

HIGH LEVEL GROUP REFLECTING ON FUTURE COHESION POLICY

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OUTCOME INDICATORS – COMPLEMENTARY NOTE 1*

This document has been prepared by Fabrizio Barca and Philip McCann as the basis for a discussion with experts as part of a general reflection process on the future of cohesion policy. It does not prejudge in any way the final position of DG Regional Policy or the Commission on these questions

Outcome indicators for the Thematic priorities addressing the Europe 2020 Objective “Improving the conditions for innovation, research and development”. Examples

1 PRINCIPLES

One of the five objectives of Europe 2020 is *Improving the conditions for innovation, research and development*. The aspects dealt with in this note relate primarily to the technical and organisational characteristics of innovation, and in particular to the relationship between issues of science, technology, R&D, and firm performance ¹.

The required outcome indicators for Operational Programmes (and Partnership Contracts) and projects that improve the conditions for innovation, research and development, must capture a complex process of change. It is extremely difficult to measure regional innovation by means of one single indicator. Perhaps new product count information comes closest to the ideal world but the high costs involved in developing such data prohibit their regular collection (Varga 1998). Innovation surveys could also serve the goal quite well but unfortunately Community Innovation Survey (CIS) data are not representative regionally in most of the European countries (IAREG 2008).

Furthermore, regional innovation is a means to an end (viz. regional development). This poses further complications because of the public good nature of innovation which results in the effect of innovation typically expanding beyond the region in which the innovation was made. Finally, there is the complex distinction between the development of new products and technologies on the one hand and their adoption on the other hand. Tellingly, Jovanovic referred to adoption (which is oftentimes neglected in much of the discussion) as an innovation in itself.

With no single innovation or smart growth measure available, information on different aspects of the process have to be used to portray innovation. This process may characterize itself: by changes in firm behavior, such as firm growth or firm foundation; by scientific or technological developments, such patents, scientific publications; by the development level of the regional innovation infrastructure, or by the intensity of interactions between the actors of the regional innovation system within the region and their interactions with actors located in other regions. It is a common experience that variables reflecting these aspects of the

* The note accompanies the discussion paper “Outcome indicators and targets. Towards a performance oriented EU cohesion policy”.

¹ Issues of social innovation are not dealt with in detail in this note, although such issues can be incorporated into this type of typology.

innovation process are very much correlated. Thus it is perhaps more difficult to select the most representative ones than developing the list of many outcome indicators that captures certain features of regional innovation. Data availability also constrains even the most brilliant indicator ideas.

The aim of this exercise is to suggest some example of outcome indicators in this field to be used for the evaluation of EU Cohesion Policy interventions in the coming planning period. The approach suggested here is minimalist (a small but representative set of indicators is used), conservative (novel, never proven indicators are not suggested) and realistic (data availability constraints are acknowledged). The set of indicators presented below also reflects the recent attempts by the European Commission (DG REGIO 2010, DG RDT 2010, Hollanders et al., 2009) and by the OECD (OECD 2010a) to identify the best innovation outcome indicators.

However, in a small number of cases we do explicitly suggest that new indicators can be produced at relatively low cost by expanding existing data collections. This is the case of the CIS, which does not cover all European regions in a uniform way. In this case, we suggest that the Structural Funds include provisions for generating new statistical data, expanding the available data collection procedure.

2 REGIONAL TYPOLOGY

In the light of these issues, developing EU Cohesion Policies capable of promoting *smart growth* requires us to think about how research and development and innovation manifest themselves differently in different types of regions. We know that the interactions between innovation, R&D and growth are specific to the types of places, and following a *place-based* logic, these place-specific contextual issues should be incorporated explicitly in design of the Operational Programme and the embedded projects so as to ensure that they are tailored to the context.

With reference to many different classifications of regions, one had to be selected here to present the examples. A regional typology for innovation has been chosen which is largely based on the most recent attempt by the OECD (OECD 2010a), in its turn quite close to the classification of a highly cited study by Tödtling and Trippl (2005). This categorization also relates to a very recent classification of regional innovation policies developed by the OECD (OECD 2010b). The three main regional categories employed here are: *knowledge hubs*, *industrial production zones* and *peripheral regions*. In the examples listed in the tables below, we link the types of regions to the most appropriate outcome indicators for measuring the innovation and R&D outcomes in those regions.

The importance of this typology for our purposes is also that it becomes possible to establish a linkage between the overall regional typology and the appropriate mix of research and innovation policies. The notion of smart specialization (Foray, David and Hall, 2009) implies that regions are able to identify, through an entrepreneurial process, the areas where they can better innovate and build up international comparative advantages. This is likely to take different forms depending on whether the region is already included in the worldwide circulation of knowledge (knowledge hub), or rather has an established industrial base and/or a lagging productive sector. Furthermore, the need to introduce a conditionality principle whereby all Member States commit to introduce in their projects incentive devices to align innovation actors and to foster policy learning requires that regional governments define sets of outcome indicators to be used by these incentive devices.

The list of examples of outcome indicators presented below reflects aspects of innovation in each regional class though with a different relevance for each class. (For example scientific publications come closer to innovation in knowledge hubs than in peripheral regions).

3 MATCHING INDICATORS TO POLICIES

The choice of outcome indicators depends on the specific policy through which the improvement of innovation and research is pursued, and on the objective of such policy.

The theory and empirics of innovation offer several conceptualizations that are useful to establish a robust base for indicators. First of all, the Schumpeterian distinction between an entrepreneurial regime and an established (“routine”) innovation regime has been repeatedly confirmed in many studies of industrial dynamics. It is then important to distinguish the case in which innovation is brought to the market by new firms (entrant firms) from the case in which existing firms introduce the innovation (incumbent firms). Correspondingly, innovation policies may want to foster the process of creation, financing, support, organization, growth of new firms, or rather consolidate and expand the activities of established firms. Several policy experiences suggest that the goals, instruments and tools differ significantly in the two cases.

Second, another distinction has been introduced in the literature and adopted in many statistical systems, i.e. the R&D/non-R&D innovation dichotomy. R&D innovation is pursued by firms in those industries or market niches where technological opportunities are larger, the knowledge base is more closely linked to natural or engineering sciences, and the returns from private investment can be, at least partially, appropriated. International comparative data on the distribution of R&D/sales ratios suggest that this is the case only in a small number of industries. In other industries, on the contrary, firms invest much less in R&D, or even do not invest at all, but innovate either by acquiring new technology produced by others (suppliers, equipment producers), or modifying products according to suggestions of customers, or using industrial design. Available evidence suggests that non-R&D innovation is pervasive, although firms with persistent R&D investment tend to exhibit better long term performance. Furthermore, the ratio between R&D and non-R&D innovation expenditure grows almost monotonically with firm size. This distinction is not fixed once and for all. It is possible that firms that used to innovate without R&D start to invest into R&D, or that invest in a discontinuous way.

These two distinctions are particularly important for those regions (mainly in the established industrial base and peripheral region categories) in which the innovation systems is not yet fully developed, so that the trade-offs in policy goals are more stringent (for example, given budget constraints, there may be a conflict between supporting innovation in mature industries and fostering innovation in startup companies).

Finally, indicators should be distinguished according to whether they are suitable to be used to focus objectives and progress of whole Operational Programmes or of specific projects.

4 LIST OF INDICATORS AND THEIR USE IN THE TABLE

In the table below examples are provided for outcome indicators for a set of five Thematic Priorities in which the EU 2020 objective “Improving the conditions for innovation, research and development” can be articulated. The five Thematic Priorities are those presented by the European Commission in the informal document “Thematic concentration for cohesion policy post 2013”, plus one Thematic Priority denominated “Removing bottlenecks in key network infrastructures” which should be included under this objective. Adjustments would obviously

be needed if the classification were to be changed, but the logic of the exercise would be the same.

In the tables, the examples of outcome indicators, are presented according to:

- the specific policy/objective through which each Thematic Priority is pursued;
- the typology of region (as sketched in section 2);
- whether they refer to Operational Programmes (and Partnership Contract) or to individual projects.

The outcome indicators used in the tables (many of which are already included in the European innovation Scoreboard) are the following ones, grouped in six categories:

1. Overall measure

- Nativity of firms in knowledge intensive sectors. Source: Eurostat (with modifications)
- High growth firms. Definition not yet defined (see discussion on new indicators under Europe 2020)
- SMEs introducing product or process innovations (% of SMEs). Source: Eurostat (CIS)
- SMEs introducing marketing or organisational innovations (% of SMEs). Source: Eurostat (CIS)
- Firms that invest into R&D for the first time in the last 3 years (% of R&D performers). Source: Eurostat (modification of CIS)

2. Intermediate measures

- Patents per GDP. Source: Eurostat
- Scientific publications per thousands of R&D employment in the public sector. Source: Eurostat
- Non-R&D innovation expenditures (% of turnover). Source: Eurostat (CIS)

3. Regional innovation infrastructure measures (actors of the regional innovation system)

- Employment in knowledge intensive sectors. Source: Eurostat
(High and medium high technology manufacturing, high technology services, knowledge intensive market services (NACE 1.1 sectors 61, 62, 70, 71, 74), financial services (NACE 1.1 sectors 65, 66, 67), amenity services – health, education, recreation (NACE 1.1 sectors 80, 85, 92))

4. Internal connectivity measures

- Percentage of patents of total patents with co-inventors located in the region. Source: OECD
- Total number of collaboration partners from the region. Source: Eurostat (CIS)

6. External connectivity measures

- Percentage of patents of total patents with co-inventors located in other regions. Source: OECD
- Percentage of publications of total publications with co-authors located in other regions. Source: OECD
- Total number of collaboration partners located in other regions. Source Eurostat (CIS)
- Share of households with broadband access. Source: Eurostat
- Physical accessibility. Source: ESPON multimodal accessibility measure

The essential context or background measure is Regional labor productivity (GDP/employment). It provides an overall index of the regional performance context, but it is far too broad in nature to be used as a policy-related outcome indicator. This is because it is subject to such a complex range of influences, many of which are unrelated to the policy design, logic, levers, and many of which are also much more powerful in nature than the policy regime, such as globalization processes. As such, labour productivity cannot be used as an outcome indicator. Total Factor Productivity would also be the alternative contextual or background measure, although the diverse approaches to its calculation as well as in the estimation of capital stock data suggest that the more easily accessible labor productivity variable is the most useful context background variable. DG Regio (2010) observes that in order to match GDP and employment data regionally employment information from the economics accounts instead of the Labor force statistics should be applied.

5 A COMMENT ON TARGET SETTING

The suggested indicators should be used as a source for focusing policy attention and reporting about progress. However, they could also be used for setting targets. When negotiating with the European Commission, regions could build up a set of target indicators that consistently fit with their overall typology and stage of growth, reflecting a strategy for smart specialization.

For example, peripheral regions engaged in processes of catching up find themselves into a structural condition in which the established industrial base does not invest systematically in R&D and the share of knowledge intensive sectors is low. Thus it would not realistic to set a target indicator of increasing the R&D/GDP ratio beyond a steady state rate. Rather, it might be sensible to set a target of increasing the number of firms that did not carry out R&D previously and started to invest, perhaps due to the right policy measures. Alternatively, it might be better to strengthen the capabilities of non R&D innovators.

Or it might not be realistic to set a target of increasing the number of innovative new firms, because in lagging regions there are not endogenous sources of entrepreneurship in innovative sectors. Rather, it might be appropriate to set a goal of increasing the flow of startups coming from public sector research. However, it is well known that the timing for public research to generate a steady flow of new entrepreneurial activities is in the order of at least one decade. The policy framework should reflect this long term orientation. Furthermore, since these new firms live in a deprived economic environment, there must be appropriate policy mixes to support their growth, for example through strong internationalization policies.

6 RELEVANT REGIONAL STATISTICS

The tables are supplemented by a list of regional statistics that could be of use in describing the context in which Cohesion policy takes place:

- § Regional labor productivity
- § Natality of firms in knowledge intensive sectors
- § High growth firms
- § SMEs introducing product or process innovations
- § SMEs introducing marketing or organizational innovations
- § Patents per GDP
- § Scientific publications per thousands of R&D employment
- § Non- R&D innovation expenditures
- § Employment in knowledge intensive sectors or clusters
- § Percentage of patents of total patents with co-investors located in the region
- § Percentage of patents of total patents with co-investors located in other regions
- § Percentage of publications of total publications with co-authors located in other regions

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**EUROPE 2020 OBJECTIVE “IMPROVING THE CONDITIONS FOR INNOVATION, RESEARCH AND DEVELOPMENT”.
EXAMPLES**

I. Examples for Knowledge hubs

Thematic Priorities and policies	Outcome indicators		
	Operational Programme level	Project level	
1. Strengthening research and technological development			
	Strengthening the scientific base	<p>Scientific publications per thousands of R&D employment in the public sector. Source: <i>Eurostat</i></p>	<p>Scientific publications per thousand euro spent in the project Source: <i>survey on recipients or administrative data</i></p>
	Fostering international research collaborations	<p>Percentage of publications of total publications with co-authors located in other regions Source: <i>OECD</i></p>	<p>Percentage of publications of total publications in the project with co-authors located in other regions Source: <i>survey on recipients or administrative data</i></p>
Supporting industrial R&D	<p>Patents per GDP Patents per worker Source: <i>Eurostat</i></p> <p>For R&D performers: R&D expenditure per worker Innovation expenditure per worker % firms introducing product innovation % firms introducing process innovation Source: <i>CIS (NUTS 2)</i></p>	<p>R&D expenditure Investment in intangible assets Source: <i>survey on firms receiving and non-receiving public subsidies</i></p>	

Fostering the commercialization of public research		Patents licensed to industry Cooperative industry-academia research agreements Number of academic spin-offs Source: <i>survey on firms</i>
Encouraging the R&D investment of firms not previously performing R&D		R&D expenditure of firms not having performed R&D in the last 3 years Source: <i>survey on firms receiving and non-receiving public subsidies</i>
Strengthening the science base in a knowledge hub region for promoting smart specialization in a partner manufacturing region ²	Scientific publications per thousands of R&D employment Number of of co-patent applications filed with a partner in the manufacturing region as a percentage of the total regional patent applications % firms introducing product innovations % firms introducing process innovations	Number of scientific publications in the targeted generic field Number of co-patent applications filed with the partner in the manufacturing region as a percentage of the total regional patent applications Number of firms introducing product innovations Number of firms introducing process innovations

² Target region: a knowledge hub region. Instrument: R&D subsidy for developing a generic field of research applicable for innovation in an industrial region undergoing restructuring

2. Promoting innovation and smart specialization		
Fostering the creation of new firms in knowledge-intensive sectors ³	<p>Natality of firms in knowledge intensive sectors</p> <p>Growth of employment in knowledge intensive sectors Source: <i>Eurostat</i></p>	<p>Number of entrepreneurial ideas identified in the scouting stage</p> <p>Number of firms incubated in incubators and S&T parks</p> <p>Number of firms undertaking coaching and acceleration programmes Source: <i>survey</i></p>
Supporting the growth of new firms in knowledge-intensive sectors		<p>Number of firms in the project accessing seed capital</p> <p>Number of firms in the project accessing VC Volume of capital raised by firms in the project Source: <i>survey + EVCA for comparative analysis</i></p> <p>Number of new firms in knowledge intensive sectors exporting and/or investing abroad</p> <p>Volume of export and/or FDI outflow Source: <i>survey</i></p>
Supporting fast growth of companies (in all sectors)	<p>Number of firms which show an annual growth >20% over a period of 3 years Source: <i>OECD–Eurostat, 2007</i></p>	

³ (High and medium high technology manufacturing, high technology services, knowledge intensive market services (NACE 1.1 sectors 61, 62, 70, 71, 74), financial services (NACE 1.1 sectors 65, 66, 67), amenity services – health, education, recreation (NACE 1.1 sectors 80, 85, 92))

<p>Intervention: Supporting non R&D innovation</p>	<p><i>(For non-R&D performers)</i></p> <p>Innovation expenditure per worker Non-R&D innovation expenditure per worker % firms introducing product innovation % firms introducing process innovation Source: <i>CIS (NUTS 2)</i></p> <p>Number of trademarks Number of designs Source: Patent offices</p>	<p>Number of product innovations introduced by the firms supported</p> <p>Number of process innovations introduced by the firms supported</p> <p>Source: <i>survey</i></p>
<p>Promoting the internationalization of firms due to advantages from smart specialization</p>	<p>Export /GDP Source: <i>Eurostat</i></p> <p>FDI outflow/GDP Source: <i>IMF (UNCTAD)</i></p>	<p>Share of firms exporting for the first time (or exporting on a systematic basis) due to the project Source: <i>survey</i></p> <p>Share of firms investing abroad for the first time due to the project Source: <i>survey</i></p>
<p>3.Thematic Priority: Enhancing accessibility to and use and quality of information and communication technologies</p> <p>Ensuring access to broadband services for all</p>	<p>Share of households with broadband access Share of firms with broadband access Source: <i>Eurostat</i></p>	<p>Number of households (firms) accessing broadband for the first time due to the project Source: <i>survey</i></p>

<p>4.Thematic Priority: Removing obstacles to the growth of SMEs</p> <p>Fostering the innovation capabilities of SMEs</p> <p>Removing barriers to funding for SMEs</p>	<p>SMEs introducing product or process innovations (% of SMEs) Source: <i>Eurostat (CIS)</i></p> <p>SMEs introducing marketing or organisational innovations (% of SMEs) Source: <i>Eurostat (CIS)</i></p> <p>Share of SMEs being rationed by banks in the provision of credit Source: <i>survey</i></p>	<p>Share of SMEs being rationed by banks in the provision of credit Source: <i>survey</i></p>
<p>5.Removing bottlenecks in key network infrastructures</p> <p>Removing bottlenecks in the transport networks</p>		<p>Average travel time of passengers between major urban centers by modality of transport</p> <p>Average travel time of passengers between urban centers and agglomeration settlements (commuting time)</p>

II. *Examples for Industrial Production Zones*

Thematic Priorities and policies	Operational Programme level	Project level
<p>2. Thematic Priority: Promoting innovation and smart specialization</p> <p>Fostering the creation of new firms in knowledge-intensive sectors⁴</p> <p>Supporting the growth of new firms in knowledge-intensive sectors</p>	<p>Natality of firms in knowledge intensive sectors</p> <p>Growth of employment in knowledge intensive sectors Source: <i>Eurostat</i></p>	<p>Number of entrepreneurial ideas identified in the scouting stage</p> <p>Number of firms incubated in incubators and S&T parks</p> <p>Number of firms undertaking coaching and acceleration programmes Source: <i>survey</i></p>
		<p>Number of firms in the project accessing seed capital</p> <p>Number of firms in the project accessing VC Volume of capital raised by firms in the project Source: <i>survey + EVCA for comparative analysis</i></p> <p>Number of new firms in knowledge intensive sectors exporting and/or investing abroad</p> <p>Volume of export and/or FDI outflow Source: <i>survey</i></p>

⁴ (High and medium high technology manufacturing, high technology services, knowledge intensive market services (NACE 1.1 sectors 61, 62, 70, 71, 74), financial services (NACE 1.1 sectors 65, 66, 67), amenity services – health, education, recreation (NACE 1.1 sectors 80, 85, 92))

Supporting fast growth of companies (in all sectors)	Number of firms which show an annual growth >20% over a period of 3 years Source: <i>OECD–Eurostat, 2007</i>	
Supporting non R&D innovation	<p><i>(For non-R&D performers)</i></p> <p>Innovation expenditure per worker Non-R&D innovation expenditure per worker % firms introducing product innovation % firms introducing process innovation Source: <i>CIS (NUTS 2)</i></p> <p>Number of trademarks Number of designs Source: <i>Patent offices</i></p>	<p>Number of product innovations introduced by the firms supported</p> <p>Number of process innovations introduced by the firms supported</p> <p>Source: <i>survey</i></p>
Promoting the internationalization of firms due to advantages from smart specialization	<p>Export /GDP Source: <i>Eurostat</i></p> <p>FDI outflow/GDP Source: <i>IMF (UNCTAD)</i></p>	<p>Share of firms exporting for the first time (or exporting on a systematic basis) due to the project Source: <i>survey</i></p> <p>Share of firms investing abroad for the first time due to the project Source: <i>survey</i></p>
Fostering the innovation capabilities of SMEs	<p>SMEs introducing product or process innovations (% of SMEs) Source: <i>Eurostat (CIS)</i></p> <p>SMEs introducing marketing or organisational innovations (% of SMEs) Source: <i>Eurostat (CIS)</i></p>	

<p>Promoting smart specialization in a manufacturing region with a partner knowledge hub region⁵</p>	<p>Number of co-patent applications filed with the partner in the knowledge hub region as a percentage of total regional patent applications Source: <i>EPO/Eurostat</i></p> <p>% firms introducing product innovation % firms introducing process innovation Source: <i>Eurostat (CIS)</i></p>	<p>Number of co-patent applications filed with the partner in the knowledge hub region</p> <p>Number of firms introducing product innovations</p> <p>Number of firms introducing process innovations</p> <p>Source: <i>survey</i></p>
<p>3.Thematic Priority: Enhancing accessibility to and use and quality of information and communication technologies</p> <p>Ensuring access to broadband services for all</p>	<p>Share of households with broadband access Share of firms with broadband access Source: <i>Eurostat</i></p>	<p>Number of households (firms) accessing broadband for the first time due to the project Source: <i>survey</i></p>
<p>4.Removing obstacles to the growth of SMEs</p> <p>Removing barriers to funding for SMEs</p>	<p>Share of SMEs being rationed by banks in the provision of credit Source: <i>survey</i></p>	<p>Share of SMEs being rationed by banks in the provision of credit Source: <i>survey</i></p>
<p>5. Removing bottlenecks in key network infrastructures</p>		
<p>Removing bottlenecks in the transport networks</p>		<p>Average travel time of passengers between major urban centers by modality of transport</p> <p>Average travel time of passengers between urban centers and agglomeration settlements (commuting time)</p>

⁵ Target region: a manufacturing region. Instrument: grants for joint technology development or seed capital financing.

III. *Examples for Peripheral Regions*

Thematic Priorities and policies	Operational Programme level	Project level
1. Thematic Priority: Strengthening research and technological development Strengthening the scientific base Fostering international research collaborations Supporting industrial R&D Fostering the commercialization of public research	Scientific publications per thousands of R&D employment in the public sector. Source: <i>Eurostat</i>	Scientific publications per thousand euro spent in the project Source: <i>survey on recipients or administrative data</i>
	Percentage of publications of total publications with co-authors located in other regions Source: <i>OECD</i>	Percentage of publications of total publications in the project with co-authors located in other regions Source: <i>survey on recipients or administrative data</i>
	Patents per GDP Patents per worker Source: <i>Eurostat</i> For R&D performers: R&D expenditure per worker Innovation expenditure per worker % firms introducing product innovation % firms introducing process innovation Source: <i>CIS (NUTS 2)</i>	R&D expenditure Investment in intangible assets Source: <i>survey on firms receiving and non-receiving public subsidies (counterfactual)</i>
		Patents licensed to industry Cooperative industry-academia research agreements Source: <i>survey on firms</i>

<p>Encouraging the R&D investment of firms not previously performing R&D</p>		<p>R&D expenditure of firms not having performed R&D in the last 3 years Source: <i>survey on firms receiving and non-receiving public subsidies (counterfactual)</i></p>
<p>2. Thematic Priority: Promoting innovation and smart specialization</p> <p>Fostering the creation of new firms in knowledge-intensive sectors⁶</p> <p>Supporting the growth of new firms in knowledge-intensive sectors</p>	<p>Natality of firms in knowledge intensive sectors</p> <p>Growth of employment in knowledge intensive sectors Source: <i>Eurostat</i></p>	<p>Number of entrepreneurial ideas identified in the scouting stage</p> <p>Number of firms incubated in incubators and S&T parks</p> <p>Number of firms undertaking coaching and acceleration programmes Source: <i>survey</i></p> <p>Number of firms in the project accessing seed capital</p> <p>Number of firms in the project accessing VC Volume of capital raised by firms in the project Source: <i>survey + EVCA for comparative analysis</i></p> <p>Number of new firms in knowledge intensive sectors exporting and/or investing abroad</p> <p>Volume of export and/or FDI outflow Source: <i>survey</i></p>

⁶ (High and medium high technology manufacturing, high technology services, knowledge intensive market services (NACE 1.1 sectors 61, 62, 70, 71, 74), financial services (NACE 1.1 sectors 65, 66, 67), amenity services – health, education, recreation (NACE 1.1 sectors 80, 85, 92))

Supporting fast growth of companies (in all sectors)	Number of firms which show an annual growth >20% over a period of 3 years Source: <i>OECD–Eurostat, 2007</i>	
Supporting non R&D innovation	<p><i>(For non-R&D performers)</i></p> <p>Innovation expenditure per worker Non-R&D innovation expenditure per worker % firms introducing product innovation % firms introducing process innovation Source: <i>CIS (NUTS 2)</i></p> <p>Number of trademarks Number of designs Source: <i>Patent offices</i></p>	
Promoting the internationalization of firms due to advantages from smart specialization	<p>Export /GDP Source: <i>Eurostat</i></p> <p>FDI outflow/GDP Source: <i>IMF (UNCTAD)</i></p>	<p>Share of firms exporting for the first time (or exporting on a systematic basis) due to the project Source: <i>survey</i></p> <p>Share of firms investing abroad for the first time due to the project Source: <i>survey</i></p>
Fostering the innovation capabilities of SMEs	<p>SMEs introducing product or process innovations (% of SMEs) Source: <i>Eurostat (CIS)</i></p> <p>SMEs introducing marketing or organisational innovations (% of SMEs) Source: <i>Eurostat (CIS)</i></p>	

<p>3. Thematic Priority: Enhancing accessibility to and use and quality of information and communication technologies</p> <p>Ensuring access to broadband services for all</p>	<p>Share of households with broadband access Share of firms with broadband access Source: <i>Eurostat</i></p>	<p>Number of households (firms) accessing broadband for the first time due to the project Source: <i>survey</i></p>
<p>4. Removing obstacles to the growth of SMEs</p> <p>Removing barriers to funding for SMEs</p>	<p>Share of SMEs being rationed by banks in the provision of credit Source: <i>survey</i></p>	<p>Share of SMEs being rationed by banks in the provision of credit Source: <i>survey</i></p>
<p>5. Removing bottlenecks in key network infrastructures</p> <p>Removing bottlenecks in the transport networks</p>		<p>Average travel time of passengers between major urban centers by modality of transport</p> <p>Average travel time of passengers between urban centers and agglomeration settlements (commuting time)</p>