European Commission

JRC TECHNICAL REPORT

Reflections Guiding Smart Specialisation Strategies Impact Assessment

Caroline Cohen

2021

EUR 30610 EN

Contact information
Caroline Cohen
Edificio Expo
c/ Inca Garcilaso 3
41092 Seville, Spain

Email: Caroline.Cohen@ec.europa.eu
Tel.: +34 954 48 05 83

EU Science Hub
https://ec.europa.eu/jrc

JRC124046

EUR 30610 EN

PDF ISBN 978-92-76-30786-0 ISSN 1831-9424 doi:10.2760/838352

Luxembourg: Publications Office of the European Union, 2021

How to cite this report: Cohen, C., Reflections Guiding Smart Specialisation Strategies Impact Assessment, EUR 30610 EN, Publications Office of the European Union, Luxembourg, 2021, ISBN 978-92-76-30786-0, doi:10.2760/838352, JRC124046.

Contents

Executive summary

Throughout 2014-2020, Cohesion Policy has guided the investment of over EUR 450 billion (including national co-financing) to help achieve the EU-wide goals of jobs and growth and reduce territorial, economic and social disparities. Smart Specialisation has been an integral part and an ex ante conditionality of Cohesion Policy, which led EU Member States and regions to develop over 120 Smart Specialisation strategies, driving research and innovation investments of over EUR 40 billion provided by the EU (EUR 68 billion including national co-financing). Over the next programming period for 2021-2027, Smart Specialisation is expected to continue to play a major role towards regional development and cohesion in general and a smarter Europe by promoting innovative and smart economic transformation in particular. In practice, it will be the subject of a new thematic enabling condition, i.e. "Good governance of national or regional smart specialisation strategy", made up of seven fulfilment criteria covering the main success factors of Smart Specialisation Strategies (S3), from the design, to the implementation and the monitoring and evaluation mechanisms.

Considering the pivotal role of Smart Specialisation, this report summarises and analyses the main findings of the reflection and collective work engaged with 12 territories from across Europe that was carried out from March to December 2020 with the aim to collect evidence on the potential impact of S3 in the quality of policy governance and innovation ecosystem, as well as, its effects in terms of growth and jobs. It also examines the actions and measures developed and foreseen by several EU territories to conduct an impact assessment exercise of Research and Innovation Strategies for Smart Specialisation, at national and regional levels. Representatives and policy-makers of twelve territories across Europe[1] and an external expert[2] were selected and invited to participate to a brainstorming organised around three workshops.

When reflecting on the links between the changes in the governance system and economic transformation - which is the ultimate goal of Smart specialisation - , one has to ponder what can be directly attributed to the S3 approach. Indeed, the existence of other governance mechanisms at work within a territory, the overall budget allocated to research and innovation as well as exogenous shocks that may affect the economy should be taken into consideration. Although several contributing factors are at play, the governance of Smart Specialisation is perceived as an influential tool that brings about collective processes by which stakeholders can take part in the policy/decision making at regional level. It can open a continuous dialogue between a wide range of stakeholders and create a sense of ownership and consensus, fostering cooperation. This modus operandi is also conducive to the rise of innovative and more complex projects cutting across technologies, sectors and disciplines, as well as to a better and more efficient use of resources.

Although participants recognised the benefits of the S3 approach, all have stressed the difficulty they encounter in measuring its impact. Experts have emphasized the need to improve data collection and further develop monitoring systems and gain expertise in data analysis. Monitoring facilitates designing the right policy instruments that can help strengthen regional innovation ecosystems. In their opinion, a period of 10 to 15 years would be required to capture the full impact of S3. They also advocate to assess the impact of S3 in terms of people's well-being (and not only in terms of jobs and growth) and territorial cohesion.

Policy-makers have highlighted that Smart Specialisation has fostered the development of the innovation ecosystem, including inter alia, a more robust research climate, collaborative behaviours and cross-sectorial developments, the innovative attitude of S3 stakeholders, the acquisition of new capacity and competence, and the internationalisation of regional value chains. The active role of regional authorities to nurture the Entrepreneurial Discovery Process (EDP) and to support the territorial transformative agenda in line with stakeholders' needs is seen as key. Policy alignment/integration at different level can help foster cross-cutting opportunities. Clusters and higher education institutions are also playing a key role to stimulate technological transfer and cross-sectorial development, upgrade competencies in key priority areas and disseminate new business models.

[1] Including Marko Hren (Slovenia), Päivi Ekdhal and Marika Ikalainen (Lapland, Finland), Emanuele Fabbri (Tuscany Italy), Florence Hennart (Belgium), Luc Hulsman (Northern-Netherlands Alliance), Madalina Istrate (Romania), Cecilia Johansson and Madelen Nilsson (Sweden), Teresa Jorge and Sophie Patricio (Centro Region Portugal), Karolina Lipinska, (Pomorskie Poland), Ramojus Remeiris (Lithuania), Carmen Sillero and Maria Angeles Ruiz Ruiz (Andalusia, Spain).

[2] José Carlos Caldeira (Portugal).

The views from the policy implementation frontlines also underscored that the S3 approach offers a useful and powerful framework and toolset to support territories towards more fruitful, sustainable and inclusive development models. The experimental nature of the Smart Specialisation approach can play a central role in supporting new and innovative activities, help territories discover new opportunities and pursue new paths of development. The importance of territorial cohesion and territorial scale-up, as well as excellence, also emerged as key parameters in the process.

Acknowledgements

I would like to thank Dimitrios Kyriakou for his support, contribution and supervision.

My appreciation also goes to Anabela Santos for her insightful comments for the edition of this paper and participation in the workshops.

I am also grateful to all the stakeholders that have participated in the working meetings and provided their account on their approach and activities related to the impact assessment of Smart Specialisation Strategies implementation, from which this report is derived.

Author

Caroline Cohen

Abstract

This report summarises and analyses the main findings of the reflection and collective work engaged with 12 territories from across Europe that was carried out from March to December 2020 with the aim to collect evidence on the potential impact of S3 in the quality of policy governance and innovation ecosystem, as well as, its effects in terms of growth and jobs. Based on the reflection carried out with a wide range of member states and regions across Europe, it highlights different types of methodological approaches and measures that were developed and are foreseen by policy-makers to assess the impact of their research and innovation strategies at different territorial levels. Although participants advocate a 10 to 15 years' time span to fully grasp the impact of the induced changes related to the implementation of S3, the report shows that the Smart Specialisation concept is perceived as a pivotal enabler for industry renewal, bringing together stakeholders in the ecosystem and fostering international value chains. The experimental nature of the Smart Specialisation approach can play a central role in supporting new and innovative activities, help territories discover new opportunities and pursue new paths of development towards more sustainable and inclusive growth models.

1 Introduction

Throughout 2014-2020, Cohesion Policy has guided the investment of over EUR 450 billion (including national co-financing) to help achieve the EU-wide goals of jobs and growth and reduce territorial, economic and social disparities. Smart Specialisation has been an integral part and an ex ante conditionality of Cohesion Policy, which led EU Member States and regions to develop over 120 Smart Specialisation strategies, driving research and innovation investments of over EUR 40 billion provided by the EU (EUR 68 billion including national co-financing). These strategies are currently being implemented by involving national and/or regional managing authorities and stakeholders, such as universities and other research and higher education institutions, businesses, industry and social partners in a collaborative process.

Over the next programming period for 2021-2027, Smart Specialisation is expected to continue to play a major role towards regional development and cohesion in general and a smarter Europe by promoting innovative and smart economic transformation in particular. In practice, it will be the subject of a new thematic enabling condition, i.e. "Good governance of national or regional smart specialisation strategy", made up of seven fulfilment criteria covering the main success factors of Smart Specialisation strategies, from the design, to the implementation and the monitoring and evaluation mechanisms.

The essence of Smart Specialisation Strategies (S3), also referred to as Research and Innovation Strategies for Smart Specialisation (RIS3), translates to a place-based approach that builds on the assets and resources available to regions and Member States, as well as on their specific socio-economic challenges in order to identify unique opportunities for development and growth. In this context, "specialisation" entails identifying a limited number of well-identified priorities in a vertical logic, for knowledge-based investments and/or clusters to achieve competitive advantage at national and regional level.

Smart Specialisation is also based on stakeholders' involvement in the shaping of the innovation system, known as the Entrepreneurial Discovery Process (EDP); it relies on an interactive process between businesses, academia, the civil society and the public sector, in which stakeholders are discovering and producing information about new activities and potential opportunities. Furthermore, Smart Specialisation is outward-looking and embraces a broad view of innovation including but not limited to technology-driven approaches, and supported by effective monitoring mechanisms. In general terms, the purpose of this innovation policy concept is to promote the whole regional/national economy (Foray, D. and Goenaga, X. 2013).

The object of this study - that responds to a request formulated by the European Commission's Directorate-General for Regional and Urban Policy (DG REGIO) - seeks to examine "**the potential impact of Smart Specialisation by analysing the macro-linkages between the enhanced quality of policy governance resulting from the adoption of the strategies, induced changes in innovation ecosystems and the effects in terms of growth and jobs**".

In this endeavour, policy-makers representing more developed, transition and less developed territories were solicited. Selected experts in charge of implementing Smart Specialisation Strategies and/or having great experience in following the S3 policy process participated in this collective reflexion. Out of the 12 policy-makers invited, 7 have been taking part to a collective reflection together with members of the Smart Specialisation Platform over the past two years[3]. In total, policy-makers from 5 countries including Lithuania, Portugal, Romania, Slovenia and Sweden, as well as 7 regions including Andalusia (Spain), Centro (Portugal), Lapland (Finland), Northern Netherlands,

[3] Out of these 12 guests, 7 experts had already participated in collective reflection exercises about S3 development over the past 3 years:
- S3 Platform workshop on "Smart Specialisation Strategies implementation: Priorities, Related Policies and Impact Assessment" (2019): https://s3platform.jrc.ec.europa.eu/-/smart-specialisation-strategies-implementation-priorities-related-policies-and-impact-assessment-
- S3 Platform workshop on "Insights on assessing the Smart Specialisation experience" (2018) https://s3platform.jrc.ec.europa.eu/-/workshop-insights-on-assessing-the-smart-specialisation-experience-so-far-

Pomorskie Region (Poland), Tuscany (Italy) and Wallonia (Belgium) were involved. In the context of the emergence of the Covid-19 pandemic, this exercise was organised online and divided into three webinars[4].

The invited experts have also expressed their willingness to further their knowledge and compare and contrast various approaches, notably to better grasp:

- The role of public and private actors in successful S3 implementation
- The policies and instruments developed to conduct S3 impact assessment in various territories
- The policies and instruments developed by various MS/regions to derive real impact on development through Smart Specialisation implementation
- The links between different types of policies channelled through S3
- How EU regions are conducting their evaluation, monitoring and impact assessment of S3
- The methodologies and tools to measure impact of S3 policies and programmes
- The approaches to measure S3 impact that can help to better design business support policies for regional innovation and competitiveness
- And to exchange experiences on effective indicators to measure the RIS3 impact assessment
- Assess the potential impact of S3 towards territorial economic transformation
- Learn how to work the outward looking dimension of the process.

[4] Smart Specialisation Platform's workshops "Impact Assessment of the Smart Specialisation experience" (2020): https://s3platform.jrc.ec.europa.eu/-/test-s3-impact-assessment

2 Impact of Smart Specialisation Strategies implementation on governance

2.1 New or improved institutional arrangements

Stakeholders reflected upon the main institutional changes impelled by the implementation of Smart Specialisation Strategies (S3). In most cases, S3 has contributed to improve the governance system and coordinating mechanisms. Some participants to the workshops have outlined that S3 brought about new institutional settings (Slovenia, Andalusia, Lapland, Tuscany), whilst other emphasized the coordination mechanisms in a multi-level governance framework (Portugal, Sweden) with a contrast between the strategic and operational level at times (Northern Netherlands, Romania). Despite different levels of maturity and sophistication, the territories have developed policy measures and arrangements around RIS3 priorities, building on pre-existing policies and institutional settings, with better assignation of responsibilities among actors.

Besides, S3 has fostered the setting-up of clear frameworks for collaboration among actors (formalised division of tasks between actors, inception of a model for regional ecosystem, enhanced model for collaboration and international collaboration) and improved policy articulation and coordination (vertical and horizontal). Workshop attendees recognised the benefits of implementing a bottom-up approach - by integrating innovation stakeholders in the decision-making process - notably to revise the process smoothly, and to reinforce R&I ecosystems and trust in the institutions and among actors. In this respect, one of the challenges outlined is to match the needs of innovation communities in a timely way.

Based on information from this set of regions and countries, it appears that cluster policies play an important role at various territorial levels, notably to foster the involvement of SMEs in S3 related processes. In addition, the S3 approach has promoted R&I strategies' outward-looking dimension and a greater involvement in interregional and international clusters platforms, notably through the thematic smart specialisation (S3) platforms on agri-food, energy and industrial modernisation.

2.1.1 Factors triggering changes

The territories have developed or are developing different mechanisms to foster the governance of Smart specialisation. From an institutional standpoint, the experience of the regions/countries mentioned above emphasizes the need for an efficient and effective leadership and ownership of the process at the highest level. The existence of an overarching structure, able to bring together various scattered initiatives within a strategic framework is viewed as crucial (even though it is lacking in some territories). The implementation of a multi-level-governance model and a joint effort to build a common understanding on how to do things well are also perceived as key.

In addition to inter-ministerial coordination / inter-directorates working groups, some territories have created or are creating specific laws to govern and manage S3 in a robust and coherent way. Besides, several territories have stressed the role of the EU framework: the focus on operational programmes that finance S3 determined the preparation of an adequate governance framework, ensuring the setting and update of RIS3 and a functioning innovation eco-system at regional level. For instance, the region of Centro (Portugal) mentioned on the one hand, "the institutional architecture of the Partnership Agreement in Portugal combines national thematic programmes together with regional Operational Programmes, which are pluri-agenda. Convergence regions apply both for national and regional OPs. On the other hand, RIS3 is used as a criterion for the evaluation of the merit of regional projects to be funded by structural funds – e.g. alignment of project activity with one or several RIS3 priority(ies) is an eligible condition for funding provided under Thematic Objective 1 (TO1); and it is an evaluation criterion of project proposals under both TO1 and TO3". Other attendees have also

mentioned the fulfilment of the 7 criteria of the enabling condition to ensure the good governance of the national or regional smart specialisation strategies and related principles.

With regard to the development of stakeholders' involvement in R&I processes, the implementation of Smart Specialisation has often played a key role to bring together actors and/or to capture and channel the collaborative energy that was already present. Several challenges were outlined, notably the difficulties that managing authorities have encountered to explain the S3 concept to stakeholders. Territories have sought to develop a common vision and build common ground, so that all stakeholders understand the S3 principles. In order to do so, they have put in place communication plans to raise awareness and interest, as well as various training programmes. Another difficulty lay in the endeavour to connect the various individual initiatives and create synergies and critical mass (Northern Netherlands, Lapland) and to translate the EDP in tools to operationalize the strategy implementation, given the strict rules of ERDF. Several regions have developed clear arrangements and mandates to define the role of stakeholders and their respective tasks. Another important factor was the way stakeholders were involved, as they participated in regular meetings to discuss and take decision about new development paths. S3 processes have fostered a sense of co-responsibility where different actors participate in the design /elaboration /implementation of regional planning instruments (Andalusia). The engagement in a long-term approach and the co-design of regional development objectives are perceived as positive features that contribute to the transformation of the regional economy.

2.1.2 Indicators related to new or improved institutional arrangements

The indicators proposed by the experts are compiled and classified in the table below. It should be noted that the availability of data at different level - S3 priority domains, companies, products, clusters - is seen as an on-going challenge for the territories. Therefore, the indicators provided in this report are a mix of established and desired indicators that could serve as inspiration.

Box 1. Possible indicators related to new or improved institutional arrangements
Institutional arrangement: Setting-up of functional bodies that will ensure a good governance of the national and regional smart specialisation strategies Number of planning instruments adopting the RIS3 governance model Number of decisions generated through this new governance model finally adopted Fostering R&I processes: Number of communication and dissemination initiatives Number and types of meetings (S3 governance bodies, workshops, trainings, etc.) and number of participants over time Number of initiatives co-organized by the territory and clusters Number of cross-cutting projects / collaborative and high complexity projects Number of sectors (industrial/ entrepreneurial) affected/involved/ participating in the decision Number of new networks, notably emerging from S3 priorities working-groups Number of project ideas emerging from S3 priorities working-groups that resulted in concrete projects Number of reports published, Innovation barometer – trends analyses, articles published Number of participants and kind of stakeholders involved in Entrepreneurial Discovery Processes (EDPs) and participating to meetings (recurrent, new comers, withdrawals) Fostering the outward-looking dimension: Number of new European territorial cooperation projects aligned with RIS3 priorities Number S3 thematic partnerships generated and led by the region Number of territorial actors joining S3 thematic partnerships Number of participation in S3 interregional networks and projects Number of EU call applications submitted/facilitated by regional offices Combining different types of funding: Use of different funding instruments Utilisation of new international funding instruments Number of EU projects / EU call applications Number of tenders, nº of applications, nº of funded projects Number of joint projects Number of different types of stakeholders who co-fund ERDF projects Qualitative assessment Qualitative elements based on the feedback of stakeholders

2.2 New or Enhanced Stakeholders and impact

The participating territories have reported some qualitative improvements at regional level that relate to:

- The development of new collaborative initiatives, exploring new opportunities in triple and quadruple helix systems
- Stronger connections between strategies of different stakeholders
- More thematic focused approaches (emerging topics, societal challenges, etc.)
- New or improved regional development model that led to the involvement of new actors, including a significant increase of SMEs and start-up, environmental groups, as well as civil society organizations at times.

The vast majority of participating territories have created working groups based around key priority domains with regular thematic Entrepreneurial Discovery meetings. Frequently, steering committees were created, gathering main innovation and institutional territorial stakeholders. Besides, clusters at national and regional level have played a decisive role to boost stakeholder engagement in innovation ecosystems, and to foster cross-fertilization among projects related to S3 priorities. In many cases, S3 has facilitated the participation of stakeholders in interregional and international networks with the view to facilitate their integration in value chains. Several regions have also mentioned the development of multi-level approaches involving municipalities (Lapland, Northern Netherlands, and Tuscany).

2.2.1 Factors triggering changes

On the one hand, the regions and countries involved have mentioned that, providing clear mandate to stakeholders, and engaging them in participatory decision-making processes have increased the confidence and reliability of the private sector and citizens towards public policies. The entrepreneurial governance dynamics have also reinforced trust among territorial actors and contributed to the definition of prioritization activities. It is worth noting that Slovenia put in place a "proportionality rule" to ensure that smaller players could bring forward new ideas alongside bigger companies, whilst Tuscany (Italy) fostered "rules of engagement" for innovation intermediaries. Beside, societal challenge-based approaches have also encouraged the involvement of a wider panel of stakeholders. On the other hand, the role of the clusters and committed intermediaries have contributed to a great extent to broaden the types of actors participating in innovation processes. The Centro Region, for instance, has established a formal contract between the Regional Coordination and Development Commission (CDRC) and 8 regional and national clusters relevant for the defined S3 priorities. The main goal of this contract was to formalise the support given by clusters in communicating Centro's RIS3 and in capacitating stakeholders.

Furthermore, the availability of funding to promote joint activities is another important factor to take into consideration. For instance, financial and fiscal incentives are put in place to bring in new companies (Northern Netherlands), to boost thematic priorities clustering (Slovenia), or to foster their investment in R&D activities - although not limited to S3 priorities (Portugal).

What is more, Romania indicated that the participation in the RIS3 support to the "Lagging regions project" (2016-2020) managed by JRC[5] in collaboration with DG REGIO has supported national and regional authorities to reinforce regional innovation ecosystems and better identify potential beneficiaries.

[5] The "Lagging Regions project" on the Smart Specialisation Platform website: https://s3platform.jrc.ec.europa.eu/ris3-in-lagging-regions

2.2.2 Possible indicators related to new and/or enhanced stakeholders

It should be noted that the indicators provided for the assessment of the changes regarding institutional arrangements, stakeholders' involvement in innovation processes and capacity building are often interrelated.

Box 2. Possible indicators related to new and/or enhanced stakeholders
Types of stakeholders involved and types of projects Number of stakeholders involved in EDP activities Number of participants in meetings (recurrent, new comers, withdrawals) Number of new applicants/beneficiaries among actors involved within the EDP Number of regional partners aggregated joining thematic S3 Platforms partnerships Need to introduce new indicators to identify new players coming into play such as NGOs, social stakeholders, new types of innovators, new actors promoting social and environmental innovation. Effects of the EDP: Number of S3 working groups created Number of networks that emerged from S3 working groups Number of new ideas discussed that resulted in concrete projects Number of decisions from the working groups effectively implemented Number of joint regional collaborative approaches Number of joint ventures / projects Number of new science2industry partnerships among actors involved within the EDP Funding aspects: Number of new applicants to calls, per type (SMEs, start-up, etc.) Number of different types of stakeholders who co-fund ERDF projects Progress in participation to H2020 projects over time, in terms of number of projects approved, applications and volume of funding Types of actors, including SMEs and start-up participating to H2020 projects Number of new cross-cutting and high complexity projects presented within regional and interregional RTD calls Synergies of funds for joint projects The European and the Regional Innovation Scoreboard, e.g. in the case of the transition from moderate to strong innovators, provides evidence that stakeholders have been involved more effectively in R&I projects and activities.

2.3 Improved administrative capacity building

Most managing authorities involved have acknowledged that public administration and stakeholders have developed or are developing new skills to better coordinate and lead S3 related activities. New coordination mechanisms among actors were introduced that enabled the development of specific policy instruments necessary to support specific domains (Sweden, Slovenia, Northern Netherlands, Tuscany, Lapland, Andalusia). This requires an investment in human capital and the mobilization of various ministries for the management of S3 which can be difficult at times.

Besides, various territories have organised internal capacity building trainings and thematic EDPs and have underlined the need for a continuous commitment and endeavour from S3 stakeholders to develop the set of skills required for the implementation of the strategy. The Region of Centro (Portugal), for instance, mentioned the effort provided to follow all the important discussions and to participate in different projects, working groups and events, identified as important, together with regional stakeholders to further their understanding and involvement. Notably, the Region took part in European forums (EWRC, Smart Regions Conferences, Peer eXchange and learning workshop organised by the S3 Platform) and projects/initiatives (e.g. RIS3 support to Lagging Regions, Stairway to Excellence to foster the synergies between funds – e.g. working group H20204RIS3 -, S3 Thematic Platforms). For the latter, Centro has organised internal capacity building sessions, inviting some experts, to ensure that the RIS3 team improved the main tools and skills needed.

Furthermore, most territories have acknowledged the importance of international/European collaboration in the RIS3 process. The participation in S3 thematic platforms and international value chain networks has reinforced regional actors' skills and the articulation between cross-cutting projects. In turn, the involvement in EU-wide projects has allowed further embedding of the priorities of smart specialisation strategies in regional economic objectives, promoting a shared sense of the economic regional transformative agenda.

Implementing Smart Specialisation Strategies has also favoured and strengthened the culture of monitoring and evaluation. In Northern Netherlands, a monitoring system was developed together with universities and other stakeholders at an early stage. Some regions have benefited from S3 Platform support and guidance on monitoring issues. Several territories have worked with external evaluators that have helped them design a framework for indicators. Yet, assessing long-term objectives in short periods of time is an issue, especially when policy objectives established require longer periods to produce results. The interviewed member states and regions have outlined that it is still too early a stage to engage fully in impact assessment activities.

2.3.1 Possible Capacity building indicators

The indicators provided are often in close relation or can be similar to those given for the enhancement of stakeholders.

Box 3. Possible Capacity building indicators
Number of people engaged into / responsible for S3 development and implementation and/or number of new people (assigned/contracted for those tasks)
Number of training and workshops,
Communication and dissemination actions, number of social networks followers, number of messages re-twits, likes etc.
Initiatives on skills and competences for the managing body
Number of S3 evaluation carried out and discussions with stakeholders on lessons learnt and follow-up
Number of S3 meetings with stakeholders and number of people involved
Number of reports published
Number of innovative incentive schemes generated and implemented
Number of beneficiaries affected by the new capacities, incentive schemes
Number of projects developing the governance systems engaging various territorial level
Number of Regional Action Plans with RIS3 measures implemented
Number of meetings of the governances organisms
Number of stakeholders participating in governance process
Number of evaluations on S3 carried out and discussions with stakeholders on lessons learnt and follow-up
Number of projects developing RDI
Number of projects with triple and/or quadruple helix cooperation
Number of new management/business models adopted
European and international level:
New interregional projects and partnerships generated
New commitment in interregional and international projects
Number of participation in European projects as partner (notably H2020 and INTERREG projects)
Number of participation in international initiatives/platforms/networks
Number of regional stakeholders involved in international/European initiatives
Number of actors participating in S3 Thematic Platforms

2.4 Concluding remarks

When reflecting on the links between the changes in the governance system and territorial economic transformation - which is the ultimate goal of Smart specialisation - , one has to ponder the impact that can be directly attributed to the Smart Specialisation approach. Indeed, there are other innovation and economic strategies that influence the economic development of the countries/regions and S3 governance has to be analysed alongside other governance mechanisms. Moreover, depending on ERDF funding allocation, the S3 related funds are rather limited compared with the overall budget and GDP of a territory. Besides, S3 governance structures can be deeply affected by exogenous shocks, like the covid-19 outbreak. Nevertheless, the S3 governance can be seen as a tool for economic transformation and it is useful to pay attention to the way governance characteristics can drive territorial transformation. Participants have outlined that S3 governance brings about collective processes by which stakeholders can take part in the policy/decision making at regional level. It has the potential to open a continuous dialogue between a wide range of stakeholders and to create a sense of ownership and consensus, with less competition at stake. This modus operandi is conducive to innovative and more complex, inter-technological/cross-sectorial projects, as well as a better and more efficient use of resources. That should lead to new and concrete territorial opportunities and investments that boost growth, with its social and economic ramifications in the territories.

What is more, several elements were outlined:

- The need for leadership together with bottom-up processes to integrate different types of actors in the decision-making process. Novelty is often the result of combining different sectors and technologies, requiring more complex institutional arrangements.
- The importance of multi-level framework to reinforce territorial and strategic cohesion, taking into account global trends and societal challenges.
- Capacity-building and developing strategic intelligence competence are perceived as important drivers for economic transformation.
- Need to be agile to integrate the needs of companies in a timely way.
- The decisive role of clusters to bring stakeholders together and enhance technology transfer.
- Role of interregional cooperation and participation in S3 thematic partnerships.

3 Toward economic transformation: impact of adopting S3 on innovation ecosystems

3.1 Types of changes introduced and effects

In the programming period 2014-2020, several types of structural changes were introduced notably related to industrial transition, the circular economy and green-oriented activities, digitalisation, internationalisation, and territorial cohesion.

Most policy-makers acknowledged that regional innovation ecosystems have gained maturity thanks to the S3 approach. Smart Specialisation has fostered new models of organisation, with increased collaborative work between companies, Research and higher education institutions, and RTDI organisations (and greater firms' expenditure on R&D). This capacity to cooperate has allowed the emergence of more complex projects/investments, with a stronger focus on commercialisation of innovation. A better alignment of research agenda with S3 priorities is also noted. For example, in the case of Portugal, in a specific typology of instrument, especially relevant for RIS3 (mobilising projects), the number of projects supported has doubled with consortia involving a wider diversity of stakeholders and sectors. Furthermore, a new rule was set up to ensure the robustness of consortium, encompassing more structured collaborative R&D projects, and actors of the innovation triangle that are able to generate new knowledge and generate new products and services, with one (or more) lead users. This in turn generated more complete and bigger consortia, with higher chances for success and successful exploitation of results).

Although the managing authorities have emphasized that a longer time scale is needed to engage fully in impact assessment activities and it is too early to speak of impact, a large majority stressed positive effects that can be attributed to the Smart Specialisation approach, such as the inclusion of a wider range of stakeholders, improved entrepreneurship, strategic thinking, internationalisation, as well as measurement and monitoring methods. Interestingly, in the case of Portugal, the expert also highlighted in this regard the ramifications of the debt crisis, which erupted in 2010-11 as a corollary of the worldwide financial crisis beginning in 2007-2008. The expert noted that the main incentive for transformation was the crisis: companies that were working for the domestic market ran out of business and had to look for international markets. Moreover, cuts in public funding prompted state-funding-dependant institutions (like universities) to seek international funding.

3.2 Factors triggering changes

Ownership, political leadership and the behaviour of policy-makers are seen as crucial factors: the active role of the regional or national policy is required to intervene in cases of market failure and in order to deal with highly disruptive exogenous shocks. Likewise, the change in the mindset of regional stakeholders, towards developing an outward looking perspective is key. These factors have enabled a joint approach to solve regional - societal and economic - challenges, with a consensus on R&I priorities. Investments in skills and competences are perceived as other important elements to accompany and foster changes.

Cluster and interface entities are determinant driver to support economic transformation and the internationalisation of the economy, in line with S3 priorities. Cross-cutting dynamics and cross-sectoral collaboration among clusters have helped renewing industries. Clusters have supported the integration of innovation activities in SMEs, and have also boosted the acquisition of knowledge, technology transfer, and the development of value chains.

Other factors that were mentioned include:

- Systematic process of EDP and growing trust

- Consistency of policy instruments: S3 provides a framework to align policies in multi-level framework
- Participation in EC projects: industrial transition initiatives, JRC and S3 Platform projects
- Collaboration: calls that enhance collaboration of research organisations and companies, calls to support stakeholders' participation in European calls and projects (including H2020)
- Support for interregional networking initiatives (outward looking and international perspective) in more effective ways
- Innovation support schemes (R&D, KIBS, TT, etc.);
- Operational programme with ex-ante conditionality and partnership agreement
- Broader approach to innovation, involving social and creative dimensions
- Sustainability is taken as an horizontal approach.

3.3 Possible Indicators

As mentioned previously, policy-makers stressed that the changes that are occurring cannot be fully grasped in such a short time span. A period of 10 to 15 years is needed, for instance, to capture the effects of Smart Specialisation on complex value chains. Likewise, the availability of data is an issue. Practitioners have noted that indicators to measure the impact of S3 on innovation ecosystems are lacking - notably at sectorial, territorial and priority level. They recognised the need for constant improvement of the monitoring system: accurate information is needed to take appropriate and efficient decisions. For many, monitoring is still a difficult part of S3 and needs to be improved in the next programming period. Monitoring can help in measuring the impact of S3 on the innovation ecosystems, the dynamics of the Entrepreneurial Discovery Process and its overall performance. Several policy-makers are willing to pay greater attention to data collection related to EU-funded projects and their alignment with S3 priorities.

Box 4. Possible indicators of S3 impact on innovation ecosystems

Proxies signalling that the strategy is going in the right direction

Performance in H2020 participation compared to previous programming period, position on international markets, in terms of number of projects approved, number of applications, volume of funding.

Impact indicators applying to S3 domains: GDP, productivity, added value, labour force, specialization index, GINI index at sub-regional level

Gross expenditure in R&D. Value chains indicators.

Number of RDI projects, RDI expenditure amount, including Foreign direct investments SMEs engaged in R&I; share of SMEs investing in disruptive technologies

New behaviour: number of new applicants/beneficiaries in innovation projects (financial and qualitative support). Benchmarking: comparing actors behaviour in regional and EU calls

New opportunities: Number of new cross-cutting projects and high complexity projects presented within regional and interregional RTD Calls; new infrastructure and cross-regional use of innovation platforms; New ways in which actors are reaching new markets/territories (outward-looking dimension)

New partnerships: number of science-to-industry partnerships, interregional

platforms, working groups, EU joint projects, regional entities participating in EU partnerships including S3 Thematic Platforms, regional stakeholders participating in networks, structural projects in S3 areas: collaborative and inter-cluster projects, joint initiatives between regions, joint interregional and international projects.

New territorial engagement: growth of applicants/beneficiaries in innovation projects in peripheral areas; new rural-metro partnerships in innovation projects

Ideally, number of regional enterprises in high and medium-high technology sectors and nº of employees involved in projects aligned with RIS3; number of projects approved in Horizon 2020 aligned with the regional S3; Contribution of projects aligned/supported by RIS3 for the Gross Expenditure on Research and Development (GERD); Nº of structural projects having a substantial transformation impact in priority areas

However, to get a broad picture of the transformative dynamics, indicators are not sufficient. In order to assess the impact of the S3 on innovation ecosystems, the directionality of transformation should also be taken into consideration. Policy-makers have stressed the difficulty to detect the contribution and impact of S3 per se, given the constant technological changes at stake. The expected pace of transformation, its diffusion over time and the ability of innovation ecosystems to react to international/exogenous dynamics should also be taken into account. The more mature the ecosystems become, the higher impact Smart Specialisation Strategies can have, i.e. preparedness/agility and capacity to react, adapt and use the funds in the right way.

3.4 Concluding remarks

The views from the policy implementation frontlines underscored that the S3 approach offers a useful and powerful framework and toolset to support territories in their transition endeavour towards more sustainable and inclusive development models. The experimental nature of the Smart Specialisation approach can play a central role in supporting new and innovative activities, help territories discover new opportunities and pursue new paths of development. The importance of territorial cohesion and territorial scale-up, as well as excellence, also emerged as key parameters in the process.

"Novelty", "Integration" and "high complexity" are seen as the main S3 drivers for the improvement of the regional innovation ecosystem.

"Novelty" in terms of new actors that were/are not part of the ecosystems yet, new initiatives and processes, new types of calls, new types of partnerships, including inter-regional and cross-sectoral ones. The involvement of stakeholders in cooperative processes help policy-makers develop the right policy instruments to spur innovation and strengthen stakeholders' resilience.

"Integration" in terms of inclusion of territorial actors, sharing new opportunities, developing collective intelligence mechanisms; the governance need to be agile, react effectively and evolve continuously to avoid lock-in situations. The EDP should stimulate all forms of innovation, ranging from incremental to disruptive, to boost the creation of new opportunities and markets for economic players.

"High-complexity" in terms of capacity to invest, combining multiple technologies, new concepts, sectors, competences, experiences, territories and perspectives.

As mentioned earlier, the regions and member states involved reiterated the need to improve and further develop monitoring systems and gain expertise in data analysis. Monitoring facilitates designing the right policy instruments that can help strengthen regional innovation ecosystems.

4 Impact of adopting S3 in terms of growth and jobs

4.1 Impact of S3 in macro-economic terms

Participants have reflected together on the way Smart Specialisation Strategies impact assessment should be apprehended and how S3 value-added can actually be measured. Many have questioned the assessment of S3 in macro-economic terms at regional level. They perceived S3 as an enabler for industry renewal, bringing together stakeholders in the ecosystem. A large number of policy-makers advocated to focus on S3 priority domains and the way in which S3 can enhance the transformative agenda of a territory, rather than on growth and jobs. For instance, assessing the extent to which S3 allows for thematic concentration. They also pointed out that in their opinion, it was not possible to apply a statistical counterfactual analysis to analyse strategies (i.e. priority focus on photonics vs nanotechnology) and to assess the ex-ante factor, or to distinguish between the impact introduced by S3 and other exogenous dynamics.

Most of the member states and regions have indicated that they have undertaken mid-term evaluations, for instance:

- In Slovenia, assessment in terms of cluster policy, marketing, internationalization, and added value produced by sectors related with S3 priorities;
- In Romania, the assessment focused on research valorisation, technological transfer, improving TRL, and the ability to turn innovation into products, services, business and social processes and models;
- In Portugal, most indicators came from Operational Programmes execution. Some specific indicators were developed to measure S3 related dynamics (since it's still rather soon to measure impact);
- In Wallonia, focus on inputs and results for beneficiaries, without specific economic impact evaluation of S3 (lack of an efficient collective intelligence system dedicated to S3 and lack of investment in administrative capacity);
- Tuscany sought to measure the direct outcomes of S3 investments (notably, in terms of added-value, and productivity), the spillover effects and sustainability of S3 investments.

Some positive signs of improved performance in the framework programme 2014-2020 are already visible in macro-economic terms, for instance:

- A transition from moderate to strong innovator in the Regional Innovation Scoreboard (Centro Region, Portugal);
- An important distinguishing feature in the Pomorskie Region (Poland) is the sustained increasing innovative enterprises (25.6% in 2018, second position in the country, while the region was in the 13th position in 2013);
- Benchmarking and convergence analysis done at national level show that Andalusia and the Northern Netherlands are catching up compared with other regions, whilst certain municipalities are benefiting more than others;
- Some other managing authorities have not proceeded yet with S3 impact assessment analysis and are monitoring S3 processes on a continuous basis.

4.1.1 Factors triggering changes

Institutional capacity, capacity building and the ability to design policy instruments that focus on the real needs of companies are considered as determinant factors. A wide range of policy instruments have been used in these territories:

a) To improve the innovation performance of companies and their investment in innovation, (e.g. in the product and process innovation);

b) To promote collaborative initiatives among actors;

c) To promote sustainable development of businesses (e.g. development of more sustainable products, energy saving and raw materials);

d) To foster cluster policies;

e) To attract talents and investments, as well as to integrate immigrants;

f) To support the development of public digital services;

g) To boost technology transfer (including pilot and demonstrators) and the demand for innovative products and their commercialisation.

Moreover, policy-makers have also mentioned other important factors:

- Demonstrate the extent to which the evolution of the ecosystem's behaviour is in line with /due to S3 objectives (Portugal)
- Existence of policy instruments that cover all the phases of the innovation cycle (Portugal)
- Ability to design better instruments/calls for proposals based on concrete exploitation of opportunities (Tuscany, Wallonia)
- New instruments to improve efficiency with a focus on knowledge exploitation, greater collaboration between stakeholders (Wallonia)
- EDP focussing on real needs of companies, selection criteria based on concrete implementation opportunities and international standards (Tuscany)
- EDP focusing on very concrete areas, instead of broad areas: being focused is the only way to really attract companies, especially SMEs (Centro Region)
- Merging development strategies into one single S3 strategy, bringing coherence and stability within the innovation-ecosystem (Lithuania)
- Role of knowledge institutions as key drivers for change to achieve collaborative initiatives in new economic fields (Northern Netherlands)
- Cooperation of stakeholders resulted in joint platforms and projects; some of the problems laying in the discontinuity of policies and the heterogeneity of stakeholders (Slovenia)

4.1.2 Possible macro-economic indicators

It is important to note that the vast majority of experts have emphasized the importance of qualitative features for the full assessment of territorial innovation policies and of Smart Specialisation Strategies. The quality of life, the sustainability and quality of the jobs created, the decrease of social and economic disparity are identified as significant elements of development.

Box 5. Possible macro-economic indicators
Standard, existing indicators
GDP Growth and GVA, new companies, jobs, patents, etc.
GINI index at sub-regional level
Export growth rate, Balance export import
Export shares per value added
Sustained high share of innovative enterprises / total number of enterprises
Innovative SMEs collaborating with others
Science R&D capacity to create innovative technologies or processes
EU Regional innovation scoreboard
Labour market statistics
Qualitative indicators
Enhanced quality of life
More happy people (variable in an innovation index (REGLAB) in Sweden)
Increased employment with high added value
Ability to implement joint research and business projects
Ability to participate in global value chain with high added value
S3 related indicators
Productivity and added value in S3 domains
Specialisation growth in S3 domains
Labour force in S3 domains (employment, added value, competence)
Use of new technologies in S3 priority domains
Measuring the "complexity" of consortia, involving diversified/inter-sectorial arrangements
Digitalization of the economy
Business R&D&I capacity to develop and apply innovative technologies or processes
Activities related to S3 priorities + pre-commercial procurement, innovative procurement
Indicators providing an insight in terms of the dynamics of the innovation ecosystem: behaviour of SME's, linkages within the system, collaboration, innovation performance, potential new areas of specialisation.

4.2 Sectoral impact of Smart Specialisation Strategies

Given the transformative agenda associated with Smart Specialisation Strategies, participants pointed out the importance of analysing its impact from a cross-sectoral or sub-sectoral standpoint, together with the modernisation of traditional sectors and the emergence of new ones. Moreover, the diffusion of innovation throughout the territory and considering uneven impact are also perceived as crucial.

In general, S3 has promoted the development of cross sectorial activities and the internationalization of promising activities of most territories. S3 has allowed strengthening capacities to promote RDI excellence and technological change in the economic sectors with the greatest potential for growth, those that attract competences and investments (traditional and emergent ones). Besides, monitoring and evaluation have enabled regions to better support S3 priority areas and promote cross-fertilization among sectors. Some attendees have also mentioned that the S3 impact could be seen through innovation ecosystems' ability to bring together different priority sectors to respond and react to international/exogenous dynamics in a timely way.

4.2.1 Factors triggering changes

Attendees have listed a number of factors including:

- Cross-sectoral collaboration and infrastructures, R&D projects involving companies and knowledge institutes, the promotion of cross fertilization and more complex value chains
- Cluster policies (promoting the diffusion of transversal technologies notably related to digitalization and the circular economy)
- Approach based on developing solutions for end-users, addressing societal challenges
- New business models and capacity building, enlarging the number of SMEs involved
- Business competitiveness based on greater specialization, and internationalization
- Attracting FDI
- Having one single strategy, improved the research and innovation climate
- Availability of data
- Active role of regional authorities managing industrial transition
- TTOs centres, Technological and Business incubators, science and tech parks, Technological Information Centre.

4.2.2 Possible Indicators

The impact assessment of S3 in sectoral term is a tricky issue. As stated before, it is difficult to obtain measurable/tangible data and indicators for S3 related activities analysis (for instance, NACE-codes are often not appropriate). Policy-makers also indicated the difficulty they are encountering to get accurate and updated data. Besides, various territories emphasized the need to improve monitoring system constantly to catch the development of new potential areas of specialization, as standard methods and indicators often do not suffice.

Box 6. Possible indicators of the sectoral impact of S3

Directionality of transformation promoted by the S3

Support schemes promoting complex and cross-cutting application;

Specific indicators per sector/priorities (thematic areas/cross-sectoral fields)

Specialisation indexes in S3 domains

Degree of sectorial growth (companies, employees, turnover, investments, exports, etc.)

Rate of technology transfer

The pace of transformation fostered by the S3

Exploration and exploitation support schemes

International positioning

International standards provisions

Support in interregional networking

Value-chain indicators (share upstream and downstream links)

Percentage of companies which have innovated and marketed in the EU (international Innobarometer)

Export rate

Collaborative initiatives

Actions to manage industrial transition, active role of regional authorities, co-promotion/co-design

Number of new partners

Number of new networks

Cooperation between firms and research institutions

Number of innovative SMEs participating in knowledge transfer activities

Growing, more complete multi-sector consortia

Other

New methods employed, like Ron Boschma & PA Balland Relatedness model, Data mining efforts

Degree of resilience to react and adapt to exogenous shocks

Box 7. Information and indicators highlighted in the case of Wallonia

Value chain analysis based on regional input-output matrix for Belgium, exploring sectoral interlinkages (issue of time lag for data availability)

Performance indicators	Internationalisation indicators
Direct GVA rate	Index of relative dependence on international imports
Indirect GVA rate	Index of relative dependence on international exports
Total direct plus indirect GVA rate	Index of relative international exposure
Backwards linkages indicators	**Forward linkages indicators**
Index of relative dependence on intra-industry inputs	Index of relative orientation to intra-regional intermediate consumption
Index of relative dependence on intra-region, intra-industry inputs	Index of relative orientation of intra-regional demand to intermediate consumption
Index of relative dependence on extra-regional market services	Index of relative orientation to medium-high and high-technology intra-regional demand
Index of relative dependence on intra-regional market services	Index of relative orientation to knowledge intensive intra-regional market demand
Index of relative dependence on market services	Index of relative orientation to technology and knowledge intensive intra-regional market demand
Index of relative dependence on high-technology inputs	Index of relative average GVA rate of intra-regional market demand (branches)
Index of relative dependence on knowledge intensive services	
Index of relative dependence on high-technology and knowledge intensive services	
Index of relative average GVA rate of intra-regional inputs	

More information:

https://s3platform.jrc.ec.europa.eu/documents/20182/173082/Web3_Wallonia_S3+impact+assessment+on+growth+and+jobs.pdf/c83686f1-3791-43f6-aeb3-219a18c6cee9

http://economie.wallonie.be/content/etude-sur-les-relations-inter-industrielles-en-wallonie-et-le-positionnement-de-la-wallonie

https://www.iweps.be/publication/politique-poles-de-competitivite-cadre-de-strategie-de-specialisation-intelligente-analyse-evaluative/

4.3 S3 impact on growth and jobs

As mentioned above, based on the experience and analytical elements brought forward during the workshops, it is too early to assess properly the impact of the changes that have been fostered by implementing S3. The effect of enhanced collaboration in priority areas is expected to be visible in the longer term. The impact that can be seen at this stage relates rather to "enabling and enabled" priority areas.

With regard to S3 impact on jobs, in the participants view, S3 has favoured a research and innovation climate and culture, able to enhance jobs creation. The vast majority of member states and regions involved have mentioned an increase of R&D projects and a growth of knowledge-intensive / high qualified jobs with a high added-value in S3 related domains. They observed that job creation can notably be seen in the fields of the circular economy (green activities) and ICT. The competences acquired have often strengthened regional value chains and the ability of firms to join global value chains and compete worldwide in S3 domains.

Territories have supported the acquisition of new competences through different types of career development platforms and initiatives, notably in the domain of ICT. Migration policy to attract and integrate skilled work force are also developed (Pomorskie, Lapland). The involvement of research and higher education institutions as well as clusters and intermediate organisations have contributed greatly to improve employees' competence in S3 related domains.

4.3.1 Possible Indicators of S3 impact on jobs and growth

Box 8. Possible indicators of S3 impact in terms of jobs and growth
Job indicators
Change of employment, e.g. Number of jobs created in advanced technologies
Competence gained in cutting edge areas
Employment in different sectors/branches, especially highly qualified ones
Ability to attract talent
Skills gain
Students in higher education in S3 domains
Technology transfer entities supported
Number of benefitting enterprises
Critical mass in different S3-areas
Specialisation indexes in S3 domains
Analysis of territorial supply chains, also at sub-regional level
Analysis of income distribution related to workforce commuting using Labour Market Areas

Box 9. Information and indicators underscored in the case of Andalusia

Intermediate evaluation has evidenced the S3 impact on certain priority areas: Manufacturing industry, that engages in transformational process, has benefitted most from innovation support with 55.9% of subsidies granted by the IDEA Agency; High to medium-high technology received 30.2% of incentivized investment (while these activities represent around 5% of GVA in the Andalusian economy); "Agroindustry & healthy eating" and "Renewable energies, energy efficiency & sustainable construction" concentrate also incentivized investments; "ICT & digital economy" had also a great number of projects approved.

RIS3Andalusia contemplates the outcome indicators for TO1, Andalusian ERDF OP:

R001D. % companies making technological innovations

R001E. % companies that make technological innovations and cooperate with universities, public organisms for research, technological centres, etc.

R001S. Spanish participations in international project consortiums within H2020 programmes (number)

R003G. % documents published in scientific journals Q1

R003H. Scientific production of Andalusia (number)

R112G. Patents applied to SPTO (number) (Spanish Patents and Trademarks Office)

Reference to the Andalusian System of Indicators elaborated by the Andalusian Institute of Statistic and Cartography, IECA (https://www.ieca.junta-andalucia.es/indris3/index.htm)

Box 10. Information and indicators underscored in the case of the Centro Region

Regional innovation Scoreboard , from moderate innovator (2017) to strong innovator (2019)

Proportion of Gross expenditure on R&D in % of GDP – NUTS II and III (2017 and 2018)

R&D intensity benchmarking (2017)

International competitiveness (H2020/ESIF, SMEs participation, etc.)

Capacity to translate knowledge and innovation into economic value

Evaluation from the previous Programming Period 2007-2013 - Impact of the Incentives Scheme in the performance of the companies (in average, per company, at national level):

+ 39 000€ of expenditures in R&D

+ 579 000€ in exports

+ 376 000€ GVA

+ 8.2 employees

+ 1.6 employees with higher education

Comparison of the type and nature of projects between two programming periods

Number of projects approved, support allocated, collaboration b/w firms and higher education institutions, number of entities involved, etc.

Question: to what extent S3 contributed to this new dynamic?

Further information:

On the smart Specialisation Platform: https://s3platform.jrc.ec.europa.eu/documents/20182/173082/Centro_Presentation_Web2.pdf/c82a70e3-6f44-4837-b452-2a033f3920f1

Evaluation of the 2007-2013 programming period: https://www.adcoesao.pt/sites/default/files/avaliacao/resultados_das_avaliacoes_pt2020/01_dinamiacet_relatoriofinal_vf.pdf

Executive summary in English: https://www.adcoesao.pt/sites/default/files/avaliacao/resultados_das_avaliacoes_pt2020/dinamiacetexecutivesummary_empresas.pdf

5 Conclusion

Although member states and regions involved recognised the benefits of the S3 approach, all have stressed the difficulty they encounter in measuring its impact. In their opinion, a period of 10 to 15 years would be needed to capture the impact of S3 properly. Besides, it is complex to distinguish between S3 impact and that of endogenous factors at macro-level, and other influential regional, national and international strategies and interventions have to be taken into consideration for assessing the impact of S3. Data availability is a key issue and policy-makers have emphasized the need to improve monitoring and evaluation activities constantly to catch the development of new potential areas of specialization. Attendees have also pointed out the need to assess the impact of S3 on people's well-being (and not only in terms of jobs and growth) and on strengthening territorial cohesion.

Smart Specialisation Strategy is perceived as an enabler for industry renewal, bringing together stakeholders in the ecosystem. The experimental nature of the Smart Specialisation approach can play a central role in supporting new and innovative activities, help territories discover new opportunities and pursue new paths of development towards more sustainable and inclusive development models.

They also highlighted that Smart Specialisation has fostered the development of their innovation ecosystem over that period: a research climate, the innovative attitude of S3 stakeholders, the acquisition of new capacity and competence, collaborative behaviours and cross-sectorial development, the strengthening of regional value chains and internationalisation.

Moreover, the policy-makers have underlined the active role of regional authorities to nurture the EDP and support the territorial transformative agenda in line with stakeholders' needs. Policy alignment/integration at different level can help foster cross-cutting opportunities. Clusters and higher education institutions are also playing a key role to stimulate technological transfer and cross-sectorial development, upgrade competencies in key priority areas and disseminate new business models.

Several territories have already conducted a mid-term evaluation of their Smart Specialisation Strategy and have developed specific indicators to measure S3 related dynamics in line with S3 policy objectives, being in terms of the evolution of the innovation ecosystem and stakeholders' behaviour, innovation roadmaps activation, labour market features or technological diffusion at territorial level. They are also engaged in the preparation of their S3 impact assessment, with the analysis of the type and nature of projects between two programming periods, the sectoral and inter-sectoral development and related value chains as well labour income distribution.

Finally, participants expressed interest in future collaboration to further reflect with the JRC on different topics including:

Evaluation designs and approaches to assess the impact of S3

Interregional collaboration around RIS3 priorities and fostering the outward looking perspective

International benchmarking and peer reviews around smart specialisation priorities

Territorial and collective knowledge management tools around S3.

References

Carayannis, E.G., Grebeniuk, A. and Meissner, D., (2016). "Smart roadmapping for STI policy", Technological Forecasting and Social Change, No 110, 2016, pp. 109-116

Cohen, C. (2019), Implementing Smart Specialisation: An analysis of practices across Europe, JRC Technical Report JRC118729, Joint Research Centre, European Commission, Seville https://s3platform.jrc.ec.europa.eu/-/implementing-smart-specialisation-an-analysis-of-practices-across-europe

Foray, D. and Goenaga, (2013). The goals of Smart Specialisation. S3 Policy Brief Series No. 01/2013. https://doi.org/10.2791/20158

Gianelle, C., Guzzo, F., Mieszkowski, K. (2020). Smart Specialisation: what gets lost in translation from concept to practice? Regional Studies, 54(10), 1377-1388.

Gianelle, C., Kyriakou, D., Cohen, C. eds (2016). Implementing Smart Specialisation Strategies: A Handbook, Brussels European Commission https://s3platform.jrc.ec.europa.eu/-/draft-implementing-smart-specialisation-strategies-a-handbook

Guzzo, F., C. Gianelle, and E. Marinelli (2018). Smart Specialisation at work: The policy makers' view on strategy design and implementation, JRC Technical Reports JRC114141, Joint Research Centre, Seville. https://s3platform.jrc.ec.europa.eu/-/smart-specialisation-at-work-the-policy-makers-view-on-strategydesign-and-implementation

Kroll, H. (2019). How to evaluate innovation strategies with a transformative ambition? A proposal for a structured, process-based approach. Science and Public Policy, 46(5), 635-647.

Kyriakou, D., Palazuelos Martinez, M., Periáñez-Forte, I., Rainoldi, A (2016) Governing Smart Specialisation' ed. D. Kyriakou et al. published by Routledge, London

Neto, P., Santos, A., (2020). *Guidelines for Territorial Impact Assessment Applied to Regional Research and Innovation Strategies for Smart Specialisation* pp 211-230, in Territorial Impact Assessment, Springer, https://link.springer.com/chapter/10.1007%2F978-3-030-54502-4_12

European Commission, Smart Specialisation Platform website, Impact Assessment of the Smart Specialisation Experience, https://s3platform.jrc.ec.europa.eu/-/test-s3-impact-assessment

European Commission website, Impact assessments, https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/impact-assessments_en

European Committee of the Regions, Territorial Impact assessment Smart Specialisation, Brussels (2017) https://cor.europa.eu/en/our-work/Documents/Territorial-impact-assessment/smart-specialisation.pdf

European Commission Communication SWD(2017) 264 final, Strengthening innovation in Europe's regions: Strategies for resilient, inclusive and sustainable growth, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, 2017.
https://ec.europa.eu/regional_policy/sources/docoffic/2014/com_2017_376_2_en.pdf

European Commission, Summary of the public consultation on Smart Specialisation: A fresh approach to European growth and jobs through regional innovation strategies, Directorate General for Regional and Urban Policy, Brussels, 2017

https://ec.europa.eu/regional_policy/en/newsroom/consultations/smart-specialisation/

List of boxes

GETTING IN TOUCH WITH THE EU

In person

All over the European Union there are hundreds of Europe Direct information centres. You can find the address of the centre nearest you at: https://europa.eu/european-union/contact_en

On the phone or by email

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),

- at the following standard number: +32 22999696, or

- by electronic mail via: https://europa.eu/european-union/contact_en

FINDING INFORMATION ABOUT THE EU

Online

Information about the European Union in all the official languages of the EU is available on the Europa website at: https://europa.eu/european-union/index_en

EU publications

You can download or order free and priced EU publications from EU Bookshop at: https://publications.europa.eu/en/publications. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see https://europa.eu/european-union/contact_en).

KJ-NA-30610-EN-N

The European Commission's science and knowledge service

Joint Research Centre

JRC Mission

As the science and knowledge service of the European Commission, the Joint Research Centre's mission is to support EU policies with independent evidence throughout the whole policy cycle.

EU Science Hub
ec.europa.eu/jrc

@EU_ScienceHub

EU Science Hub - Joint Research Centre

EU Science, Research and Innovation

EU Science Hub

Publications Office of the European Union

doi:10.2760/838352

ISBN 978-92-76-30786-0