and extension of existing or new public research capacities that are complementary to the strengths of the local enterprise sector.

Appraisal of Regional Innovation Policies and Practices

The pattern of keywords assigned to policy measures covered by the RIM repository suggests that many world-class performing regions apply a policy mix that is indeed well-adapted to issues and challenges characteristic for regions with a high level of development and thus well-suited to improve their economic situation in the long run. To their benefit, policy makers in world-class performing regions can draw on a vibrant community of stakeholders with a strong intrinsic interest to express its needs and to join in activities related to regional innovation policy. In many cases, grassroots initiatives have already developed by their own efforts and can be used as a starting point or even continuous partner for future policy action. An important challenge to policy making in world-class performing regions thus is to keep in mind and be aware of existing momentum in the self-governance of the regional innovation system.

In most cases, support organisations operating in world-class regions are highly professionalised and there is a well developed division of labour between different aspects of regional innovation policy. Most organisations display sufficient capacities in terms of manpower, expertise, and sector specific knowledge as well as a strong network-based orientation towards the needs of the regional enterprises. In many world-class performing regions, in-depth external evaluations as well as complex monitoring are politically wanted and substantially funded. Suitable consultants with both a credible commitment to independent analysis and a good knowledge of the region in question tend to be available either regionally or nationally.

As some of the examples have illustrated, processes of stakeholder consultation are well established in many world-class performing regions. On the other hand, however, the listed examples place a strong caveat with regard to the question whether such processes can be 'engineered' in a straightforward manner. As is natural in democracies, it remains difficult to take central decisions on 'specialisation', i.e. in practical terms the exclusion of some parties from specific lines of funding.

Regions with strong focus on industrial employment, business and, or public R&D (Group 2)

Main Characteristics of the Regional Innovation System

Among a group of more than 100 regions with a strong focus on industrial employment, it is not surprising that there are large disparities both in terms of socio-economic and innovation performance. In many regions belonging to this group non-R&D factors are important sources of growth and jobs. It would be therefore naïve to think that even substantial private R&D investment alone would automatically lead to prosperity and high employment. The challenge for regions being far away from a technological frontier lies primarily in developing innovation capacity of local industries through a range of instruments and not exclusively through the support for R&D activities. This is not to say that support for local R&D should not matter at all. The specific challenge lies in connecting any relevant research efforts in partnership with local branches of industry. Re-thinking the governance aspects and creating new innovative and functional spaces bringing together different groups of stakeholders is not always given sufficient priority as it ought to be.

Regional Innovation Policy Mix

What we observe, however, is the focus on regional innovation is clearly concentrated on two priority areas, notably Priority 2 ('Research and Technologies') and Priority 4 – ('Enterprises'). It is also important to note an increase in budget contribution for Priority 2 ('Research and Technologies') which according to the latest available data accounted for almost 45% of total budget in support of innovation in this group of regions. Even in regions with competences in the area of higher education the low number of measures found for the Priority 3 ('Human Resources, Education and Skills') suggests that this form of support is not on the radar. In more general terms, the same observation can be made in relation to the Priority 5 ('Markets and Innovation Culture').

Appraisal of Regional Innovation Policies and Practices

The analysis of regional innovation policies allows putting a spotlight on aspects which deserve to be positively assessed (e.g. high attention given to entrepreneurship and relatively lesser focus on new technology-based firms, start-ups/spin-offs). On the other hand, it allows questioning some policy choices like the general absence of public-private partnerships, international cooperation programmes, and policy measures aimed at improving the skills for education. It is also important to note that with a view to the latter this group of regions actually accounts for the lowest share (below the EU average). The low effectiveness on innovation support measures in the group of industrial regions continues to be an issue that should be tackled in the new innovation programmes. Several concrete examples of credible policy actions and relevant practices beyond policy support measures were identified.

If we look at regions (leaders and followers) which improved or maintained their innovation performance over the recent years, we find higher share of favourably assessed measures than on average in this group. The final message is that industrial regions are capable of innovating, an that there may even be more scope for public interventions to build capacity and start novel initiatives than in many of the world-class innovating regions, where effective forms of public private sector partnerships have already emerged over a longer period of time.

Regions with a focus on the service sector and public R&D (Group 3)

Main Characteristics of the Regional Innovation System

Among the 71 regions in this group regional GDP per capita varied widely from as low as €3,700 in North-east Bulgaria to €59,800 in Brussels Capital Region. Almost 60% of regions have a per capita lower than the EU average (€23,500) in 2009. Unemployment rates also significantly differed across the regions belonging to this group, with the lowest rates recorded in the regions of Salzburg (AT) 2.5%, Prague 3.6% and Utrecht (NL) 3.8%, while the highest rates were registered for Spanish regions in this group.

Based on the 2012 RIS typology, the 71 regions with a strong focus on the service sector and public R&D can be classified according to the four innovation performance groups: leading regions (11), followers (25), moderate (15), modest (20). This shows that also in terms of innovation the performance varies considerably within this group. Almost half of the regions have improved their innovation performance, e.g. by moving from leader-low to leader-medium.

While the average BERD in the EU27 accounted for 1.24% of GDP in 2009, BERD in regions with a strong focus on the service sector and public R&D was much below this level, i.e. 0.61%. Compared to this low performance in terms of private R&D expenditures the situation for public R&D investments is relatively better. Public R&D investment for 'services & science' regions accounted for 0.77% of GDP, while the EU27 average is 0.75%. Hence, the regions in this group are on average not very R&D intensive and public R&D is often the main type of R&D.

However, total R&D investment for this group increased with €14.2bn or 37% to €52.5bn. The strongest increase was for investments made by the business sector (+47%), which shows that this group is successfully improving its main weakness. The improved balance between public and private R&D means that they become less dependent on public R&D as their main knowledge base.

Regional Innovation Policy Mix

The majority of support measures for the group of regions with a focus on the service sector or public R&D, are in the priority areas Priority 2 'Research and Technologies', (147 measures) and Priority 4 'Enterprises' (111 measures). Priority 1 'Governance & Horizontal Research and Innovation Policies' follows with 65 measures. Also in terms of budget the Priority 2 'Research and Technologies' is still the main priority (44% of the budget). Since business-R&D is in general a relative weakness of the regions in this

group, and public R&D a relative strength, it makes sense that policies oriented towards innovation in enterprises is receiving high and even increased attention.

The leaders and followers in the third group have spent the largest share of their budget in Priority 1 ('Governance & horizontal'), for the moderate innovators in this group Priority 4 ('Enterprises') has the largest budget share. For the modest innovators Priority 2 ('Research and Technologies') is the dominant budget category within their policy-mix.

Appraisal of Regional Innovation Policies and Practices

Relatively large attention for policies addressing applied business research (compared to regions of the other groups) makes sense because it is a relative weakness of this group of regions with a focus on services and public R&D. Among the more frequently implemented regional policies there are a few that receive relatively less attention in 'science & services' regions, compared to the two other groups of regions, such as cluster policy and entrepreneurship policy. Cluster policy (especially in the traditional approach) may be less relevant for service industries, but there is no good explanation why entrepreneurship policies would be less relevant for service industries. Gazelles policies, which are relevant for service industries as well, get relatively more than average attention. Although SME policies are the most important category, the score is way behind the attentions for this policy in the world-class performing regions. Science-industry cooperation policies are the second most important, and this relates to the most important challenge for 'services/science' regions. Promoting science-industry cooperation is the preferred mode to exploit their relative strength in public R&D, but in world-class performing regions it gets even more attention at regional level.

Surprisingly, other policies which aim to exploit public R&D such as knowledge transfer and start-up/spin-off policies have a lower popularity in 'science & services' regions than on average for regions in Europe. Knowledge transfer policies get for instance more attention in world-class performing regions. The below average attention for regional policies addressing universities and research infrastructure seems reasonable, since this is already an existing strength in 'science & services' regions.

Overall Conclusions

Certainly, there are multiple non-policy factors that play an important role in explaining the innovation performance of regions. Nonetheless, all empirical work performed under the framework of the Regional Innovation Monitor strongly suggests that effective policies can make an important difference with a view to a region's development. While not every measure will make a substantial difference on its own, in particular the detailed regional reports confirm that inaction is a non-favourable option – in particular for those regions where innovation oriented business models are not yet very prevalent. Furthermore, the RIM repository documents that dynamic development goes along with good policy practice, i.e. that policy making is not limited to the provision of infrastructure in lagging but can also add to the performance of leading regions. While in innovation leaders we find 26% of measures deemed to have yielded positive outcomes only 15% of measures in moderate, and 9% of measures in modest innovators were thus positively assessed. Apparently, good policy making remains a challenge where it is most needed so that it remains advisable to monitor policy trends and improve the availability of robust evidence-based assessments.

Just as evidently, however, there are no simple solutions to complex issues. On the one hand, the above suggests that lagging regions should study the practices of leading regions which have already put effective policies in place. On the other hand, however, policy learning should not take place without studying and taking into account the specific regional preconditions beforehand. As already highlighted in the first Regional Innovation Monitor Annual Report, it remains necessary to develop a balanced policy mix and to avoid indiscriminately following perceived 'good practices' which, in fact, may only be 'common practices'. One of the current issues of concern in this regard is

the increasing attention focused on financial instruments in lagging regions. As there is no evidence that this form of support is in itself more effective than others, lessons learnt from experiences with e.g. the launch of too many cluster policies in the past should at this time be taken into account. While there is definitely a need for policy learning with regard to many measures, this learning should include an improved understanding of their prerequisites, such as for example governance aspects and the distinct profile of the regional innovation system.

In regions with competences in the area of higher education policies one would expect to identify a significant number of policy actions aimed at the attraction of research personnel at universities, the transfer of skilled graduates to local firms as well as skills development on the job through training programmes. In practice, the RIM repository suggests that this proves not always to be the case. Arguably, there are several reasons for this situation. Firstly, support for higher education (and thus 'improving skills for innovation') is many cases provided through institutional funding and not through dedicated programmes. Further, it may in part be allocated from the national level Secondly, the RIM repository focuses on the six most important R&D measures per region, which may have resulted in an omission of some measures in the less obviously R&D related field of education and human capital. Nonetheless, support for improving skills for innovation will have to be a priority in many regions – especially in those where innovation-oriented business models are not yet very prevalent and localised science-industry co-operation remain rare. In this regard, it is important to realise that good human capital policies are one of the most central preconditions to make many other regional innovation policies work. Hence, regional innovation policies and (higher) education policies are natural issues to be coordinated at the EC level.

Finally, a more responsive approach to regional governance will be required, to lead, coordinate and implement systemic changes by means of regional innovation policies. In many regions, stakeholders are willing to participate in both process of strategy design and in individual support initiatives. Inevitably, processes of stakeholder involvement will not come without a certain degree of friction and require a certain degree of political leadership. Nonetheless, the RIM repository and detailed regional reports suggest that the involvement of existing grass-roots measures and or networks of actors will in many cases prove a very fertile ground for policy to build upon. Without involving the future beneficiaries in the process of its design, all regional innovation policy will have difficulties to become relevant for the actual drivers of economic development in the regions. Beyond providing framework conditions and infrastructure, responsive regional innovation policy should aim to play the role of a catalyst rather than one of a creator.

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Appendix A Regions according to the classification of Regional Innovation Monitor and Regional Innovation Scoreboard

Regional Innovation Scoreboard	Regional Innovation Monitor		
	World-class performers	**Regions with strong focus on industrial employment**	**Regions with a focus on the service sector and public R&D**
Leader	21	6	11
	• Wien AT13 • Baden-Württemberg DE1 • Bayern DE2 • Berlin DE30 • Hessen DE7 • Niedersachsen DE90 • Sachsen DED • Hovedstaden DK01 • Etelä-Suomi FI18 • Länsi-Suomi FI19 • Pohjois-Suomi FI1A • Île de France FR10 • Rhône-Alpes FR71 • Auvergne FR72 • Noord-Brabant NL41 • Stockholm SE01 • Östra Mellansverige SE02 • Sydsverige SE04 • Västsverige SE0A • Eastern UKH1 • South East UKJ	• Burgenland (A) AT11 • Niederösterreich AT12 • Vlaams Gewest BE20 • Nordrhein-Westfalen DEA • Rheinland-Pfalz DEB • Midtjylland DK04	• Région de Bruxelles-Capitale BE10 • Praha CZ01 • Bremen DE50 • Hamburg DE60 • Saarland DEC • Thüringen DEG • Utrecht NL31 • Noord-Holland NL32 • Zuid-Holland NL33 • Lisboa PT14 • Övre Norrland SE08
Follower	6	31	25
	• Kärnten AT21 • Steiermark AT22 • Oberösterreich AT31 • Tirol AT33 • Strední Cechy CZ02 • Midi-Pyrénées FR62	• Vorarlberg AT34 • Région Wallonne BE30 • Severovýchod CZ05 • Jihovýchod CZ06 • Syddanmark DK03 • Pais Vasco ES21 • Comunidad Foral de Navarra ES22 • Aragón ES24 • Cataluña ES51 • Itä-Suomi FI13 • Franche-Comté FR43 • Pays de la Loire FR51 • Bretagne FR52 • Aquitaine FR61 • Limousin FR63 • Border, Midlands and Western IE01 • Southern and Eastern IE02	• Salzburg AT32 • Brandenburg DE4 • Mecklenburg-Vorpommern DE80 • Sachsen-Anhalt DEE • Schleswig-Holstein DEF • Sjælland DK02 • Nordjylland DK05 • Comunidad de Madrid ES30 • Lorraine FR41 • Alsace FR42 • Poitou-Charentes FR53 • Languedoc-Roussillon FR81 • Provence-Alpes-Côte d'Azur FR82 • Corse FR83 • Attiki GR31 • Provincia Autonoma

Regional Innovation Scoreboard	Regional Innovation Monitor		
	World-class performers	**Regions with strong focus on industrial employment**	**Regions with a focus on the service sector and public R&D**
		• Piemonte ITC1 • Lombardia ITC4 • Veneto ITD3 • Emilia-Romagna ITD5 • Overijssel NL21 • Limburg (NL) NL42 • Centro (PT) PT13 • Mellersta Norrland SE07 • Småland med öarna SE09 • North East (ENGLAND) UKC • North West (ENGLAND) UKD • East Midlands (ENGLAND) UKF • West Midlands (ENGLAND) UKG • South West (ENGLAND) UKK	Trento ITD2 • Friuli-Venezia Giulia ITD4 • Lazio ITE4 • Groningen NL11 • Gelderland NL22 • Flevoland NL23 • Yorkshire and The Humber UKE • London UKI • Wales UKL • Scotland UKM
Moderate	0	26	15
		• Jihozápad CZ03 • Severozápad CZ04 • Strední Morava CZ07 • Moravskoslezsko CZ08 • Galicia ES11 • Cantabria ES13 • La Rioja ES23 • Castilla y León ES41 • Comunidad Valenciana ES52 • Bassin Parisien FR21 • Picardie FR22 • Haute-Normandie FR23 • Centre FR24 • Basse-Normandie FR25 • Bourgogne FR26 • Valle d'Aosta/Vallée d'Aoste ITC2 • Provincia Autonoma Bolzano-Bozen ITD1 • Marche ITE3 • Abruzzo ITF1 • Basilicata ITF5 • Friesland (NL) NL12 • Drenthe NL13 • Zeeland NL34 • Norte PT11 • Norra Mellansverige SE06	• Principado de Asturias ES12 • Nord - Pas-de-Calais FR30 • Közép-Magyarország HU10 • Liguria ITC3 • Toscana ITE1 • Umbria ITE2 • Campania ITF3 • Puglia ITF4 • Sicilia ITG1 • Sardegna ITG2 • Mazowieckie PL12 • Algarve PT12 • Alentejo PT15 • Bucuresti - Ilfov RO32 • Bratislavský kraj SK01

Regional Innovation Scoreboard	Regional Innovation Monitor		
	World-class performers	**Regions with strong focus on industrial employment**	**Regions with a focus on the service sector and public R&D**
		• Northern Ireland UKN	
Modest	0	38	20
		• Severozapaden BG31 • Severen tsentralen BG32 • Yugoiztochen BG34 • Yuzhen tsentralen BG42 • Castilla-la Mancha ES42 • Región de Murcia ES62 • Sterea Ellada GR24 • Közép-Dunántúl HU21 • Nyugat-Dunántúl HU22 • Dél-Dunántúl HU23 • Észak-Magyarország HU31 • Észak-Alföld HU32 • Dél-Alföld HU33 • Molise ITF2 • Lódzkie PL11 • Malopolskie PL21 • Slaskie PL22 • Lubelskie PL31 • Podkarpackie PL32 • Swietokrzyskie PL33 • Podlaskie PL34 • Wielkopolskie PL41 • Lubuskie PL43 • Dolnoslaskie PL51 • Opolskie PL52 • Kujawsko-Pomorskie PL61 • Warminsko-Mazurskie PL62 • PomorskiePL63 • Nord-Vest RO11 • Centru RO12 • Nord-Est RO21 • Sud-Est RO22 • Sud - Muntenia RO31 • Sud-Vest Oltenia RO41 • Vest RO42 • Západné Slovensko SK02 • Stredné Slovensko SK03 • Východné Slovensko SK04	• Severoiztochen BG33 • Yugozapaden BG41 • Extremadura ES43 • Illes Balears ES53 • Andalucia ES61 • Canarias (ES) ES70 • Anatoliki Makedonia, Thraki GR11 • Kentriki Makedonia GR12 • Dytiki Makedonia GR13 • Thessalia GR14 • Ipeiros GR21 • Ionia Nisia GR22 • Dytiki Ellada GR23 • Peloponnisos GR25 • Voreio Aigaio GR41 • Notio Aigaio GR42 • Kriti GR43 • Calabria ITF6 • Zachodniopomorskie PL42 • Região Autónoma da Madeira (PT) PT30