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## Abstract

This paper illustrates the results of a survey on the Smart Specialisation experience across European regions and countries. By collecting and analysing the views of national and regional authorities, the survey intended to take stock of Smart Specialisation Strategies implementation, identify critical issues and challenges while drawing some lessons and recommendations in light of the debate on the post-2020 Cohesion Policy. Overall, despite being considered particularly challenging in terms of policy intelligence, skills and capabilities for public authorities and other stakeholders, Smart Specialisation experience is positively valued by the vast majority of respondents. Substantial improvements are detected with respect to: stakeholder engagement, priority setting, concentration of funding, level of trust and emergence of innovation potential; whereas, more efforts are needed in relation to the quality and effectiveness of monitoring activities and strategies' outward-looking perspective. Further progress is still required as regards the policy regulatory framework, governance and institutional capabilities along with the involvement of relevant actors (notably SMEs and civil-society groups) who have remained at the margin of the decision making process thus far. With respect to the ultimate objective of the policy, national and regional actors are not observing significant progresses towards economic transformation yet. Respondents recommend to maintain the current policy framework for the future, while introducing new elements to improve strategies' efficacy and make Smart Specialisation more responsive to the specific needs of different territories.

# 1 Motivation and objectives

Four years after the implementation of the Smart Specialisation policy formally started as integral part of the 2014-2020 programming period of the European Cohesion policy, the time is now ripe to take systematic stock of this ambitious policy experience, and to identify its most critical issues and challenges, and derive some recommendations for the future Cohesion policy programming period.

The Territorial Development Unit of the Joint Research Centre of the European Commission carries out a constant analytical activity on the Smart Specialisation policy experience across European regions and countries. As a part of this line of work, the Unit decided to launch a survey to collect primary information from national and regional authorities responsible for Research and Innovation Strategies for Smart Specialisation (RIS3).

In particular, the survey aimed to gather respondents' general reflections on their RIS3 experience and observations on the future of the Smart Specialisation policy agenda. The specific objective of the survey is twofold: (i) identify areas of major improvements, critical issues and main challenges across the whole spectrum of RIS3 design and implementation activities considered comprehensively; and (ii) draw some lessons and recommendations to feed the debate on the post-2020 Cohesion policy.

The main results of the present study are organised in three blocks. First, we propose a summary view of the main results of the survey. We provide an overall assessment of the Smart Specialisation experience by national and regional authorities, while highlighting the main challenges related to the RIS3 exercise; we identify the policy areas and phases of the policy design and implementation processes where important improvements have been identified, together with the areas where further progress and efforts are needed; we also present the recommendations of respondents for the future of the Smart Specialisation policy. Second, we analyse more in detail national and regional authorities' views on three of the main features of Smart Specialisation: (1) governance and stakeholder engagement; (2) priority-setting and policy implementation; (3) monitoring and evaluation. Third and last, based on our reading of the survey results, we provide a set of recommendations for the future of Smart Specialisation in the context of European Cohesion policy.

The report is organised as follows: Section 2 presents the research methodology and data sources; Section 3 summarises the general results of the study; Section 4 presents the detailed results on the three main features of Smart Specialisation mentioned above; Section 5 finally illustrates our main policy recommendations.

# 2 Methodology and data sources

We explored the policy makers' perception of the RIS3 experience by gathering evidence from qualitative and quantitative data sources collected through a survey.

More specifically, we designed a survey to be submitted to national and regional authorities responsible for RIS3, structured in blocks of questions addressing the following aspects:

- General assessment and main challenges associated the RIS3 experience;
- Governance: effectiveness of the governance structure and resources;
- Stakeholder engagement: actors, contributions and challenges;
- Priority-setting, resource concentration and policy-mix;
- Monitoring and evaluation mechanisms: functions, data sources and obstacles to the use of monitoring and evaluation information;
- Recommendations for the future.

At the end of 2017 a link to the survey was sent out to the registered members of the S3 Platform website: more than 170 regions and 18 countries. 71 valid responses were received by April 2018. Respondents, mostly regional authorities, replied to the questionnaire composed of more than 40 questions, consisting of a combination of multiple-choice questions and, to a lesser extent, of open-ended questions. In the vast majority of cases respondents are part of the RIS3 management team in their respective administrations.

Southern and Eastern European territories are suitably represented in the survey; whereas the response rate from Central and Northern Europe is lower. By and large, this geography of responses reflects the existing differences in the level of involvement in the Smart Specialisation agenda across the EU, with a clear prevalence of the more engaged territories in the survey sample. Differences in the amount of funding available through the EU Cohesion Policy along with variations in the economic and innovation systems, path dependencies and policy legacies help to explain this diverse level of commitment of regions and countries.[1]

More in detail, we can observe that the highest number of replies came from Italy, where representatives of all regional administrations responded to the questionnaire. Likewise all Portuguese regions but one participated in the survey. Half of the Polish regions provided their views on the RIS3 process; one thirds in Spain; and three regions in Austria. Together with Poland, the responses from the Czech Republic, Romania and Bulgaria provided good coverage of the Eastern European countries. Four administrations responsible for national RIS3 (Portugal, Malta, Cyprus and Bulgaria) took part in the survey as well. Finally only 9 replies were received from Finland, Sweden and Germany all together; and there were also few responses from France (3 regions) and Greece (2 regions).

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[1] As noticed elsewhere (Kroll et al. 2014; Kroll, 2017), in general economically advanced and innovative regions with a long tradition in regional innovation policy and stakeholder engagement in policy making have retained a sceptical approach towards the RIS3 exercise. The pre-existence of regional innovation strategies, coordination mechanism and limited amount of funding available through European Structural and Investment Funds (ESIFs) are at the basis of the reluctance of these regions to align their strategies to the Smart Specialisation policy concept. By contrast, regions with weaker innovation capacities along with regions and countries with strong centralised planning tradition and negligible experience of stakeholder engagement (e.g. new Member States) have embraced with more enthusiasm the RIS3 agenda. Their greater commitment is also explained by the fact they receive a substantial share of ESIFs for research and innovation.

The majority of responses came from regions classified, according to the EU Cohesion Policy categorisation, as "more developed" (30), followed by "less developed regions" (23) and "transition" (14) (Figure 1).

**Figure 1. Number of respondents by territorial level and EU Cohesion Policy categorisation**
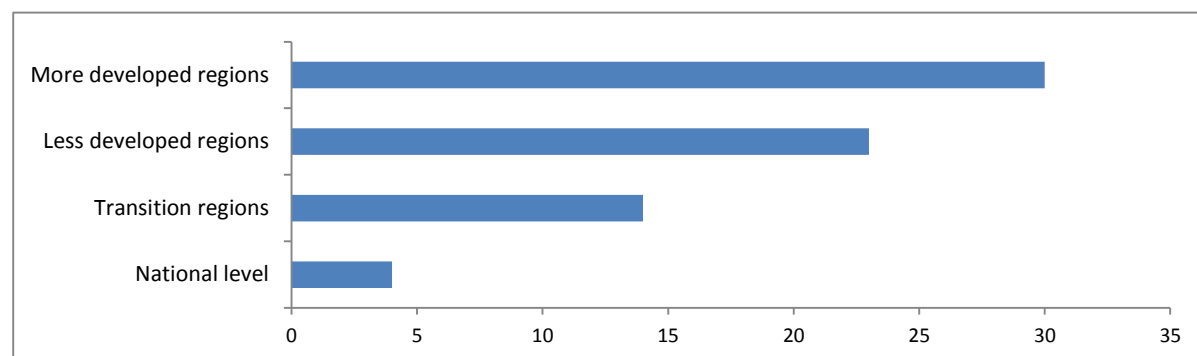


*Source*: authors' elaboration based on survey data.

## 3 General results

This section contains the main results of the survey. Firstly, it provides an overall assessment of the Smart Specialisation experience by national and regional authorities, while highlighting the main challenges related to the RIS3 exercise. Secondly, the domains where important improvements have been identified will be discussed along with those where further progress and efforts are needed. Finally, this section presents the main recommendations of respondents for the future of the Smart Specialisation policy experiment.

### *A challenging but satisfactory exercise*

Despite being considered by the vast majority of respondents (89%) particularly challenging and demanding in terms of policy intelligence, skills and capabilities for public authorities and stakeholders (Figure 2), the Smart Specialisation policy experience is positively valued across EU countries and regions thus far.

**Figure 2. Smart Specialisation is a demanding policy process**



| 11% | 44% | 45% |

0%　10%　20%　30%　40%　50%　60%　70%　80%　90%　100%

■ 3. Neither agree or disagree　■ 4. Agree　■ 5. Strongly agree
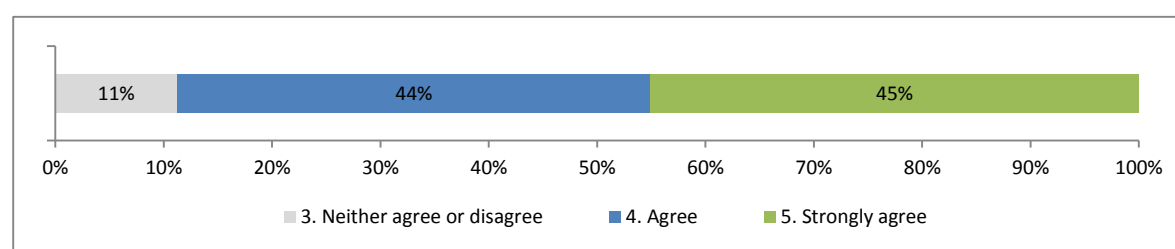
*Source*: authors' elaboration based on survey data.

More specifically, two thirds of respondents are extremely or very satisfied in relation to the RIS3 exercise in their territories; with the highest level of satisfaction (77%) expressed by the representatives of the more developed regions (Figure 3).
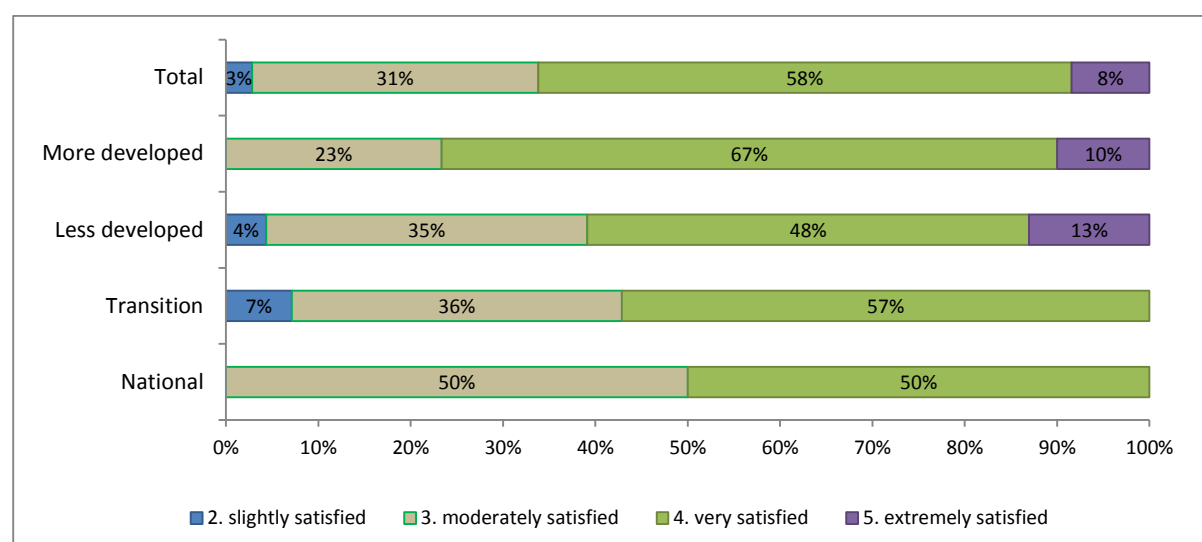
**Figure 3. Level of satisfaction with the RIS3 exercise**



| Total | 3% | 31% | 58% | 8% |
| More developed | | 23% | 67% | 10% |
| Less developed | 4% | 35% | 48% | 13% |
| Transition | 7% | 36% | 57% | |
| National | | 50% | 50% | |

0%　10%　20%　30%　40%　50%　60%　70%　80%　90%　100%

■ 2. slightly satisfied　□ 3. moderately satisfied　■ 4. very satisfied　■ 5. extremely satisfied

*Source*: authors' elaboration based on survey data.

***The integration of monitoring and evaluation mechanisms, governance and policy-mix definition are the most challenging aspect of the RIS3 design process***

The *Guide to Research and Innovation Strategies for Smart Specialisations* (European Commission, 2012) identifies six main steps for the design of Smart Specialisation Strategies (see Box 1). With respect to these steps, respondents reported major difficulties in monitoring and evaluation (54%) followed by governance (48%) and definition of a coherent policy mix, roadmaps and action plan (40%).

**Box 1. The six steps of the RIS3 design process**

Step 1: Analysis of regional potential for innovation-driven differentiation

Step 2: RIS 3 design and governance—ensuring participation and ownership

Step 3: Elaboration of an overall vision for the future of the region

Step 4: Selection of priorities for RIS3 and definition of objectives

Step 5: Definition of a coherent policy mix, roadmaps, and action plan

Step 6: Integration of monitoring and evaluation mechanisms

*Source*: European Commission (2012).

On the contrary, the least problematic step of the design process was the analysis of the territorial context and potential for innovation: 62% considered it very easy or easy to perform (Figure 4).

**Figure 4. Level of difficulty encountered with respect to the six steps of the RIS3 design process**
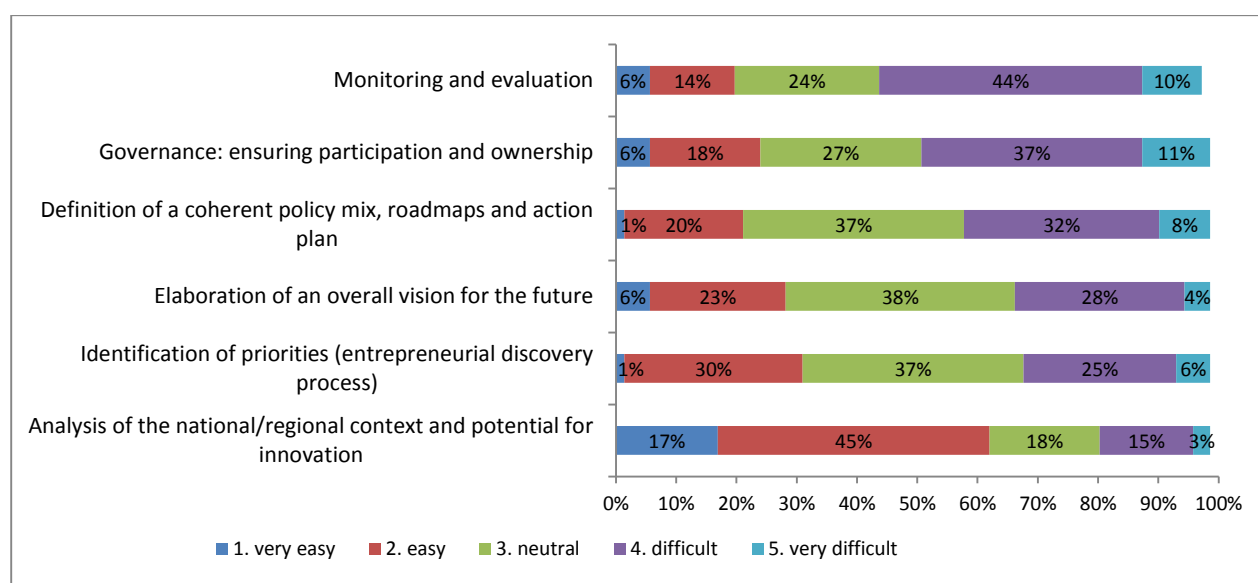


*Source*: authors' elaboration based on survey data.

Quite surprisingly the identification of priority areas, through the *entrepreneurial discovery process* (EDP), on which to concentrate research and innovation public support was not considered problematic: only 31% of respondents found it very difficult or difficult. However, there is evidence showing that this process has not always been fully understood and/or pursued by public authorities (see Foray, 2015; Gianelle *et al.*, 2018; Iacobucci, 2014). Indeed, often broad domains or a large number of priority areas have been selected possibly reflecting that,, under the surface of the new policy narrative, national and regional authorities have adopted a "business as usual" attitude rather than the experimental approach envisaged by Smart Specialisation. That is, a semblance of

change with little real progress as a result of an "isomorphic mimicry" strategy (DiMaggio and Powell, 1983).[2]

On the priority-setting process, particularly interesting is the comment of a respondent regarding the actual operationalisation of the policy concept.

*«In our experience, although a beautiful principle and very convincing theory by itself, adopting smart specialisation in many regions has in practice meant making 'safe' broad choices ('current strengths instead of future strengths') and supporting these choices (broad priorities). The current policy framework has in our view not been very instrumental avoiding this, in the sense that much emphasis has been put on making the right priority choices (already) at the beginning of a policy period. We believe this is a 'over-simplistic' description of reality, in which entrepreneurial discoveries can be made - and in our view should be encouraged to be made - at each moment in time. Translating this to a policy framework would in our view mean putting much emphasis on creating the conditions, the innovation climate, for a continuous form of interaction, which will enable policymakers to make truly specific choices - refine choices initially made - along the way. The impressions many actors and stakeholders have, based on this over-simplistic description of RIS3 which they cannot relate to, form a barrier against winning full support for the RIS3 principles. Efforts are needed, from regions, Member States and the European Commission, to correct this 'biased views' and present RIS3 in a more nuanced way».*

Table 1 shows the most problematic and challenging items, in order of importance, associated with four main areas of the RIS3 design process.

"Lack of data and/or data availability when needed" and "lack of evaluation studies and monitoring information on past policies" are the most cited problems by respondents in relation to the "analysis of the context and potential for innovation" and "monitoring" activities.

The obstacles associated to the existence of different rules governing various sources of funding and the establishment of synergies among policies and funding managed by different organisations placed on different levels (EU, national, regional) along with difficulties in managing/financing interregional collaborative projects are, in this order, the most problematic aspects in the design of the "policy-mix and policy instruments".

Moreover, respondents find it particularly difficult to engage firms and civil society groups in the priority-setting process.

Finally, the lack of skills and capabilities in some groups of stakeholders constrains the "analysis of the context and potential for innovation" and "priority selection"; whereas, the lack of skills and capabilities within the (regional/national) administration, according to respondents, hampers "monitoring" activities and the design of the strategy's "policy-mix and policy instruments".

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[2] On this issue of national and regional actors imitating the process of entrepreneurial discovery but without making any functional changes see also Radosevic (2017).

**Table 1. Main problems and challenges related to the RIS3 exercise**

| Activity | Problems/challenges |
| --- | --- |
| **Analysis of the context and potential for innovation** | 1. Lack of data and/or data availability when needed |
| | 2. Lack of evaluation studies and monitoring information on past policies |
| | 3. Difficulties in getting civil society groups involved |
| | 4. Lack of skills and capabilities in some groups of stakeholders |
| **Monitoring activities** | 1. Lack of data and/or data availability when needed |
| | 2. Lack of evaluation studies and monitoring information on past policies |
| | 3. Lack of skills and capabilities within the (regional/national) administration |
| **Policy-mix and policy instruments** | 1. Obstacles associated with the different rules governing diverse funding sources |
| | 2. Synergies among policies and funding managed by different organisations placed on different level (EU, national, regional) |
| | 3. Difficulties in managing/financing interregional collaborative projects |
| | 4. Lack of skills and capabilities within the (regional/national) administration |
| | 5. Difficulties in getting universities and public research organisations involved |
| | 6. Difficulties in getting enterprises involved |
| **Priority selection** | 1. Difficulties in getting enterprises involved |
| | 2. Lack of skills and capabilities in some groups of stakeholders |
| | 3. Difficulties in getting civil society groups involved |

*Source*: authors' elaboration based on survey data.

### *Significant improvements can already be detected in some areas, but not all….*

According to respondents, the areas in which, substantial or radical, improvements can be observed are the following: stakeholder engagement (58%), prioritisation process (56%), concentration of funding (54%), level of trust and emergence of innovation potential (51%).

More efforts seem required in relation to the quality and effectiveness of monitoring activities and strategies' outward-looking perspective where advancements are slower.

As regards the ultimate objective of Smart Specialisation Strategies, stakeholders do not notice significant progresses towards economic transformation yet: in fact, only 30% observes, substantial or radical, improvements (Figure 5).

**Figure 5. Improvements promoted by the RIS3 process according to survey's respondents**
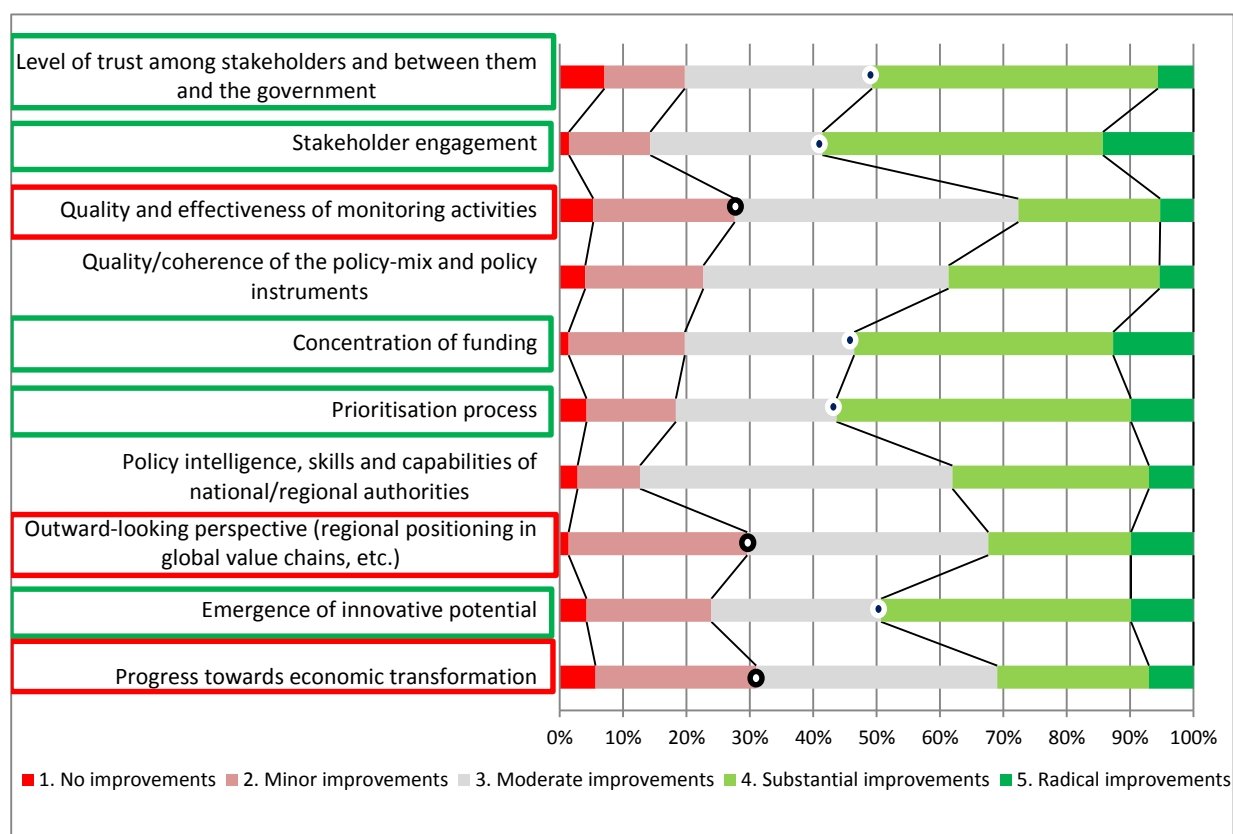


*Note:* the green boxes include those areas where substantial or radical improvements are reported (more than 50% of responses); on the contrary, the red boxes contain areas were no major improvements can be detected ("substantial improvements" and "radical improvements" responses combined amount to less than 35% of the total).
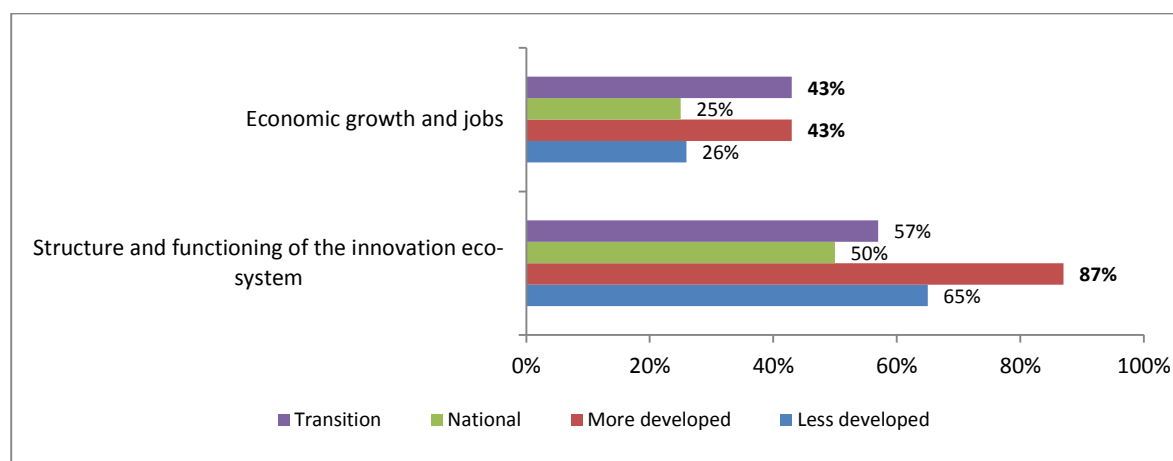
*Source*: authors' elaboration based on survey data.

### *Strengthening of the regional innovation ecosystem, but modest impact of the strategy on economic growth and employment expected in the future*

In the medium-long term, RIS3 are expected to have a greater impact on the structure and functioning of the territorial innovation ecosystem (Figure 6). Overall, nearly three quarters of stakeholders anticipate that such impact will be strong or very strong. More in detail, the most optimistic outlook is displayed by the representatives of more developed regions (87%), followed by less developed ones. Certainly, such expectation can be valued positively by the European policy maker. Building better institutions along with improving coordination among actors and promoting collective action are in fact important underlying objectives of Smart Specialisation.

On the reverse, the effect of the strategies on economic growth and jobs is expected to be modest. Only 37% anticipates a substantial impact of the strategy on the promotion of economic growth and jobs in the coming years (43% in the case of more developed and transition regions).

**Figure 6. Perceived impact of RIS3 in the medium-long term ("strong impact" or "very strong" impact replies)**



*Source*: authors' elaboration based on survey data.

We may put forward two possible explanations, non-mutually exclusive, for this less optimistic view on the capacity of Smart Specialisation to have a substantial effect on the economy.

The first line of reasoning is that current perceptions may inform and influence future judgments. That is to say, stakeholders do not currently see any significant progress towards economic transformation; accordingly, they do not expect major improvements in the future either.

The second plausible argument is that, given the complexity of economic transformation processes and the role of structural circumstances (such as, national political economies, macro-economic dynamics, restructuring of international divisions of labour, etc.) in shaping development paths (Martin, 2015; Pike *et al.*, 2017), respondents show some pessimism about the possibility that Smart Specialisation alone can have a substantial impact on local and regional development. This seems particularly the case of less develop regions, where only 26% of respondents expect the impact of the RIS3 in their regions to be very strong or strong.

### *What about the future? Maintain the current policy framework while introducing improvements*

*Maintain the same policy framework but introduce new elements to improve the effectiveness and responsiveness of the policy*: this is, in a nutshell, the main message put forward by respondents for the future of the largest experiment of regional innovation policy in the world.

When asked to provide recommendation for the future of Smart Specialisation within the EU Cohesion post-2020 framework quite interestingly only few stakeholders selected the option "transforming the RIS3 in a voluntary exercise". In fact, more respondents would like the European policy maker to retain the same policy framework. The advantage of maintaining the same policy scheme is that national and regional policy makers and other relevant stakeholders would not have to learn new policy approaches, methodologies and rules of engagement. Continuity is reassuring and rewarding for

those territories that have already heavily invested in the RIS3 policy concept, process and methodology.

As put it by two respondents. *«We suggest waiting […] before introducing significant changes, so that RIS3 can deliver its effects first. Now it is time only for "fine-tuning", not yet to decide on major shifts and changes. Our RIS3 generated for example 3 to 4 year-long projects for the results of which we need to wait before any conclusions on their success».*

*«RIS3 has introduced a new paradigm for innovation policy making. This concept is new and still blurry which adds to the difficulty of implementing it. It is important to take stock on the knowledge accumulated, build on the current experience and avoid radical changes. RIS3 can be a tool of strategy design and optimization of policy-making, but can also lever interregional cooperation. Fostering the construction of cross regional RIS3 may be useful …to map the capabilities of each region. Hence, it is important to make clear if RIS3 will continue to be the relevant framework»*

However, what is strongly required for the European Commission is to introduce some innovations in the two following areas: (i) harmonisation of rules governing different EU funding sources relevant to RIS3, and (ii) introduction of new provisions/mechanisms to support interregional cooperation. To a lesser extent, respondents recommended the introduction of rewarding mechanisms (for "good" RIS3) and the differentiation of the RIS3 policy scheme according to the existing regional differences across the EU.

EU policy is expected to take better into consideration regional specific circumstances and dynamics rather than imposing general policy schemes and recommendations that may neglect these conditions and nurture scepticism among regional actors.

In the words of one of the respondents: *«There should be a mechanism to encourage regions to focus more on the social challenges that the certain region is facing (not general one for Europe only). Supporting R&D projects form public money should be more in line with the local ecosystems and the needs of local communities. That could help to show the impact of the EU support on the life of the average EU citizen».*

Finally, the introduction of standardised templates for the design of future strategies is not among the most cited recommendations by respondents (Figure 7). On this last issue it is particularly interesting the comment provided by a regional policy maker: *«The idea of smart specialisation is giving regions a common basis for their cooperation despite their different approaches to RIS3. Standardised templates might make it easier to formulate the strategies but at the same time it would limit the possibilities of regions to make best out of their RIS3. Simplified common guidelines and good examples might work best (as the S3 Platform has been doing)».*

**Figure 7. Recommendations for the future of Smart Specialisation in Europe**
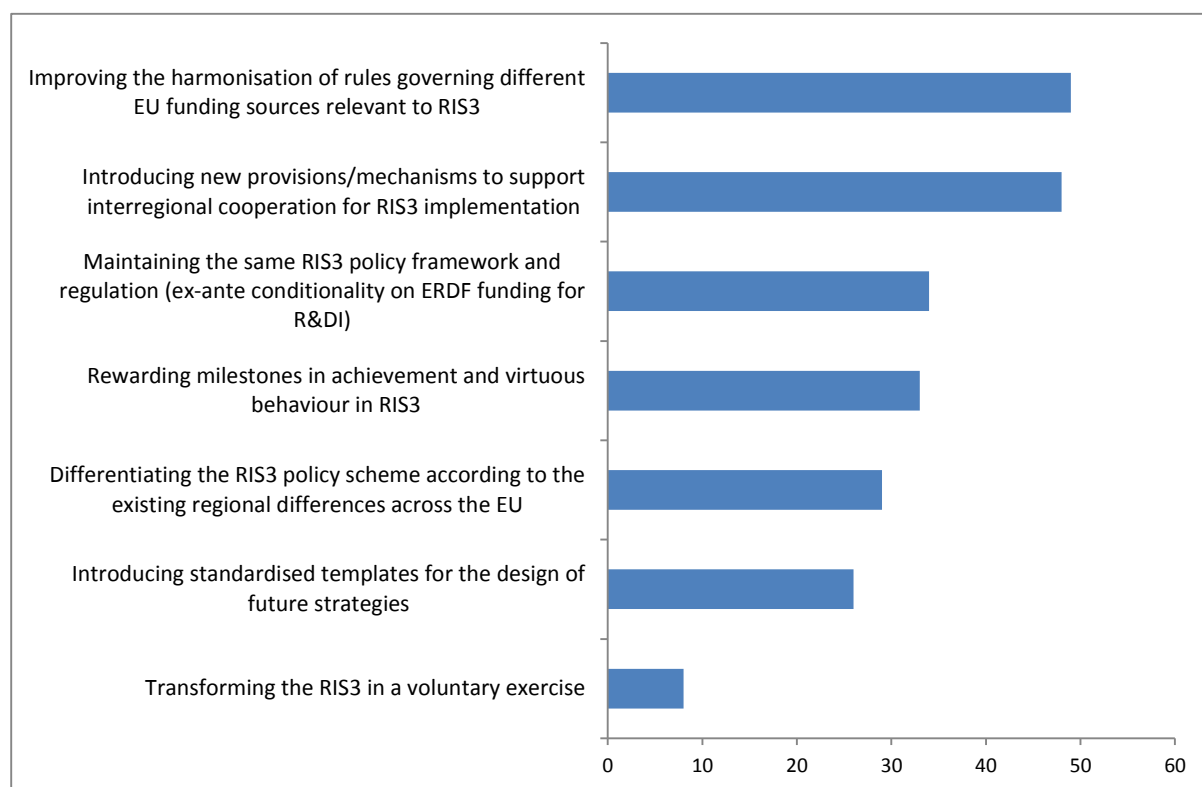


*Source*: authors' elaboration based on survey data.

# 4 Results on specific aspects of the RIS3

In this section, we analyse in detail national and regional authorities' views on three of the main features of Smart Specialisation: governance and stakeholder engagement; priority-setting and policy implementation; monitoring and evaluation.

## 4.1 Governance and stakeholder engagement

Governance is at the centre of the Smart Specialisation policy concept. The creation of good institutions along with the inclusion of a wide array of actors in decision making processes and the enhancement of vertical and horizontal coordination mechanisms are important objectives of the policy.

The survey addresses different aspects of RIS3 governance. Firstly, we look at strategic and management functions, exploring their degree of development. Secondly, we zoom into the management level and examine the obstacles countries and regions are experiencing in the implementation of the policy and the required skills. Thirdly we address the issue of multi-level governance, focusing on national-regional interaction and coordination. Finally, we examine stakeholder engagement in Smart Specialisation: actors, contributions and challenges.

### *Effectiveness of the RIS3 governance*

For the purposes of our survey we identified three strategic functions and explored their degree of development, namely:

- Setting and revising strategic objectives and priorities;
- Supervising RIS3 implementation;
- Liaising with other government levels.

Whilst 54% of respondents revealed that a body responsible for *Setting and revising strategic objectives and priorities* is operating and effective; with respect to *Supervising RIS3 implementation* the proportion is 48%, falling to 34% for *Liaising with other government levels*. These results may reflect the fact that the identification of objectives and priorities was the first strategic task to be faced by regions and countries, hence the governance system has reached a higher level of maturity in this respect (Figure 8).

**Figure 8. Effectiveness of the RIS3 governance structure at performing strategic functions**
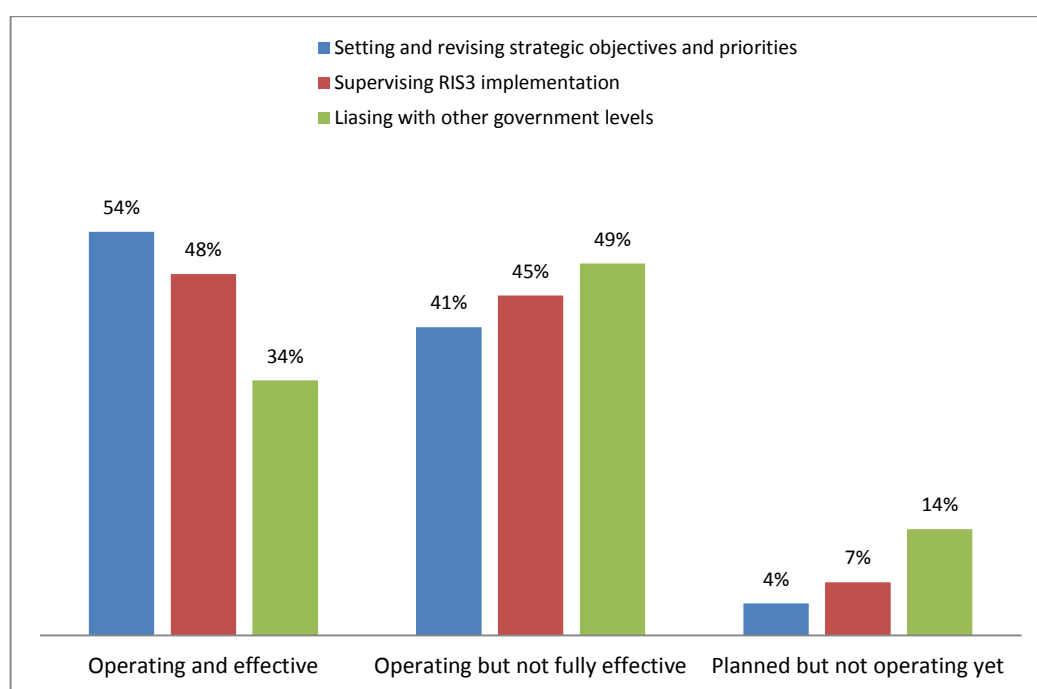


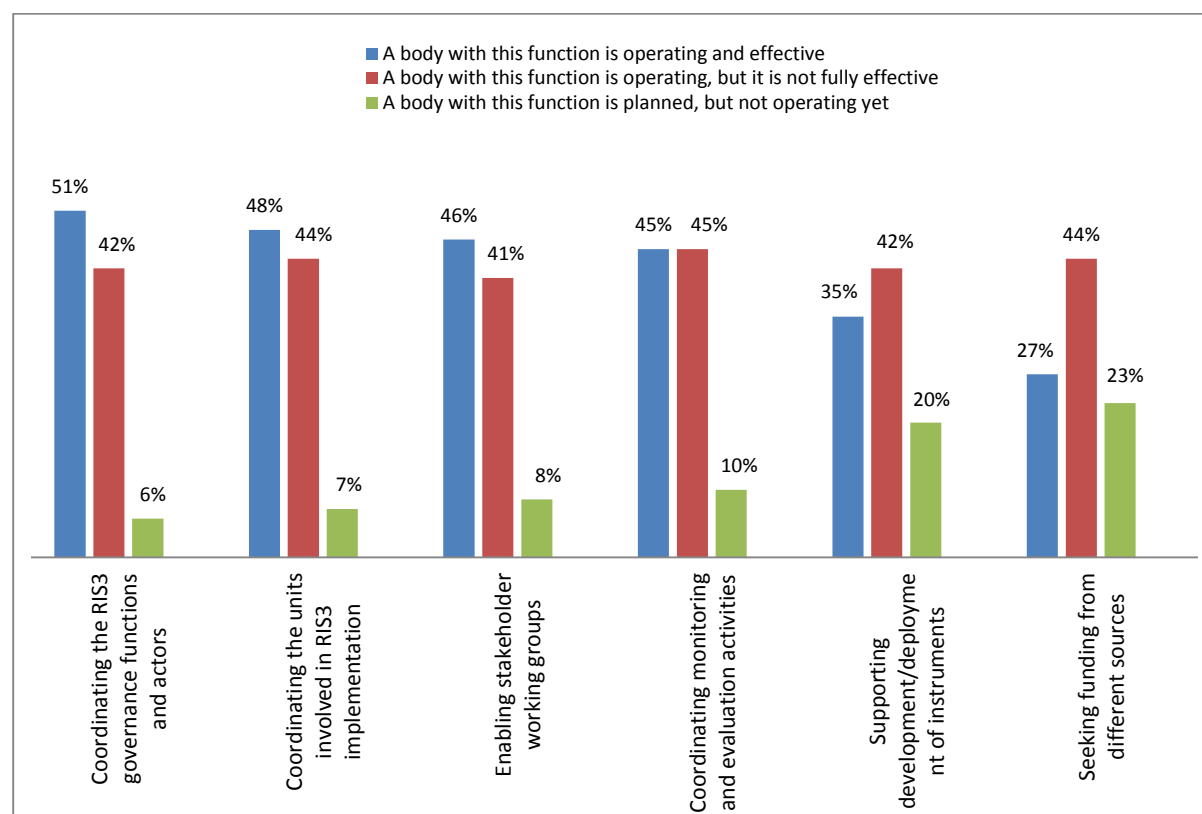*Source: authors' elaboration based on survey data*

Figure 9 provides similar information in relation to the following management functions:

- Coordinating the different RIS3 governance functions and actors;
- Coordinating the administrative units involved in RIS3 implementation;
- Enabling the functioning of stakeholder working groups;
- Coordinating monitoring and evaluation activities;
- Supporting the development/deployment of instruments for implementation;
- Seeking funding from different sources.

Whilst the *Coordinating the different RIS3 governance functions and actors* function is considered fully operating and effective by half of the respondents, this is not the case for the remaining items in the list. The most challenging functions appear to be those

more closely linked to implementation, namely: *Coordinating monitoring and evaluation activities*, *Supporting development/deployment of instruments for RIS3 implementation*, and *Seeking funding from different sources.* In these cases, 10%, 20%, and 23% of public authorities respectively do not have an operating body yet.

**Figure 9. Effectiveness of the RIS3 governance structure at performing management functions**



*Source*: authors' elaboration based on survey data.

### *Building the RIS3 management team*

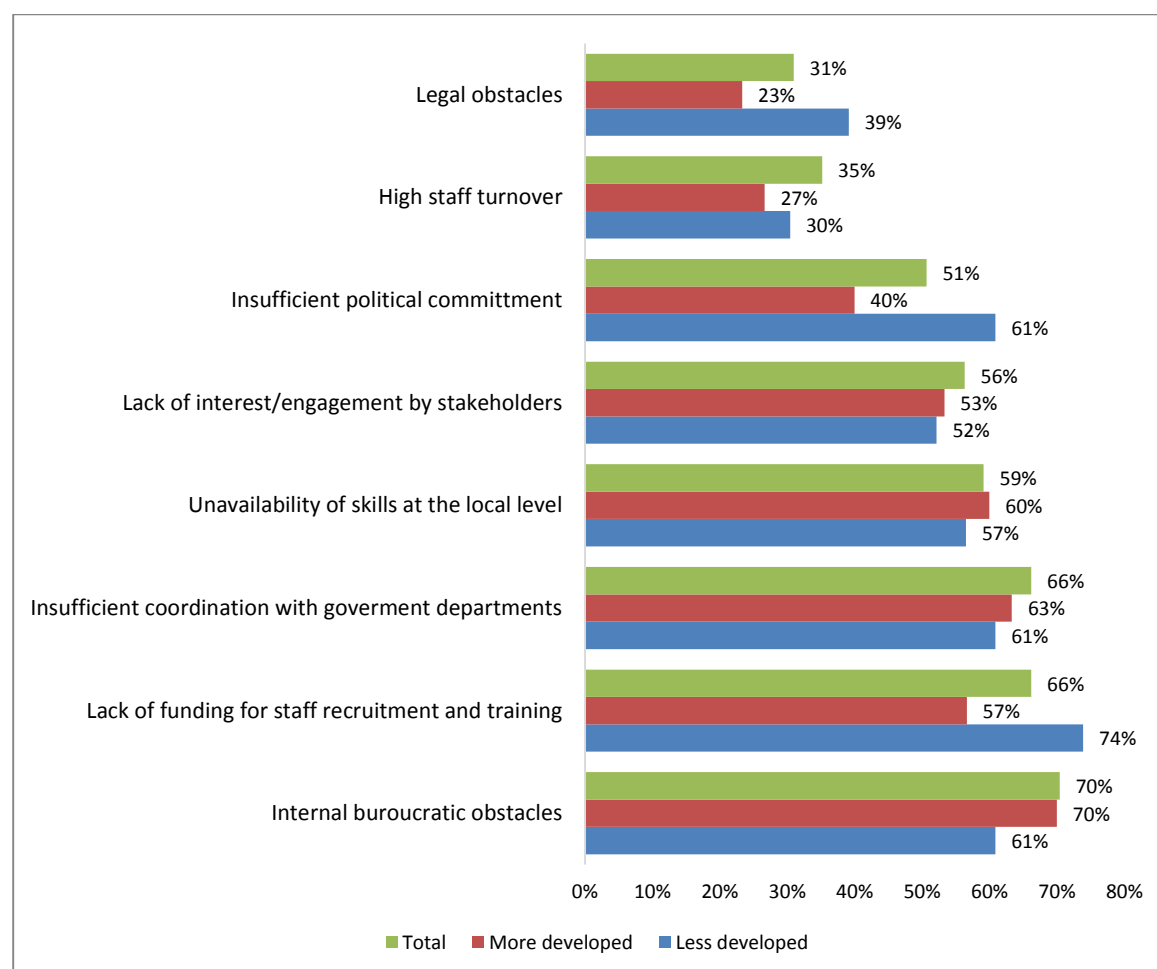Survey respondents were asked to identify the obstacles faced in building the RIS3 management team.[3]

As shown in Figure 10, the most cited challenges are (in decreasing order of importance):

  (i)    Internal bureaucratic obstacles (70% of respondents replied yes or somewhat);
  (ii)   Lack of funding for staff recruitment and training (66%);
  (iii)  Insufficient coordination among government departments (66%);
  (iv)   Unavailability of suitable experienced/skilled human resources to hire at the local level (59%);
  (v)    Lack of interest or engagement by stakeholders (56%);
  (vi)   Insufficient political commitment (51%).

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[3] Respondents were given a list of obstacles and could choose to reply *yes*, *no* or *somewhat*.

The data breakdown shows some interesting differences between more and less developed regions. Internal bureaucratic obstacles are more often cited by more developed regions (70% *vs* 61%). Nearly 61% of respondents from less developed regions identified insufficient political commitment as an obstacle, as compared to 40% in more developed regions. Lack of funding for staff recruitment and training also appears as a significantly more cumbersome obstacle in less developed regions than in more developed ones (74% *vs* 57%).

**Figure 10.  Obstacles in building the RIS3 management team**



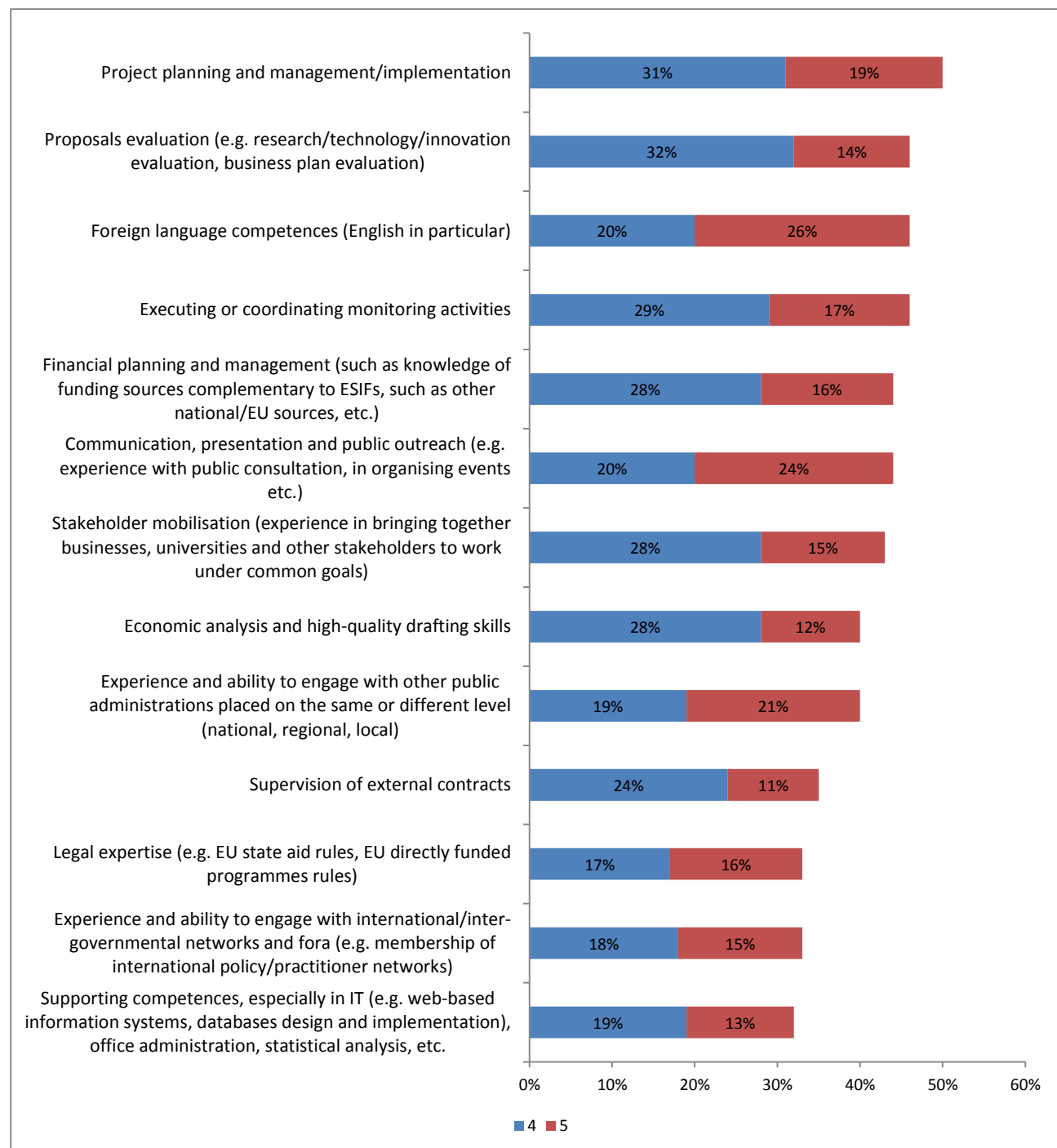*Source*: authors' elaboration based on survey data.

### *Building up skills for RIS3 design and implementation*

Survey results allow zooming into the specific skill needs within the RIS3 management team. Respondents were asked to evaluate to which extent the skills available within the team are adequate to the perceived needs of the RIS3 process. Judgement could be provided on a 5-point scale (5 = Needs fully met; 1 = Needs not met).

The sum of responses "Needs fully met" and "Needs substantially met" is never above 50%, indicating a general need for integrating new skills and capabilities across multiple aspects of the RIS3 process. Regions and countries are more in need of *specialised supporting competences* (IT, legal advice, economic analysis) and *relational competences* at the international and national level; while are comparatively less in need

of *core implementation competences* (including project selection and management, monitoring, financial management) (Figure 11).

**Figure 11. Skill needs in the RIS3 management team (% of respondents indicating values 4 - needs substantially met and 5 - needs fully met)**



*Source*: authors' elaboration based on survey data.

Overall, managing Smart Specialisation emerges as a complex task, and regions are proactively engaging with it. Indeed, to improve capacities in designing better policy-mix and policy instruments, several regions, as emerged from the survey, have taken part in

*INTERREG* projects, inter-regional cooperation initiatives and peer-review exercises focusing on the exchange of experiences, circulation of useful information and knowledge and mutual learning.

### *Multi-level governance*

The survey explored the issue of national-regional coordination in RIS3 governance by asking respondents to assess to what extent they agreed or disagree with the following statements (providing a 5-point scale):

- the division of functions among regional and national RIS3 governance is clear;
- the relationship between national and regional public bodies involved in RIS3 governance is cooperative;
- the coordination of policies and funding instruments managed at different government level is effective;
- there are effective channels of communication for addressing issues between the regional and national public levels.

Figure 12 reports the proportion of respondents that agrees or strongly agrees with the statements. Around 45% of respondents agrees or strongly agrees with the first two statements. There is even less agreement as regards to the effectiveness of the coordination of policies and funding instruments managed at different government level and communication between the two levels (with only 27% and 24% of regions agreeing or strongly agreeing).

**Figure 12. Coordination between the regional and national levels (% of respondents that agree or strongly agree with the statement)**
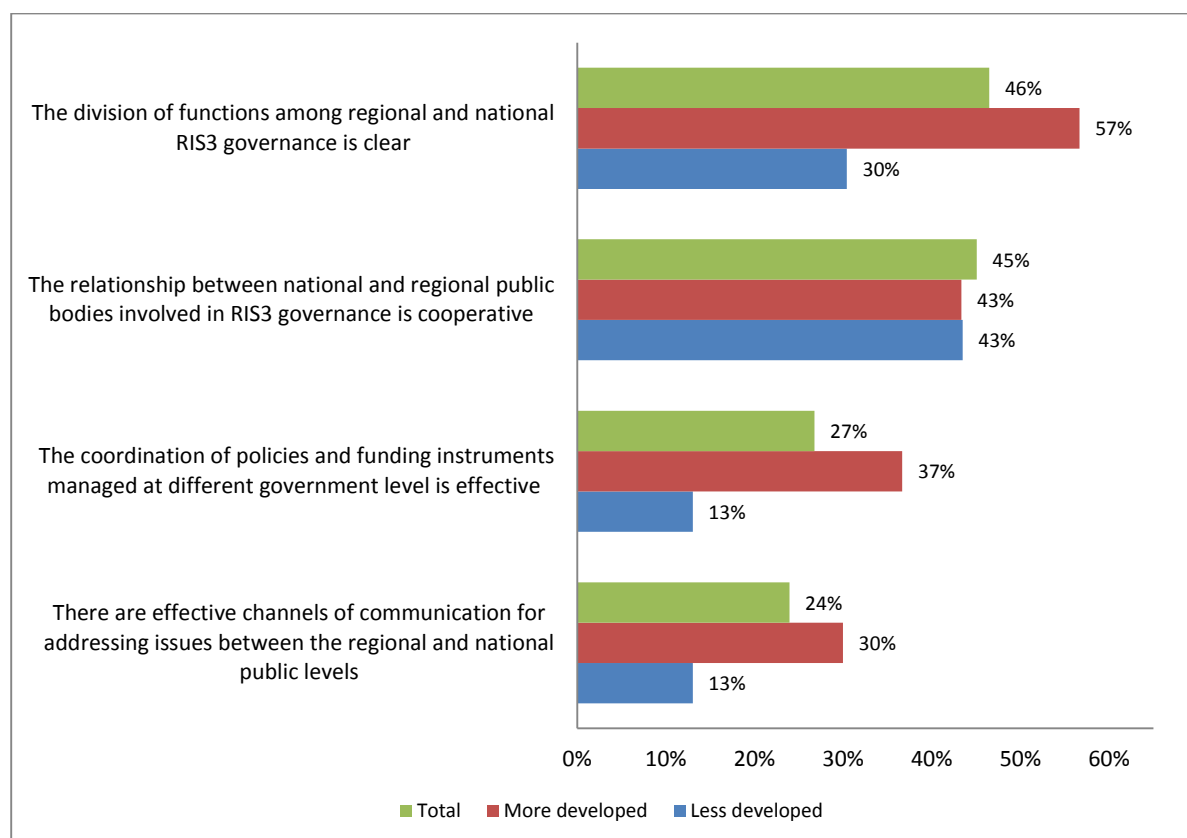


*Source*: authors' elaboration based on survey data.

Furthermore, the differences between more and less developed regions are remarkable: just 30% of less developed regions agree with the statement that the division of functions between the national and regional level is clear, as compared to 57% of more developed regions. With respect to coordination between the two levels, only 13% of less developed regions believe that it is effective, as opposed to 37% of more developed ones. Finally, the proportion of regions believing that the communication between the national and regional level is effective is 13% for less developed regions and 30% for more developed ones. On the other hand, the proportion of regions believing that the national-regional relationship is cooperative is similar across more and less developed regions (43%).

The division of powers and responsibilities between the different layers of government varies significantly within the EU. However, regardless of the different arrangements, the figure indicates that much needs to be done to improve the coordination between the national and regional level to support RIS3 implementation.

### *Stakeholder engagement*

Smart specialisation is characterised by a process of identification and selection of a limited number of research and innovation priority areas for public intervention, implying choices of knowledge domains, technologies and economic activities that should be supported by targeted public investment. Priority-setting should not be the result of a

top-down and centralised bureaucratic process in which public administrations play the role of omniscient planning. It should be instead an inclusive process of *entrepreneurial discovery* in which different stakeholders – entrepreneurs, researchers and citizens – collect and produce information about new activities, whilst the government assesses the outcomes and empowers those actors capable of realising this potential (Foray, 2015).

A commonly identified strength of the RIS3 experience is the increased stakeholder involvement compared to previous experiences with research and innovation policy. This view is shared both by more and less developed regions and countries. In detail, 7 out of 10 respondents agree that the RIS3 process has promoted wider participation in the policy making process.

The role of stakeholders is valued the most with respect to the following aspects: (i) supporting the entrepreneurial discovery process, revising and renewing RIS3 priorities; (ii) providing feed-back on RIS3 progress; and (iii) promoting collaborative initiatives. Quite the contrary, respondents do not see much of a contribution coming from stakeholders in launching new legislative initiatives (Figure 13).

**Figure 13. The role of stakeholder in the whole RIS3 process (Number of respondents, multiple choices allowed)**
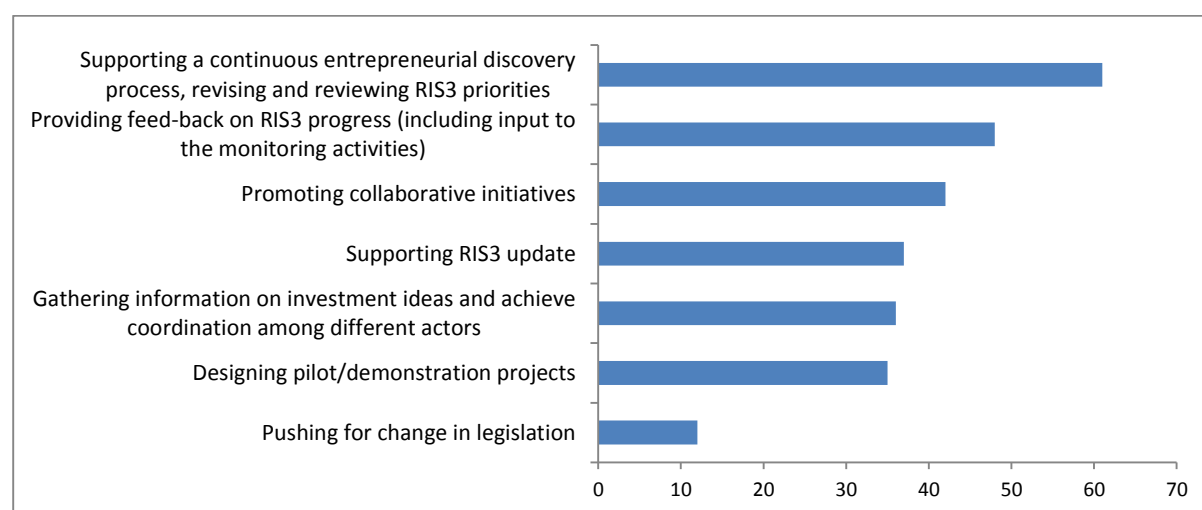


*Source*: authors' elaboration based on survey data.

Even though participation has increased, still some types of stakeholders are less represented than others. According to respondents, universities and public research organisations and cluster/district organisations are the partners who had a greater influence on the policy making process; while, civil society groups, trade unions, financial organisations, local branches of MNEs and start-ups, when they have participated, had the least influence (Figure 14). There are some differences between more developed and less developed regions: universities are considered to be more influential in more developed regions (87%) that in less developed regions (73%); the opposite is true for large domestic companies that have more influence in less developed regions (55% *vs* 27%) and in the case of SMEs (40% *vs* 13%). In more developed regions, civil society groups do not have any influence at all on the decision-making process.

**Figure 14. Capacity to affect the RIS3 decision making process (high capacity and substantial capacity) by group of actors (% of respondents, multiple choices allowed)**
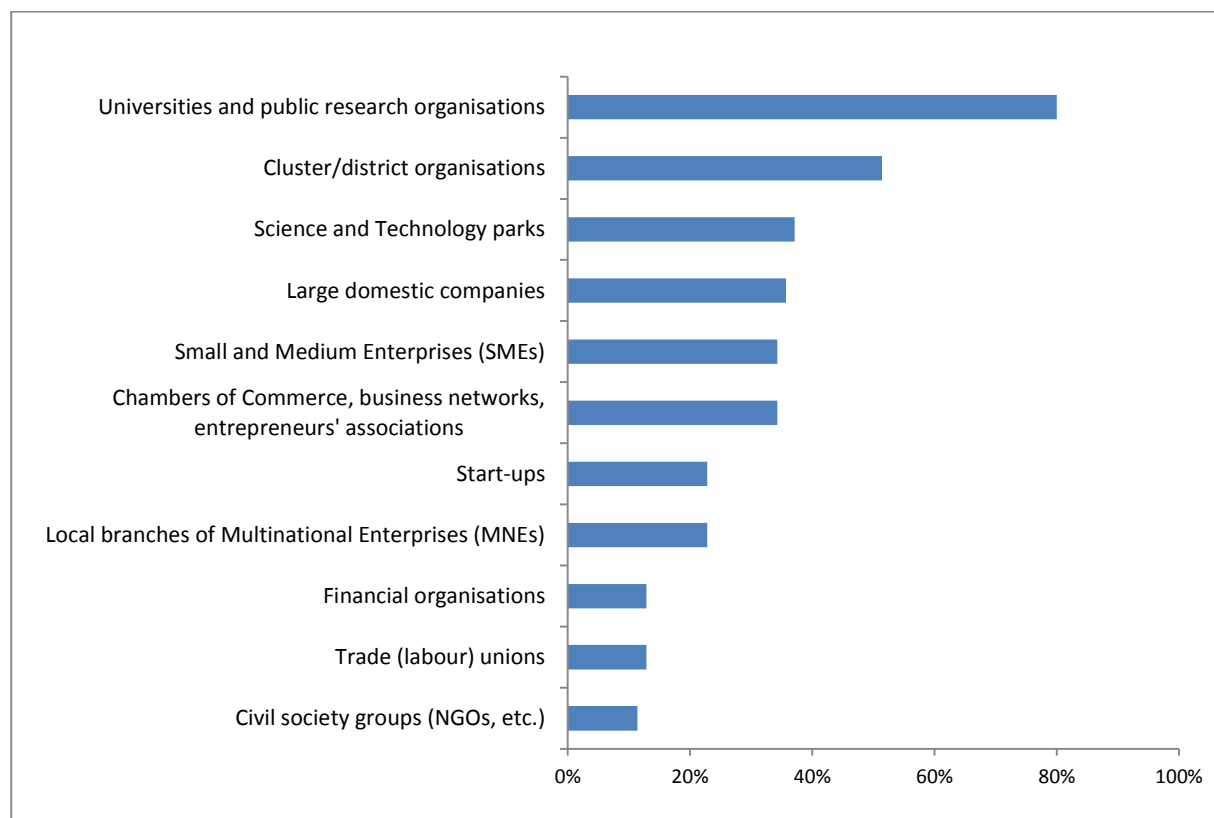


*Source*: authors' elaboration based on survey data.

Finally, as regards the main problems/challenges in engaging stakeholders in the RIS3 exercise, respondents identified the following ones, in decreasing order of importance: (i) lack of interest by some actors; (ii) lack of adequate skills and capabilities by some stakeholders; (iii) lack of (skilled) personnel within the public administration dealing with the involvement and management of stakeholders; and (iv) lack of trust by stakeholders on how public authorities would use their contribution (Figure 15).

**Figure 15. Main problems/challenges in engaging stakeholders in the RIS3 exercise (Number of respondents, multiple choices allowed)**
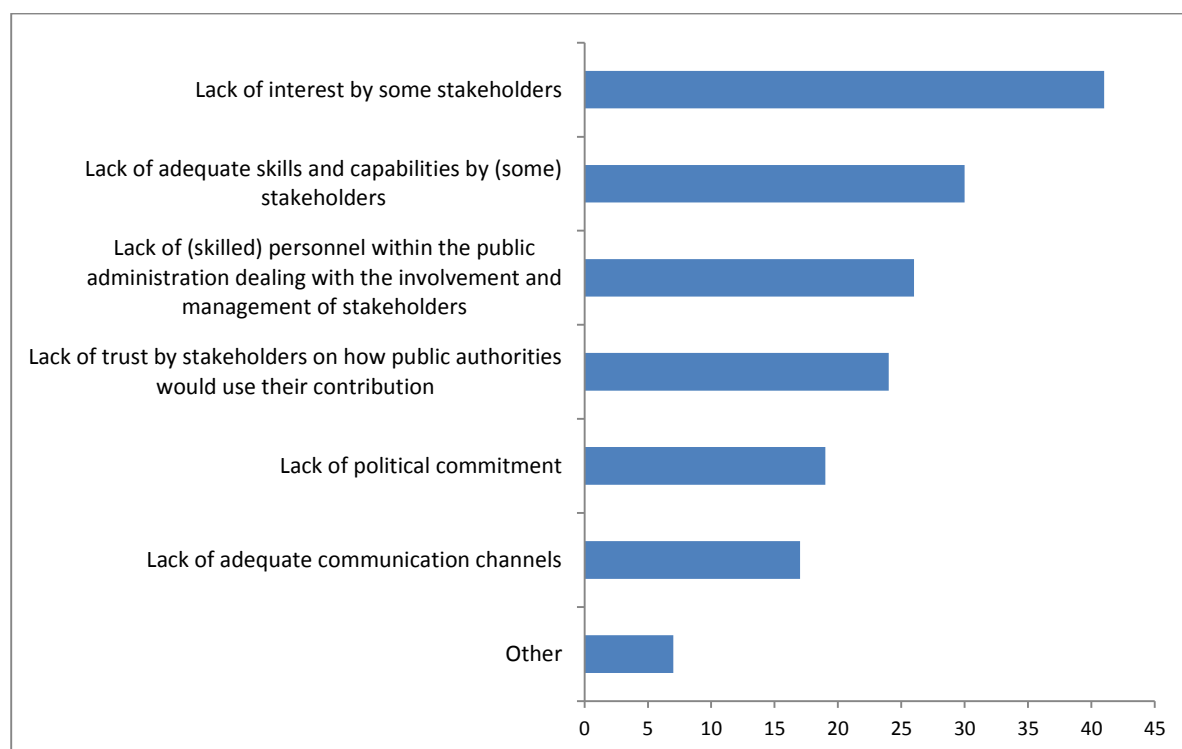


*Source*: authors' elaboration based on survey data.

## 4.2 Priority-setting and policy implementation

Prioritising public support on selected research and innovation activities that have the largest development potential represents the guiding principle of the Smart Specialisation policy approach. On the basis of a participatory approach, regions and countries have been required to identify a set of innovation priority areas on which to concentrate public support and according to which to monitor results.

### *Priority-setting methods*

Respondents were asked to indicate the analytical and participatory methods used to support the analysis of the national/regional context and priority-setting process, specifying whether the methods had been already used or were newly introduced thanks to the RIS3 process. Table 2 reports, in two distinct sections, the five methods that were most used overall, and the five that were newly introduced, together with the percentage of respondents declaring to apply those methods.

The first striking result is that the great majority of respondents used a large number of methods and techniques. Respondents were presented a list of 18 different methods to choose from.[4] On average, regions and countries employ 14 distinct methods, with 94%

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[4] SWOT analysis, Analysis of national/regional economic specialisation, Cluster and innovation eco-system analysis and mapping, Research and technology development infrastructure analysis and mapping, National/regional science and technology profile (specialisation) and performance, Analysis of the country's / region's position within specific Global Value Chains, Related variety/product space analysis, Benchmarking, Brainstorming, Foresight, Focus group, Surveys, Quadruple-helix working groups, Peer-reviews, Calls for proposals, Pilot/exploratory projects, Roadmaps, Match-making events.

of respondents declaring to use more than 10 methods. The five most common methods, all used by close to or above 90% of surveyed regions and countries, are: *SWOT analysis*, *Analysis of national/regional economic specialisation*, *Focus groups*, *Cluster and innovation eco-system analysis and mapping*, *National/regional science and technology profile and performance*; with the first two methods used in virtually all regions and countries.

The second section of Table 2 reports the five methods that were most frequently introduced for the first time with RIS3. Note that the first place in order of importance is occupied by *Peer-reviews*, with more than half of respondents reporting employing this technique. Importantly, the systematic use of a peer-review methodology specific for RIS3 was introduced and popularized among EU regions and Member States thanks to the work of the *S3 Platform* of the European Commission based in Seville.[5] Note also the introduction of *Quadruple-helix working groups* by close to 50% of respondents: this is another "signature" element of the smart specialisation approach as spelled out in the European Commission guidance.[6] Finally, note that three out of the five methods that were most frequently introduced for the first time with RIS3 are participatory techniques.

**Table 2.  Methods used to support the analysis of the national/regional context and priority-setting process**

| Most used | % of users |
|---|---|
| SWOT analysis | 99 |
| Analysis of national/regional economic specialisation | 99 |
| Focus groups | 97 |
| Cluster and innovation eco-system analysis and mapping | 96 |
| National/regional science and technology profile and performance | 93 |
| **Newly introduced** | **% of users** |
| Peer-reviews | 51 |
| Quadruple-helix working groups | 49 |
| National/regional science and technology profile (specialisation) and performance | 44 |
| Analysis of the country's / region's position within specific Global Value Chains | 42 |
| Focus groups | 41 |

*Source*: authors' elaboration based on survey data.

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5 More information on S3 Platform peer-review activities can be found at the following link: http://s3platform.jrc.ec.europa.eu/s3-design-peer-review.
6 European Commission (2012).

*Priority revision*

Priority definition appears to be a dynamic process: four years into the ESIFs programming period, 16 respondents (22.5% of the sample) declared an ongoing or planned revision of the RIS3 which may lead to the re-definition of priorities; 4 respondents (5.6%) declared that new priorities were added after the strategy was adopted, based on the actual implementation experience.

*Concentration of funding and absorption pace*

Respondents were asked to express their level of agreement with the following statement: "The prioritisation process introduced by the RIS3 policy concept is promoting a greater concentration of funding". Judgement could be provided on a 5-point scale (5 = Strongly agree, 1 = Strongly disagree). Overall, 93% of respondents tends to agree with the statement (mark greater than or equal to 3; with 76% of respondents marking 4 or 5), with little differences among categories of regions.

Besides, national and regional policy maker were requested to express their level of agreement with the following statement: "The prioritisation process is slowing down the allocation and expenditure of ESIFs". Judgement could be provided on a 5-point scale (5 = Strongly agree, 1 = Strongly disagree). Overall, 59% respondents disagrees with the statement; nevertheless a qualified minority (41%) tends to agree with it, showing that the prioritisation requirement of RIS3 and the implied concentration of funding could slow down fund absorption in some cases, especially in the first phase of the programming period, as explicitly noted by some respondents. Some respondents put forward other possible explanations for the slowdown in fund absorption, namely: (i) lack of coordination with the national level which created obstacles to the implementation of regional policies; (ii) in the effective words a respondent, the need for *«adaptation of target groups of stakeholders. […] since we introduced new support instruments, it requires time for stakeholders to learn to use them and for the provision of support from the public administration»*.

**Policy-mix and budget allocation**

According to policy makers, Smart Specialisation brought changes in the policy-mix and budget allocation: 79% of respondents declared at least some changes, while 38% declared substantial or drastic changes. Respondents at national level reported the highest degree of transformation, followed by representatives of transition regions (Figure 16).

**Figure 16. Changes in the policy-mix and budget allocation compared to the past (% of respondents; 5 = Drastic changes, 1 = No changes)**
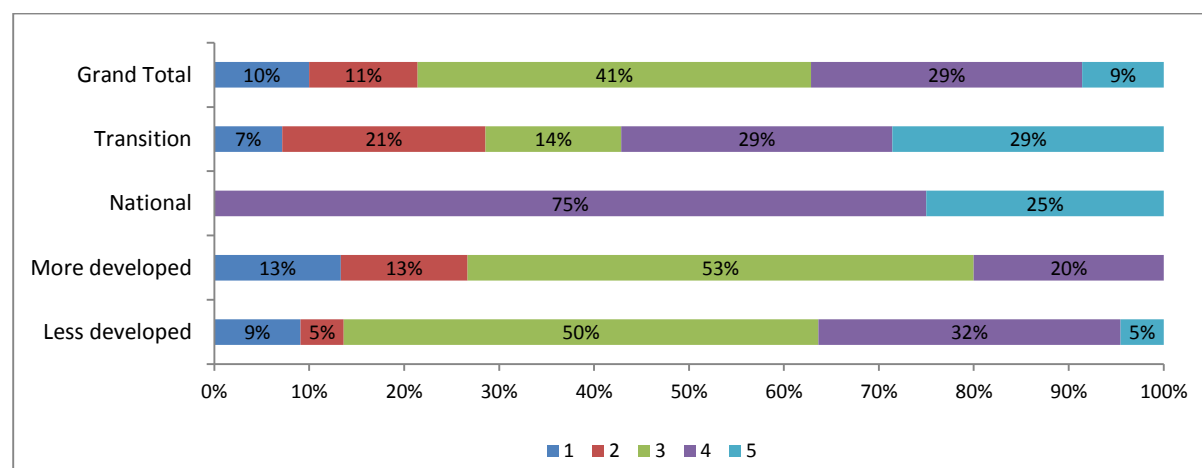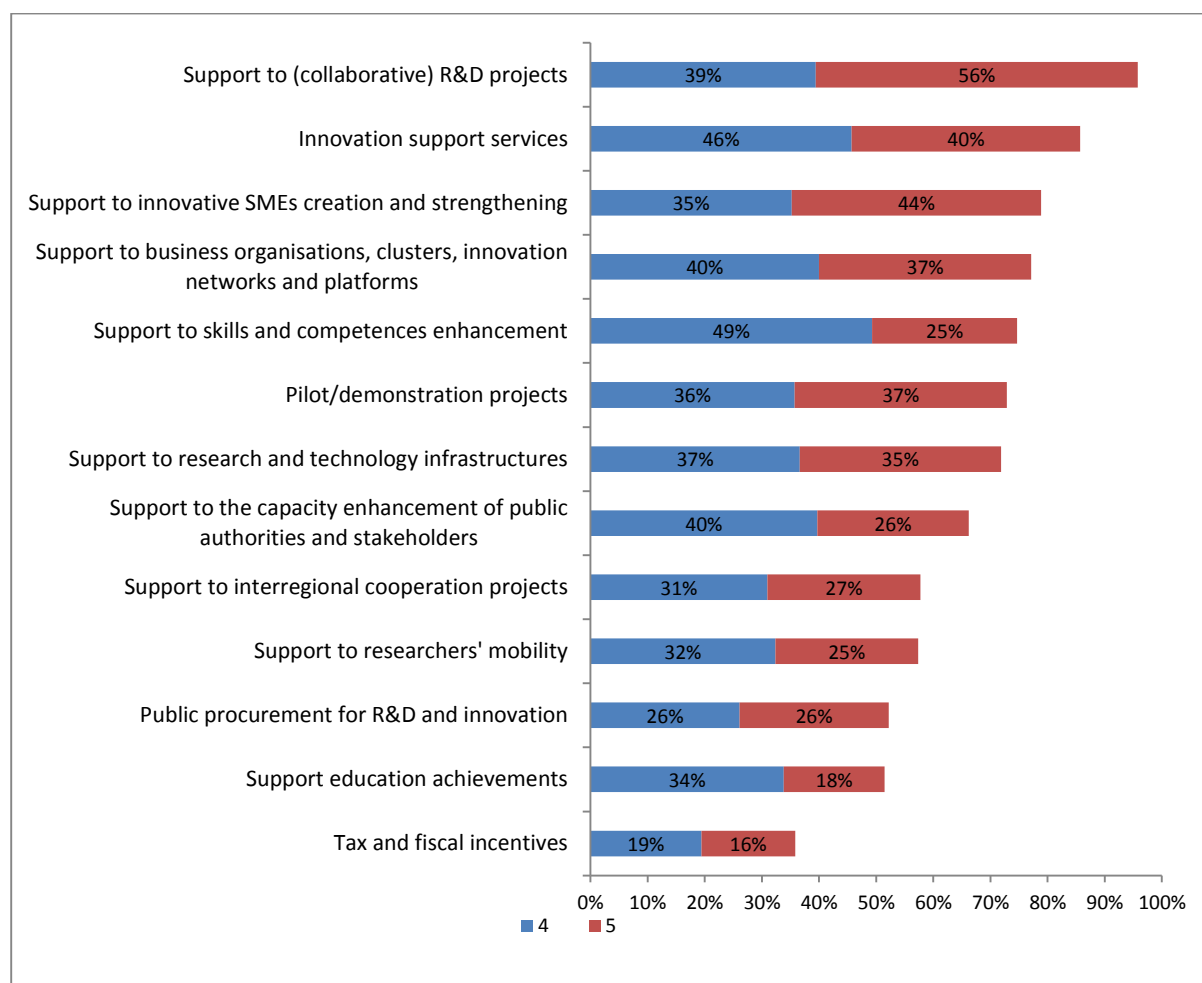


*Source*: authors' elaboration based on survey data.

## Choice of policy instruments

Respondents were asked to indicate the usefulness of different policy instruments for the implementation of RIS3. Judgement could be provided on a 5-point scale (5 = Very useful, 1 = Not useful). The most useful policy instruments for implementing RIS3 are, in order of importance: (i) support to (collaborative) R&D projects; (ii) innovation support services; (iii) support for the creation and strengthening of innovative SMEs; (iv) support for business organisations, clusters, innovation networks and platforms; (v) improvements of skills and competences; and (vi) pilot/demonstration projects. On the contrary, respondents do not consider "automatic" policy instruments such as tax and fiscal incentives to be particularly suitable for the RIS3 policy framework (Figure 17).

**Figure 17. Most useful policy instruments for RIS3 implementation (% of respondents indicating values 4 and 5)**



| Policy instrument | 4 | 5 |
|---|---|---|
| Support to (collaborative) R&D projects | 39% | 56% |
| Innovation support services | 46% | 40% |
| Support to innovative SMEs creation and strengthening | 35% | 44% |
| Support to business organisations, clusters, innovation networks and platforms | 40% | 37% |
| Support to skills and competences enhancement | 49% | 25% |
| Pilot/demonstration projects | 36% | 37% |
| Support to research and technology infrastructures | 37% | 35% |
| Support to the capacity enhancement of public authorities and stakeholders | 40% | 26% |
| Support to interregional cooperation projects | 31% | 27% |
| Support to researchers' mobility | 32% | 25% |
| Public procurement for R&D and innovation | 26% | 26% |
| Support education achievements | 34% | 18% |
| Tax and fiscal incentives | 19% | 16% |

*Source*: authors' elaboration based on survey data.

More than three-quarters of respondents stated that changes and innovations in policy instruments were introduced through the RIS3 process. In less developed regions is where such changes were detected the most (86% of respondents), followed by more developed regions (80%). Mostly, changes regarded the reshaping of existing "traditional" policy instruments (support to R&D, innovation services, etc.), and to a lesser extent support to groups of stakeholders to develop action plans in relation to RIS3 priorities, pilot initiative/demonstration projects, and public procurement for R&D and innovation related to RIS3 priorities.

## 4.3 Monitoring and evaluation

Following the experimentalist approach in policy making (Rodrik, 2010), Smart Specialisation poses particular emphasis on trial-and-error search and discovery of specific policy solutions for different territories. Experimentalist policies are especially well suited for cases where effective public intervention requires adaptation to changing circumstances and local variations. Monitoring and evaluation activities are particularly important in such contexts, in order to learn which policy experiments work and which fail.

### *RIS3 monitoring design and implementation is challenging*

Setting-up a monitoring and evaluation system is not an easy task. It is quite demanding in terms of analytical capacity, (primary) data collection, resources and actors' participation. The results of the survey show that the integration of monitoring and evaluation mechanisms represents the most challenging of the six steps of the RIS3 design process: more than half (54%) of the respondents considers it difficult or very difficult (see Figure 4).

As clearly put by a policy maker, monitoring the progress of the strategy is a difficult task: *«it is challenging to find the indicators to show the real impacts of the RIS3 and its implementation. In short term we can measure the results of projects and the increase of cooperation but what is the real effect of RIS3 on the economy and jobs and what would have changed despite it?»*

It is particularly challenging to monitor the progress of the specific research and innovation priority areas selected in the strategies. Existing indicators and official statistics, which supply data at a higher level of aggregation, generally do not provide useful information in this respect.

As regards the difficulties in monitoring the selected priorities, the following comment is particularly important: *«the RIS3 has started three years ago with the approval of the ERDF (European Regional development Fund) Regional Programme. The strategy was implemented trough public calls and resources derived almost from the Regional ERDF Programme. Now, in 2018, we have to start the process of revision of the RIS3. The main difficulties regard the lack of specific data, in relation of the priorities identified in the strategy. The monitoring system of the ERDF Regional Programme is not structured for this kind of monitoring».*

Besides, no particular enhancements can be detected thus far: only 27% of respondents perceive some or major improvements in the quality and effectiveness of monitoring activities. Lack of data and/or data availability when needed, lack of evaluation studies and monitoring information on past policies and lack of skill and capabilities within public administration are the most frequent cited problems by respondents in relation to monitoring activities.

### *More resources devoted to monitoring activities*

Given the relevance attributed to monitoring within the RIS3 policy context, national and regional authorities are devoting more resources to those activities: around 75% of respondents declared that a specific team is currently assigned to RIS3 monitoring. In several cases (32%), new monitoring teams have been created through the RIS3 exercise.

Although, monitoring relies mostly on official statistics and administrative data, the need for timely information on the progresses within RIS3 priority areas have prompted national and regional authorities to increasingly use *ad hoc* surveys (on beneficiaries and stakeholders), focus groups, and interviews to collect valuable information for monitoring purposes (Figure 18).

**Figure 18. Sources of information for monitoring activities (% of respondents)**
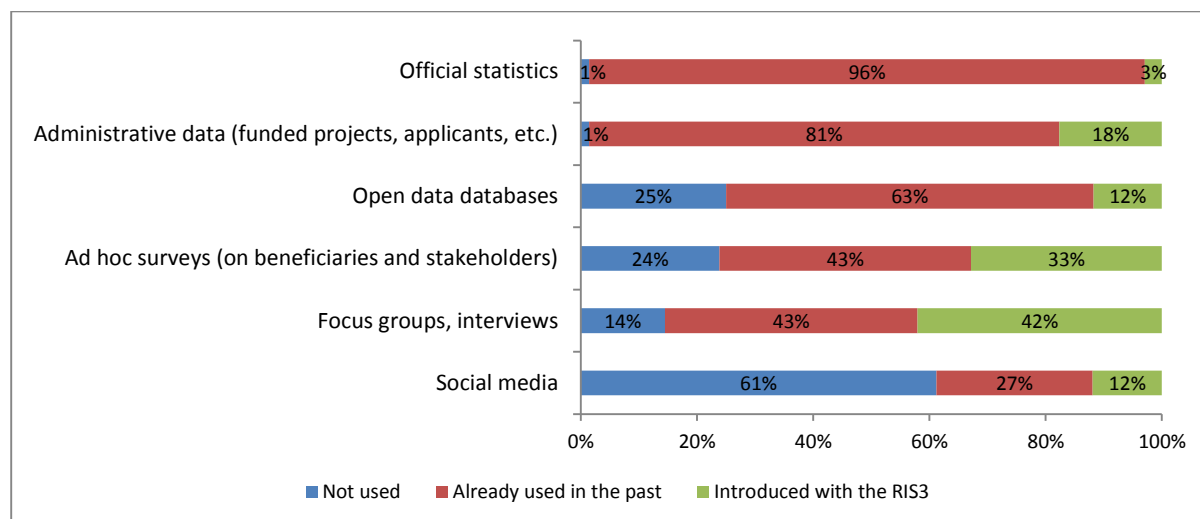


*Source*: authors' elaboration based on survey data.

### *Monitoring functions go beyond mere audit requirements*

There is a general agreement on the fact that the purpose of monitoring goes well beyond mere audit requirements. According to policy makers the most important monitoring functions are, in decreasing order of importance: (i) informing political decision makers on RIS3 progress (96% of respondents consider this function very important or important); (ii) informing stakeholders on RIS3 progress (86%); (iii) building trust among stakeholders (82%); (iv) providing evidence base for adjusting RIS3 (81%); (v) making clear the logic of intervention of the RIS3 (79%); and (vi) to a lesser extent, signalling how single priority areas are developing and inform the broader public on RIS3 progress (Figure 19).

**Figure 19. Monitoring functions (% of respondents indicating values 4 and 5)**
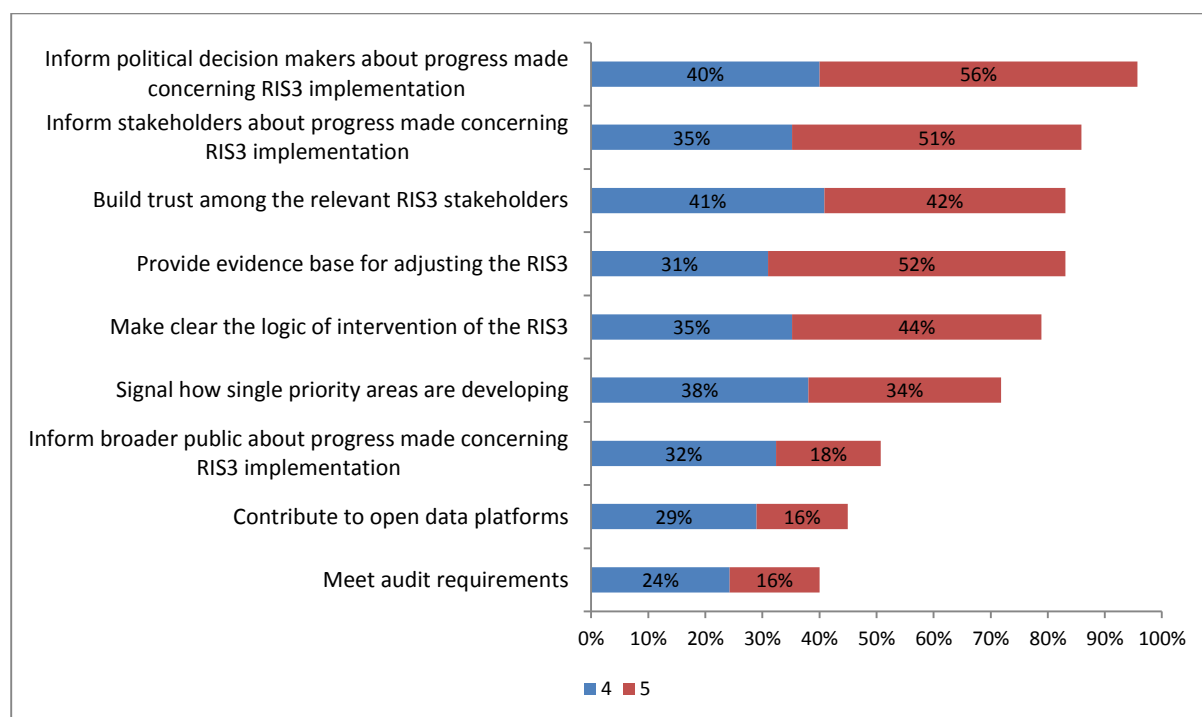


*Source*: authors' elaboration based on survey data.

### Technical aspects as the main obstacles to the use monitoring and evaluation information

With regard to the main obstacles to the use of monitoring and evaluation information to improve strategies' performance and policy making, respondents tend to identify, in the first place, those that relate to technical aspects: (i) measures require long periods of time before they can be expected to yield the major outcomes; (ii) data may not be broken down in sufficient detail to be useful; (iii) monitoring and evaluation findings may not be readily available when needed. Obstacles related to coordination mechanisms and the political dimension (e.g. disconnection with managements, lack of stakeholder engagement and lack of authority and interest in making changes) are less worrying for respondents (Figure 20).

**Figure 20. Obstacles to the use of monitoring and evaluation information to improve strategy performance and policy making (Number of respondents; multiple choices allowed)**
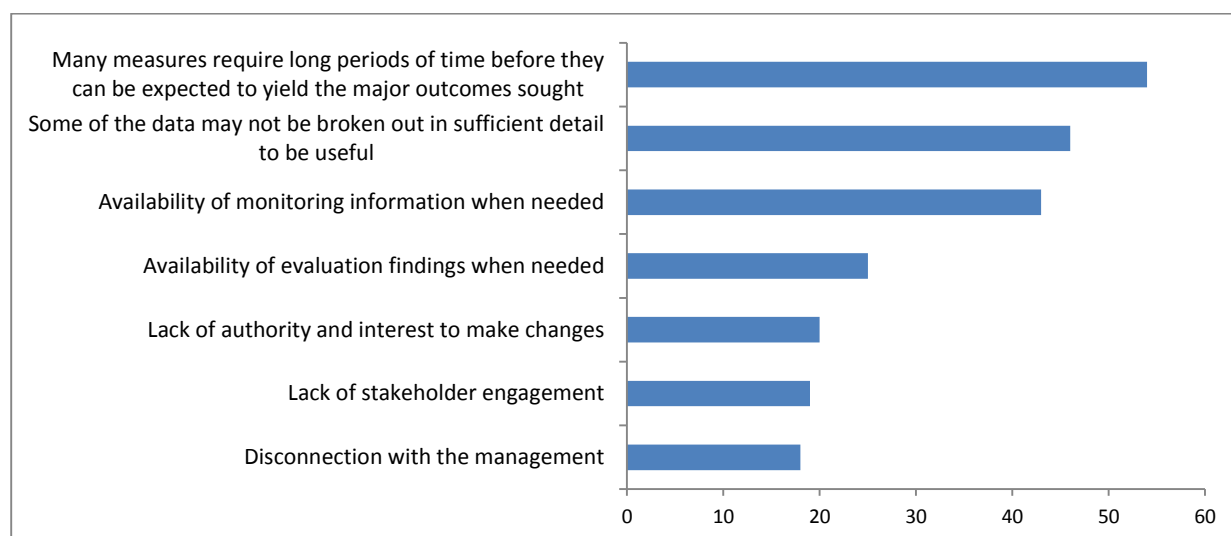


*Source*: authors' elaboration based on survey data.

# 5 Policy recommendations

Smart Specialisation was launched as an ambitious policy project to support the knowledge-based development of EU regions and Member States, in the aftermath of the financial crisis. In 2012, when it was firstly proposed, the RIS3 concept represented a significant novelty and challenge for many territories.

This survey took stock of the first four years of the RIS3 experience across the EU. It did so by addressing exclusively the policy makers formally responsible for RIS3 across EU countries and regions. As such it provides an extremely reliable representation of the perspectives on this policy experience and challenges faced by the actors involved in the design and implementation of the strategy.

The picture that emerges from the survey is, overall, a positive one. Smart Specialisation has generated dynamics that are valuable to regions and countries. The respondents are overwhelmingly satisfied with the exercise. However, there RIS3 process is not easy and progress is still needed in several areas.

As a way of conclusion, we propose some recommendations for the future with respect to the main criticalities and challenges emerged in the survey.

Smart Specialisation relies on the idea that good policy design and development depend on the characteristics of the regional context and that this context should shape policy specific objectives, priorities and instruments. In order to facilitate the adaptation of the policy to different contexts, the policy regulatory framework could explicitly differentiate the incentive schemes according to different territorial patterns.

The enhancement of capabilities and state-region coordination are two important issues that need to be widely addressed in the EU with specific measures.

The operationalisation of the Smart Specialisation concept is not an easy task and poses quite complex challenges to national and regional authorities. It is in fact highly demanding in terms of policy intelligence, governance arrangements, stakeholder engagement, policy instruments and monitoring. Public authorities should be encouraged to build more capacities on these aspects, namely in weaker regions and member states. Where necessary, the EC should require the design and implementation of an institutional capacity building plan, whose effectiveness should be constantly monitored.

There are several problems and challenges associated to the reality of the multi-level governance dimension of Smart Specialisation, such as: ineffective coordination mechanisms; lack of trust among authorities and actors placed at different territorial scale; difficulties in developing common visions that combine the different needs, agendas and expectations of the different territorial levels; and duplications of support measures and/or implementation of contradictory measures.

Multi-level governance requires clear and transparent coordination arrangements and mechanisms, where the different agendas and interests of all relevant stakeholders are brought to the fore. There is a need for investing more time and resources to build collaborative networks and create opportunities for institutional learning. Horizontal and vertical coordination needs to be carefully addressed since the initial design phases of policies and strategies to avoid the emergence of coordination failures in the implementation stage and poor delivery of public action. The national level should also be able to act as a competence centre on policy implementation issues and provide an adequate support function for lower level governments.

Finally, the engagement of some stakeholders, namely SMEs and civil society groups, in the RIS3 exercise has proven to be particularly difficult to achieve. Specific instruments and communication strategies are required to support their participation as well as capacity building measures to help stakeholders to develop the capacity needed to take part in RIS3. Restructuring the debate around those societal challenges that are locally relevant and their possible solutions, rather than on science or technological developments and trajectories, may promote a greater participation of civil society groups, citizens and other public bodies (other than the ones normally involved in science and innovation policies). A better understanding of SMEs innovation seems also required to achieve their greater engagement in the process. The organisation and coordination of RIS3 activities require an important role of the public sector as well as clear rules to ensure wide access, equal possibility to influence the process by all relevant stakeholders and transparency.

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