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Smart Specialisation at work: evidence from the Peer eXchange and Learning workshops

Fabrizio Guzzo

Inmaculada Perianez-Forte

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Contact information

Fabrizio Guzzo
Inma Perianez-Forte
Edificio Expo, c/ Inca Garcilaso, s/n
E-41092 Seville (Spain)
Email: Fabrizio.GUZZO@ec.europa.eu
Inmaculada.PERIANEZ-FORTE@ec.europa.eu

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Authors

Fabrizio Guzzo

Inmaculada Perianez-Forte

Abstract

The goal of this paper is to contribute to the collective learning process on the Smart Specialisation policy experience. It does so by presenting a systematic collection of evidence and lessons on this policy endeavour. More specifically, the reflections contained in this paper draw upon the views and experiences of national and regional authorities, collected during the Peer eXchange and Learning (PXL) workshops organised by the Smart Specialisation Platform of the European Commission's Joint Research Centre (Territorial Development Unit). Overall, 25 among European Union (EU) regions and countries were peer-reviewed and around 350 participants contributed to the debates. This report explores some of the main challenges, providing lessons and recommendations, on three important components of the Smart Specialisation policy framework: governance, entrepreneurial discovery process and monitoring. The arguments and list of points illustrated in this paper do not aim at completeness; rather, they represent an effort to collect disperse evidence and knowledge, which can inform the current debate on the future of the policy in the EU and beyond.

1 Introduction

Smart Specialisation represents an ambitious experiment in innovation and industrial policy. For the first time, national and regional authorities have been implementing a common set of policy principles to guide and prioritise investments in research and innovation for economic transformation across the European Union.

Since its conception and introduction in the 2014-2020 EU Cohesion Policy framework, a valuable learning process on the design and conditions for effective implementation has been accompanying the operationalisation of Smart Specialisation on the ground.

The Smart Specialisation policy community and researchers have deployed an impressive collective effort to promote knowledge creation and circulation on this specific policy experiment. The result is the flourishing production of books, academic papers, technical reports, policy briefs and online contents on Smart Specialisation (Fellnhofer, 2017; Mora *et al.*, 2019). Recent progresses in the conceptual framework of the policy as well as in the definition and operationalisation of the strategies in many places are, among other things, the outcome of this learning process.

This report aims at contributing to this collective learning effort by presenting a systematic collection of thoughts, evidence and lessons on the Smart Specialisation policy endeavour across the EU. More specifically, the reflections contained in this paper draw upon the experiences and views of national and regional authorities, collected during the Peer eXchange and Learning (PXL) workshops organised by the Smart Specialisation (S3) Platform of the European Commission's Joint Research Centre (Territorial Development Unit).

These workshops provided a valuable setting for open discussions among peers on common implementation challenges. A "horizontal space" to exchange thoughts and suggestions – beyond the vertical relational structure of the policy implementation process, where regional authorities interact alone with the national and EU levels.

The results of these debates are analysed and summarised here around three main dimensions of the Smart Specialisation policy scheme: governance, entrepreneurial discovery process (EDP) and monitoring. For each theme, we provide a list of challenges, followed by the lessons learned and recommendations commonly agreed upon by the participants during the meetings.

The reflections contained in this paper do not strive for completeness; rather they represent an effort to collect disperse evidence and knowledge on the Smart Specialisation experience. Evidence that can inform the current debate on the future of the policy in the EU and beyond.

The rest of this paper is structured as follows. The next section provides a brief overview of the Peer eXchange and Learning (PXL) workshops setting and experience, along with some information on the data gathering process. Section 3 contains the main findings and lessons of the workshops with respect to governance, entrepreneurial discovery process and monitoring. Finally, section 4 presents some concluding remarks.

2 The Peer and eXchange Learning setting

The Peer and eXchange Learning (PXL) workshops aim at creating a learning environment where national and regional authorities, together with experts, researchers and European Commission (EC) staff can explore and discuss practical and conceptual issues. In this setting, participants engage in focused discussions on important topics proposed by regions and countries under review.

Building on the S3 Platform experience on peer-reviews (Midtkandal and Rakhmatullin, 2014; Midtkandal and Hegyi, 2014), these workshops address the challenges emerging during the implementation phase of Smart Specialisation strategies. Regions and countries volunteer to be reviewed in an attempt to source both critical and well-timed advice on specific issues they are currently facing in the implementation of their strategies. PXL events provide an opportunity for regional and national actors to learn from each other's experiences and strengthen their networks. The rationale behind the PXL workshops is that peer learning can nurture experimentation and enhance policy effectiveness ⁽¹⁾.

In the period January 2018 – May 2019, eight workshops took place in seven different locations: Seville, Bilbao, Magdeburg, Aarhus, Vilnius, Linköping and Perugia. Topics and partners to be peer-reviewed were primarily selected on the basis of the results of a call for expression of interest launched in the second half of 2017.

More than 25 partners, among EU regions and countries, were peer-reviewed and around 350 participants contributed to debates. During the peer-review exercises the following components of Smart Specialisation were addressed: governance, entrepreneurial discovery process, policy instruments, monitoring, skills and resources for Smart Specialisation policy makers. At the end of each workshop, the S3 Platform staff drafted a feedback report containing the results of the debates with a list of recommendations and lessons learned (Table 1) ⁽²⁾.

This paper builds on the workshops' findings, included in the eight feedback reports, as well as on the information provided by the national and regional authorities under peer review, in the form of presentations and background documents.

⁽¹⁾ See the annex for more information on the PXL methodology, objectives and expected outcomes.

⁽²⁾ Detailed information on the workshops and related documents (presentations, background documents and feed-back reports) are available at: <https://s3platform.jrc.ec.europa.eu/s3-implementation-pxl>

Table 1. PXL workshops: locations, peer reviewed countries and regions and topics

Location and date	Peer reviewed countries and regions	Topics	Documents (available on line)*
Seville (ES), January 2018	Emilia-Romagna (IT) Northern Netherlands (NL) Wielkopolska (PL)	Policy instruments	PXL feed-back report Presentations and background documents
Magdeburg (DE), March 2018	Saxony-Anhalt (DE) North Karelia (FI) Estonia Jämtland Härjedalen (SE)	Entrepreneurial discovery process	PXL feed-back report Presentations and background documents
Aarhus (DK), March 2018	Helsinki-Uusimaa (FI) Tallinn (EE) Liepaja (LV) Lithuania Pomorskie (PL)	Entrepreneurial discovery process, policy instruments and monitoring	PXL feed-back report Presentations and background documents
Bilbao (ES), April 2018	País Vasco (ES) Finland Flanders (BE)	Multi-level governance	PXL feed-back report Presentations and background documents
Vilnius (LT), October 2018	Lithuania Friuli Venezia Giulia (IT) Lower Austria (AT)	Monitoring	PXL feed-back report Presentations and background documents
Linköping (SE), January 2019	Östergötland (SE) North Karelia (FI) Nord-Vest (RO)	Governance	PXL feed-back report Presentations and background documents
Seville (ES), April 2019	Castilla y León (ES) Comunidad Valenciana (ES) Murcia (ES)	Entrepreneurial discovery process and monitoring	PXL feed-back report Presentations and background documents
Perugia (IT), May 2019	Umbria (IT) Lapland (FI) Centro Region (PT)	Skills for Smart Specialisation policy makers	PXL feed-back report Presentations and background documents

*Peer eXchange and Learning website: <https://s3platform.jrc.ec.europa.eu/s3-implementation-pxl>

3 The Smart Specialisation experience: state of the art challenges and lessons for the future

3.1 Governance

The existence of a sound governance architecture is considered an important condition for the effective implementation of the Smart Specialisation strategies. At the same time, the improvement of governance mechanisms is one of the goals of the policy. Building better and more inclusive institutions along with improving vertical and horizontal coordination mechanisms and promoting collective action are indeed important underlying objectives of the policy, particularly in institutional weak contexts.

In the Smart Specialisation policy framework, governance implies the ability to engage with the private sector and intermediate organisations, coordinate within and across public administrations and agencies and ensure continuity of policy through electoral cycle (Radosevic, 2018).

Smart Specialisation entails institutions responsible for managing the strategies with a clear mandate and political support along with organisational and analytical capacities to effectively design, implement, monitor and evaluate the policy. How well these institutions perform depends on their internal organisation and expertise as well as on the political and institutional framework within which they operate. The existence of effective national and regional relational infrastructures, coordination mechanisms, networks of intermediary organisations and public-private cooperative behaviour help Smart Specialisation to thrive.

Governance arrangements are the result of existing institutional settings (e.g. the distribution of roles and responsibilities between different government levels) and capacity, administrative traditions, history of public-private interactions and participatory processes. These elements are path-dependent and context specific, so the resulting governance mechanisms tend to vary across the EU.

Given these differences, it is neither feasible nor advisable to propose a unique, monolithic, model of governance for Smart Specialisation that can be universally applied to every region or country. Nonetheless, it is still possible to draw the attention to the following four main framework conditions that can be considered generally relevant for effective governance.

- **Vertical and horizontal coordination.** The channels for an ongoing negotiation and collaboration with private and public actors need to be ensured. Effective inter-ministerial/departmental coordination mechanisms and links with elected representatives should also be in place.
- **Clear attribution of responsibilities and political support to the institution responsible for the management of the Smart Specialisation strategy.** They are essential to avoid the creation of structures with limited room for manoeuvre and ensure their operational and coordination functions.
- **Autonomy and accountability.** The appointed institution should be independent of and yet responsible to political representatives as well as private and civil society actors. Implementing bodies should have the necessary autonomy and adequate resources to limit rent-seeking behaviours and avoid incumbents and powerful lobbies capturing most of the policy resources or undermine the policy's transformative intention. Clearly, autonomy should be accompanied by accountability. The right mix

of autonomy and accountability should be carefully designed according to the characteristics of the political and institutional context and the administrative capacities.

- **Availability of adequate skills and resources**, in both public authorities and relevant stakeholders, to effectively carry out policy formulation, implementation, monitoring and evaluation.

These different components were extensively addressed in the PXL workshops. The results of the debates, along with recommendations and lessons learned are illustrated in the following sub-sections.

3.1.1 State of the art and challenges

In many regions and countries, thanks to the Smart Specialisation experience, public authorities have detected improvements in relation to the quality and effectiveness of coordination mechanisms, the level of trust between private and public actors, the involvement of stakeholders and the overall design of the strategy (Guzzo, *et al.* 2018).

Despite this progress, however, much remains to be done to improve governance settings and policy capacity, especially in weaker countries and regions.

Governance failures derive from problems related to one or more of the four framework conditions listed in the previous section.

The unclear attribution of responsibilities and the intra- and inter-organisational coordination obstacles currently hinder the effective implementation of the policy in different territories.

In addition, the lack of skills and capabilities in regional and national administrations and some stakeholders poses serious challenges to the development of better governance arrangements and constrains the effective executions of different policy functions.

The multi-level governance dimension of the policy is fraught with pitfalls in many countries. The most common problems include: vague distribution of responsibilities, ineffective coordination mechanisms, lack of trust among authorities and actors placed at different territorial scales, and duplications of support actions and/or implementation of contradictory measures.

Finally, the engagement of some stakeholders, namely Small and Medium Enterprises (SMEs) and civil society groups, has proven to be particularly difficult to achieve. In this respect, governance arrangements face a continuous tension between remaining open and securing the closure needed for effective coordination among a limited number of partners. There are risks, on the one side, of allowing the exploitative capture of public resources for private purposes and/or, on the other, extending the state's reach into civil society to serve the interests of the governing party (Jessop, 1998). Furthermore, the presence of strong incumbents represent a formidable obstacle to the diffusion of new policy ideas and more inclusive governance settings.

The following box contains a detail list of problems and challenges related to Smart Specialisation governance addressed during the workshops.

Box 1. Governance challenges

- **Unclear distribution of power and responsibilities between different territorial levels of government and bodies.** In highly centralised countries, institutions at sub-national levels often struggle for recognition, visibility and access to resources within national strategies and programmes.
- **Difficulties in developing common visions that combine the different needs, agendas and expectations of the different territorial levels and overlap of initiatives.** Tensions are likely to rise with the inclusion of different territorial scales in the policy process. Evidence shows that the proliferation of actors, ideas and strategies is accompanied by growing difficulties in including and coordinating different, sometimes diverging, interests and agenda.
- **Lack of clear political commitment for a more active engagement of sub-regional governments and actors.**
- **Implementing bodies not fully operating and ineffective inter-government coordination.**
- **Difficulties in engaging relevant actors** (intermediary organisations, companies and civil society groups) **in the policy process and obstacles to the mobilisation of the existing capacities in regional innovation ecosystems.** These problems depend, among other things, on ineffective coordination mechanisms and the lack of capacities within public administrations to design, structure and lead decision making processes. Scarce policy capacity among relevant stakeholders and weak infrastructure of intermediate bodies are additional obstacles to the greater involvement of relevant actors.
- **Lack of trust among different authorities and relevant actors.** Some stakeholders may be reluctant to get involved due to low trust level and concern about how the authorities would use their contributions.
- **Difficulties in securing continuous political support for the Smart specialisation exercise.** Initial political backing can vanish in the implementation phase (due to changes in government, declining interest by politicians, etc.). Without political support, expectations regarding the strategy's capacity to deliver planned results tend to diminish along with stakeholders' engagement in the process.
- **Weak policy capacity in public administrations and relevant stakeholders.** With respect to the specific dimension of governance, there are challenges in designing and steering policy making, often coupled with lack of skills and resources in government, intermediary organisations and other relevant stakeholders to effectively engage in the policy process (e.g. entrepreneurial discovery process, monitoring, evaluation, etc.).

PXL workshops: Bilbao (April, 2018), Linköping (January, 2019) and Perugia (May, 2019)

3.1.2 Looking ahead: lessons and recommendations

Strengthening vertical and horizontal coordination

- Regardless of differences in State organisation and governance structures, failures in horizontal and vertical coordination are fairly common across the EU. It is essential to keep on improving coordination mechanisms in order to enhance policy effectiveness in the next programming period. **The set-up of clear horizontal and vertical coordination mechanisms needs to be addressed since the outset of the Smart Specialisation strategy design. And the effectiveness of these mechanisms should be monitored throughout the policy process.** This is necessary to avoid coordination failure problems in the implementation phase, which

would undermine the efficiency and effectiveness of public action. For example, the integration of different funding sources (ERDF, ESF, etc.) to support an integrated policy approach requires the existence of an effective inter-government coordination. Management bodies should have a clear mandate and adequate instruments to ensure such coordination and that the different ministries/departments/agencies involved align their instruments and resources with the Smart Specialisation strategies' objectives and actions.

- **Smart Specialisation requires the strengthening (or creation) of institutional spaces** (such as central State-Regions committees) where the cooperation among different levels of government is continuously nurtured (see box 2).

Box 2. Vertical coordination

RED IDI

In **Spain**, the Smart Specialisation exercise has relied on the coordination mechanisms provided by the existing national *Thematic Network for Public Policies in the field of Research, Development and Innovation* (Red IDI). The network is considered as an instrument to generate synergies between regional, national and European research and innovation policies. Its objective is to optimise the design, implementation and development of public support frameworks for innovation, thus contributing to the better use of funds, in particular, the European Regional Development Fund (ERDF).

SUPPORT PROJECT TO ENHANCE THE COORDINATION AMONG THE NATIONAL AND REGIONAL LEVELS

In **Italy**, the national Agency for Territorial Cohesion (*Agenzia per la Coesione Territoriale*) designed a specific support initiative for the implementation and monitoring of national and regional Smart Specialisation strategies. Financed through the National Operational Programme "Governance and institutional capacity" (2014-2020), the project aims at: i) providing technical and methodological support to national and regional public authorities for S3 implementation and monitoring; ii) increasing the level of coordination among national and regional strategies; iii) promoting a more effective cooperation among different actors and levels of government; iv) supporting the design, implementation and monitoring of Thematic Strategic Plans within the National S3 context. In addition, in cooperation with the State General Accounting Department (Ministry of Economy and Finance), the Agency for Territorial Cohesion launched a pilot initiative to monitor the implementation of national and regional Smart Specialisation strategies at project level.

- **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.
- Where relevant, **local needs and objectives should be adequately represented in Smart Specialisation strategies implemented at regional level**. Regional authorities should enhance the role of sub-regional actors such as municipalities and other local organisations in Smart Specialisation (see box 3). This could certainly help to develop a greater sense of ownership and commitment to the strategy on the part of local authorities and actors.

Box 3. The involvement of the sub-regional level

THE BASQUE COUNTRY

On the involvement of the local scale in the Smart Specialisation policy process, particularly interesting are those experiences where sub-regional governments, institutions and actors play a role in strategies formulation and implementation. In the **Basque Country** (Spain), Smart Specialisation related planning and projects are emerging at provincial and city level (e.g. Smart Specialisation related plans in Gipuzkoa and Bilbao) thanks to the active role played by the local development agencies and the opportunities for sub-regional actors to participate in the policy process provided by the regional government. These experiences represent interesting local experiments requiring the reshaping of horizontal and vertical coordination mechanisms.

TERRITORIAL PLANS FOR SPECIALISATION AND COMPETITIVENESS (PECT)

Catalonia (Spain) actively promotes the involvement of sub-regional governments, institutions and actors in the implementation of Smart Specialisation through a specific policy instrument, the Territorial Plans for Specialisation and Competitiveness (PECT). This measure was launched to finance local strategies and action plans. These plans involve local actors and are led by local public authorities (e.g. city and provincial councils). They include specific measures, with a strong innovation component, aiming at supporting local economic transformation.

- **Information sharing and communication mechanisms need to be carefully planned.** This should be done at the outset of the policy process, following a systemic approach (involving different actors, expertise, tools, etc.). Information circulation requires specific communication expertise. Besides, it is important to set up *ad hoc* “spaces” and organise specific events to share projects’ results and information among regional actors.
- **To get messages across to a wider audience, it is essential to draft clear narratives.** Messages and the type of language should be adapted to target groups. It is important to avoid jargon and use projects’ examples and results to build an effective narrative on the policy.

Promoting stakeholder engagement

- To enhance the involvement of relevant stakeholders during the entire policy cycle, it is central to carefully plan their involvement and start working with them since the design phase. This implies the **establishment of effective inter-organisational coordination mechanisms and the strengthening of relational competences across organisations** (see box 4).
- **Clear objectives for public-private collaboration and transparency in the process** are essential elements in supporting greater stakeholder involvement and trust building. Clearly, the government has an essential role to play in this. Participants should know from the outset what their role is in the policy process.
- **Share information to build and reinforce trust between actors.** Information should always be communicated using language that is easily understandable and in a format accessible to all. Effective intra- and inter-coordination mechanisms are also needed to facilitate information flows.
- **An effective system of intermediate organisations** (business associations, cluster organisations, research and technology transfer centres, etc.) **is central for sustaining the Smart Specialisation process and building trust between different actors.** They should also clearly see the benefits of participation in the

process. To this end, it might be useful to design an "incentive structure" that actively promotes their greater engagement.

Box 4. Stakeholder engagement and coordination

STRATEGIC RESEARCH & INNOVATION PARTNERSHIPS

The *Strategic Research & Innovation Partnerships* (SRIPs), which bring together quadruple helix representatives, are promoting the formulation of joint strategic projects in **Slovenia**. Their aim is to facilitate the convergence of a wide range of technologies services, and social innovations in a systematic way. More than 500 relevant actors - involving *inter alia* firms and higher education institutions - are now engaged in bottom-up initiatives and networks that recognise the need for cooperation and integration. They have adopted road maps and action plans for joint development activities, internationalisation, human resources development, entrepreneurship and joint services promotion in relation to Smart Specialisation priority areas.

INNOVATION EMPOWERMENT GROUPS

Region Östergötland (Sweden) set up *Innovation Empowerment Groups* for each of the priority areas identified in the regional strategy. Bringing together representatives of the government, academia and business sector, these platforms represent an important space where Smart Specialisation issues are discussed and agreed upon. Improving the quality and intensity of interactions and increasing trust between different groups of actors are, according to the regional authority, two important outcomes of this initiative.

Capacity building

- Smart Specialisation requires **administrative capacity**. Capacities in policy design, implementation, monitoring and evaluation are necessary, both at national and regional level. If necessary, Structural Funds should be used to develop them.
- It is necessary to **build capacities on the policy process among intermediate institutions and relevant stakeholders** to enhance their level of engagement. Many actors are not particularly familiar with Smart Specialisation and, more in general, with participation in policy making. They might be willing to participate but are unable to do so because they do not have the required skills and resources. Specific measures should be implemented to overcome these obstacles and facilitate their participation in the design and implementation phases (see box 5).

Box 5. Capacity building

TARGETED SUPPORT IN NORD-VEST REGION

The European Commission (DG REGIO) financed specific support measures in **Nord-Vest Region (Romania)** to build institutional capacity and strengthen Smart Specialisation governance in public and private institutions at regional level. Carried out by the European Commission's Joint Research Centre and the World Bank, these initiatives represent a significant attempt at creating and nurturing regional systems in which learning is an essential component of the policy making process.

- The **national level should act as competence centre for sub-national authorities**, providing expertise and methodological support on the different phases of the policy cycle (design, implementation, monitoring and evaluation).

3.2 The Entrepreneurial Discovery Process (EDP)

At the core of Smart Specialisation lies the entrepreneurial discovery process (Foray *et al.*, 2009; Foray, 2015; Marinelli and Perianez-Forte, 2017), whereby stakeholders interact to identify a limited set of priority areas for investment in research and innovation. These areas must have market potential (in the shorter or longer term) and build primarily on the assets and resources of the territory. Priorities represent an effort to concentrate intervention on a few economic activities that guarantee an effective response to social and economic challenges, and offer opportunities for growth.

The entrepreneurial discovery process requires a strong engagement of relevant stakeholders, including civil society groups and organisations. The rationale is that a wider participation promotes the production and larger circulation of information and knowledge that in turn lead to better solutions, together with a broader consensus and legitimacy on decisions and greater responsibility in meeting objectives.

Within the 2014-2020 EU Cohesion Policy, the EDP was required for the initial selection of priorities for investment under Thematic Objective 1 (strengthening research, technological development and innovation). However, Member States and regions' experience over the past few years has shown that a continuous EDP is actually taking place, beyond the initial priority setting stage (Perianez-Forte *et al.*, 2016).

Clearly, there is not a single EDP model to apply across Member States and regions. The way the EDP is actually deployed on the ground largely depends on the specificities of each territorial context, such as the composition of the entrepreneurial fabric and business culture, the structure and dynamics of the territorial innovation system, tradition of stakeholder engagement, coordination mechanisms and openness to collaboration. Despite the variety of practices, a set of common challenges and core elements affecting the efficiency of the EDP have emerged over the past few years and are presented in the following sessions.

3.2.1 State of the art and challenges

EDP as a bottom-up process for priority setting brings new challenges and opportunities to policy makers. To help assessing the impact of the EDP, European regions and countries were asked to reflect on the experience, by participating to a survey carried out by the Joint Research Centre. Nearly all respondents (97%) considered the EDP as a positive practice during the elaboration of their respective Smart Specialisation strategies. Likewise, when policy makers were asked if the process was effective in identifying investment priorities for regional development, 93% of respondents provided a positive answer (Marinelli and Perianez-Forte, 2017).

The results of this survey also showed that the EDP has required adjustments to the governance system to ensure a more effective interaction and engagement with local actors. In terms of participation, the same evidence indicates that the EDP has been mainly a triple-helix type of interaction. Academia, industry and government have normally been more involved than other social actors. However, the regional authorities, which have experienced the involvement of civil society actors in EDP activities, positively value their contribution. They also recognise that they have often underestimated the interest of civil society in participating in policy-making processes and would like to promote its greater involvement in the future.

Member States and regions participating in the workshops have identified the following challenges associated to the prioritisation process (see box 6).

Box 6. EDP challenges

- **The abstract nature of the EDP idea makes it difficult to form a common understanding on the concept and its practice** among the community of academics, policy makers and practitioners.
- **The operationalisation of the EDP concept is not an easy task** and poses quite complex challenges to national and regional authorities. **It is highly demanding in terms of policy intelligence, governance arrangements and institutional capabilities.** Generally, countries and regions that score poorly on these aspects are those that are most likely to face the biggest challenges.
- **The organisation and coordination of EDP activities require an important role of the government as well as clear rules** to ensure wide access, transparency and equal possibility to influence the process by all relevant stakeholders.
- **Stakeholders' engagement (namely SMEs and civil society groups) in EDP is particularly difficult to achieve.** To begin with, it is problematic to get the right partners involved. 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 Smart specialisation. **It is then very challenging to keep stakeholders engaged in a continuous EDP,** even if stakeholders participate in the process at the beginning. Once priorities are selected, actors tend to lose their interest and the processes of knowledge creation, information sharing and eliciting, mutual learning and trust building tend to fade away.
- **A continuous EDP also requires the existence of a well-designed and functioning monitoring system.** Information on the strategy's progress should be made available and provide useful inputs for continuous EDP activities. However, to build a sound monitoring system and effectively use monitoring findings is not easy.

PXL workshops: Magdeburg (March, 2018), Aarhus (March, 2018), Seville (April, 2019) and Perugia (May, 2019)

3.2.2 Looking ahead: lessons and recommendations

The challenges identified above impose new demands on governments. Government' efforts need to ensure that EDP activities fuel innovation, while still ensuring policy coherence and stakeholders' engagement. Below some insights and recommendations to manage effective EDP activities:

Providing clear guidance, structure and follow up

- **An effective EDP needs to be carefully structured, planned and facilitated around a set of clear rules, guidance and procedures that ensure transparency, open access and wide participation in the process.** Public authorities should ensure a clear definition of roles and distribution of responsibilities among public and private actors from the beginning.
- **Solutions to increasingly complex policy problems require bringing together knowledge and practices scattered among different actors.** Public administrations should listen and learn from others to steer effectively transformation processes.

Ensuring a continuous EDP

- There is a need to **promote a continuous dialogue among stakeholders** to keep their interest on the process, not only in the identification of priority areas of intervention, but also on the strategies' development (implementation, follow-up and revision).
- **A continuous EDP relies on the strategy's progress information coming from the monitoring system as well as other policy intelligence tools** (mapping techniques, foresights, regional positioning in global value chains, etc.....). Public authorities need to build capacities on these aspects.

Reaching out and engaging stakeholders

- A clear **identification of strategies' objectives, expected results and outputs** is crucial to enhance stakeholders' engagement in the policy exercise. It is absolutely necessary to be realistic and clearly define what can be done and what cannot be done.
- A **better understanding of SMEs innovation needs** (through surveys, focus groups, interviews, etc.) is required to achieve greater SMEs engagement.
- It is central to **support and work with those who are willing to engage in innovative and risky initiatives and investments that have the potential for transforming the regional economy**. This may also make the Smart Specialisation strategies less susceptible to be 'captured' by the interests of particular sectors and actors.

Box 7. Engaging clusters in EDP activities

THE S3-4ALPClusters PROJECT

Focusing on the **Alpine Space**, the S3-4AlpClusters project is an example of how to increase clusters' interests and engagement in the Smart Specialisation policy process and EDP activities.

The project introduces a systematic process, the Smart Specialisation innovation model, which relies on the involvement of clusters for the identification and development of transformative activities. Tools are provided for each phase of the process. Stress Tests and Synergy-Diamonds are used as innovative ways of depicting existing capacities and detecting opportunities for structural transformation, both within and across regions. Entrepreneurial discovery workshops (EDW) build on this base of evidence in order to identify real transformative activities. Action development workshops (ADW) allow working out concrete actions such as R&D projects, networking or development of critical skills in order to gain critical mass for the identified transformative activities.

The implementation of these actions is supported by a collection of best practices of cluster services covering transversal fields such as education, technology, growth, research or collaboration. The partnership puts particular focus on facilitating the cross-regional implementation of actions, with the initiation of an interregional cooperation scheme (Alpine Cluster Innovation Express – ACIE) jointly funded by existing regional programmes (European Commission, 2016).

- Where relevant, **restructuring the debate around societal challenges and their possible solutions**, rather than science or technological developments and trajectories, may promote a greater participation of civil society groups, citizens and other public bodies in EDP activities (other than the ones normally involved in research and innovation policies).

- **Specific communication strategies and channels** are required to promote stakeholders' engagement in EDP activities.

Developing adequate policy instruments and mechanisms

- It is necessary to **provide support and more space and opportunities for continuous EDP** by establishing stakeholders' platforms for on-going discussion on the evolution of priority domains and the identification of new ones (see box 7 and 8).
- The introduction, experimentation and assessment of "**soft policy**" instruments, promoting collaboration among different actors, **and pilot initiatives may play a central role in EDP activities**. Their use should be encouraged (see box 7 and 8).
- It is crucial **to involve end-users in projects to support co-creation, co-design and co-production processes and promote greater engagement of different actors in Smart Specialisation**. In this respect, particularly inspiring are those initiatives in which small groups of different actors work together to design solutions for specific problems in targeted areas - e.g. health, urban mobility, sustainability, etc. (see box 8). This implies a change of the policy instruments' tool-box (public procurement, open innovation platforms, living labs, pilot initiatives, etc.)

Box 8. The role of cities in Smart Specialisation and the EDP at local level

THE SIX CITY STRATEGY

The *Six City Strategy* has reinforced cooperation among cities as well as between regions and cities, while the entrepreneurial discovery process (EDP) promoted at local level by this scheme has strengthened the involvement of all quadruple helix actors.

By acknowledging the importance of cities as living labs to test out innovative solutions for societal challenges through the involvement of university and research organisations, public authorities, business sector, civil society's organisations and citizens, *The Six City Strategy* initiative aims at strengthening the development of the six largest cities in **Finland** (Helsinki, Espoo, Vantaa, Tampere, Turku and Oulu).

This national city scheme combines regional Smart Specialisation strategies with broader urban development objectives. Financed through the National Operational Programme for Sustainable Growth and Jobs (2014-2020), *The Six City Strategy* is implemented through the Integrated Territorial Investments (ITIs) instrument in which different territorial levels share responsibilities in the design, management and monitoring of the strategy. Through the experimentation of challenge-based calls, where cities are required to present their proposals in cooperation among them, this initiative aims at strengthening the role of cities as important platforms for testing innovative technologies and solutions to societal challenges.

- **Demand side instruments, such as public procurement, seem particularly adequate for seeking and applying innovations to address grand societal challenges and effectively promote the EDP**. Despite the optimism about the transformative role of these instruments, their uptake is low. Their adoption is particularly demanding in terms of coordination, operational and analytical capacities. These requirements imply institutional change. The use of these instruments should be more actively supported by building specific capacities to design and manage these types of instruments, improving coordination and designing more effective incentive structures (see box 9).

Box 9. Policy instruments for entrepreneurial discovery processes

OPEN INNOVATION CALL

In order to ensure the continuity of the entrepreneurial discovery process and foster continuous collaboration, the **Northern Netherlands Region** has designed a specific instrument, the "Open Innovation Call". Dedicated to businesses and knowledge centres, this new policy tool promotes the development of joint initiatives with the capacity of generating a series of related innovations, which in turns activate the region's innovation ecosystem and open ways to concrete market potential. Particular emphasis is given to: 1) promising new areas that can emerge as new strengths (i.e. new niche markets and technologies, crossovers, etc.); 2) address the challenges of changing market conditions with new value chains and/or business models (users/developers); 3) increase the innovation potential of SMEs, and, in particular, increasing the number of small businesses that engage in open innovation processes.

The Open Innovation Call gives more flexibility to proponents and focuses on project objectives. The best (and qualified) projects are the ones that contribute most to the objective of the call.

Applications are assessed by an external expert committee. A two-step approach is being used. At an early stage in the process each applicant has the possibility to informally pitch its initiative in front of the committee. Feedback provided by the committee gives the proponents direction to further develop the quality of the proposal.

To support the call, the Northern Netherlands region facilitates the connections of emerging initiatives with relevant partners and networks, hence fostering synergies and economies of scale.

Capacity building for effective EDP

- It is crucial to **ensure sufficient resources for the operationalisation and continuity of the EDP** (e.g. identification and mobilisation of relevant actors, studies and analysis, follow-up and communication activities, etc.).
- There is a need to **promote 'change management' in public administration** by reducing bureaucracy, increasing the quality of planning and working on the establishment of a common understanding of the innovation concept. Similarly, foresight activities and future-literacy (e.g. the ability to work systematically on multiple future scenarios) are relevant. Public administrations should prepare for future technological transitions and act accordingly in due time.
- The EDP requires the presence of a **combination of analytical, operational, relational and communication skills in public administrations**. Public officials should have the capacity to identify and process crucial evidence that can inform decision making processes. Networking and operational skills are essential to engage with relevant actors and experts, to effectively manage working sessions with stakeholders and to design and implement effective policy instruments. Interpersonal skills are central to interact well with others, build trust and solve conflicts. Finally, effective communication skills, using adequate tools and messages tailored to the target audience, are required to provide stakeholders with information on project results and feedback on policy implementation.
- **Capacity building initiatives on the EDP for all quadruple – helix actors** is central for promoting greater stakeholder engagement.

3.3 Monitoring

Given its experimentalist and result-oriented approach, Smart Specialisation places a strong emphasis on the role of monitoring within the entire policy cycle.

The primary purpose of monitoring is to measure the effects of public policies and reflect on them to improve their efficiency and effectiveness. The attention to monitoring as a learning process stems from the inherently uncertain nature of policy making in real-world situations and the participatory nature of Smart Specialisation. According to this, stakeholders represent a crucial source of information and should be enabled to take part in the whole policy process and to constructively engage with it.

Smart Specialisation monitoring systems need to be tailored to the territorial contexts and information needs of relevant actors. However, even if there is no universal model, there are some general principles and indications that can be followed for designing a monitoring system.

- Effective monitoring activities require a **precise articulation of the policy intervention logic, linking ends (objectives, goals) with means (policy interventions, actions, measures) in a clear manner**. In the case of selective policy approaches, like Smart Specialisation, based on the identification of priority areas for intervention, each priority area should be explicitly linked to objectives and policy measures.
- **Monitoring tools and activities should be defined at the same time as the definition of the intervention logic and the identification of priorities and policy actions**. The quality and adequate functioning of the proposed monitoring system should be properly addressed by specific arrangements along with the adoption of a suitable framework for its governance. This includes the allocation of responsibilities and resources for building and implementing the monitoring system with the aim to ensure clear ownership, together with the identification of the main users.
- **A common understanding and consensus on what constitutes policy success and how to measure it is to be achieved by key actors**. The participation of stakeholders in the design and implementation of the monitoring activities, as well as in the interpretation of the resulting information is very important and should be properly supported. Stakeholder involvement plays a key role in determining how effectively the monitoring system can support policy learning. Compared to the government, stakeholders are usually closer to real-world phenomena and the level at which policy instruments operate, and they can develop knowledge and gather information faster than official administrative bodies (Marinelli et al., 2019).

3.3.1 State of the art and challenges

Whilst the importance of monitoring within Smart Specialisation is broadly understood, the task of setting up a monitoring system is perceived as particularly challenging by national and regional authorities. Monitoring design and operationalisation are quite demanding in terms of analytical capacity, data collection and stakeholder engagement ⁽³⁾.

⁽³⁾ In order to provide some guidance on and support to Smart specialisation monitoring, the Territorial Development Unit of the JRC, during the last few years, has provided some general principles and guidelines (Gianelle and Kleibrink, 2015; Gianelle *et al.*, 2016), organised workshops and targeted-support initiatives for different EU countries and regions and developed a Massive Open Online Course (Marinelli *et al.*, 2018).

The results of a survey on the Smart Specialisation experience across European regions and countries carried out by the Joint Research Centre show that the integration of monitoring and evaluation mechanisms represents the most challenging of the six steps of the design process. Lack of data and/or data availability when needed and lack of skills and capabilities within the public administration are the most frequent cited problems in relation to monitoring activities. No significant enhancement in the quality and effectiveness of monitoring activities could be detected by respondents thus far.

On a more positive note, the survey revealed that there is general agreement that the purpose of monitoring goes far beyond mere audit requirements and that national and regional authorities devote more resources to monitoring activities. Furthermore, even though monitoring relies mostly on official statistics and administrative data, the need for timely information and for monitoring the progress of priority areas has prompted management teams to increasingly use ad hoc surveys (on beneficiaries and stakeholders), focus groups and interviews to collect valuable information for monitoring purposes.

Finally, when it comes to highlighting 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 refer to technical aspects: "measures require long periods of time before they can be expected to yield the major outcomes sought", "data may not be broken out in sufficient detail to be useful" and "unavailability of monitoring and evaluation findings when needed". Obstacles referring to the coordination mechanisms and political dimension are less worrying for respondents (e.g. disconnection with managements, lack of stakeholder engagement and lack of authority and interest to make changes) (Guzzo *et al.*, 2018).

The following box contains a list of the main problems and challenges related to Smart Specialisation monitoring emerged during the workshops.

Box 10. Monitoring challenges

- **It is particularly challenging to monitor the progress of the specific research and innovation priority areas selected in the Smart specialisation strategies.** Existing indicators and official statistics, which supply data at a higher level of aggregation, generally do not provide useful information in this respect.
- **Engaging stakeholders in monitoring design and implementation represents an important challenge.** An open and inclusive discussion is needed if regions and countries are to reach a consensus on what policy success should look like, how it should be measured and what indicators should be used to assess it. Moreover, qualitative information provided by stakeholders is often crucial to complement and interpret quantitative information obtained through statistical sources.
- **Proliferation of indicators and data collection activities**, which can be extremely burdensome for some regions, and notably for the ones with weaker capabilities and resources. Smart specialisation is a multilevel policy framework in which each level of government has its own information requirements with respect to monitoring. For example, at EU level, there is a need to identify common indicators and aggregated data (common indicators are a powerful tool to communicate aggregated policy achievements across Member States); whereas, at regional level, public administrations and stakeholders need specific information on the progress in priority areas, feed-back on the effectiveness of policy instruments, etc.

PXL workshops: Aarhus (March, 2018), Vilnius (October, 2019) and Seville (April, 2019)

3.3.2 Looking ahead: lessons and recommendations

Enhancing monitoring design and implementation

- A **common and clear understanding of what we want to measure and why**. An effective monitoring system requires consensus on what constitutes success and how to measure it (indicators and targets).
- **Clear logic of intervention and objectives** are two fundamental pre-requisites for an effective monitoring system. Bad indicators, which are not policy responsive, are often the result of a vague logic of intervention/theory of change (see box 11).
- **Monitoring systems need to be designed according to available resources and actual capabilities for gathering and analysing data**.
- **Indicators and their effectiveness in measuring progress towards expected results should be constantly checked and debated**. There should always be room for reviewing indicators: if the selected indicators are not useful to measure policy progress they need to be changed.

Box 11. The basics of Smart Specialisation monitoring

In order to effectively support policy makers, stakeholders and scholars interested in improving their knowledge on how to monitor Smart Specialisation strategies, the European Commission's Joint Research Centre identified the key aims and characteristics of monitoring activities and consolidated such knowledge into a **Massive Open Online Course (MOOC)** freely available on the online platform *Iversity*.

Co-developed by European Commission staff, experts and regional policy makers, the course addresses the following elements: (i) the principles underpinning the monitoring activities of Smart Specialisation strategies; (ii) the selection of indicators; (iii) data-sources; (iv) the role of stakeholders in monitoring; and (v) the use of monitoring information.

The course covers conceptual together with practical aspects and provides concrete examples illustrating specific challenges and the way regions have tackled them.

- It is important to closely **monitor the results of pilot initiatives and group of projects falling within a specific priority area** to check their potential for transforming the regional economy and achieving critical mass as well as the evolution of the regional innovation eco-system.
- Monitoring by itself does not improve policy performance unless there is clarity and continuity in monitoring activities and **effective working relationships between the implementing authorities and other stakeholders** (see box 12).
- It is important to **engage evaluators in monitoring** activities. Evaluation questions may in fact enhance the effectiveness of monitoring activities by improving the selection of more suitable and policy responsive indicators. Furthermore, data sources for future evaluations should be addressed while designing policy instruments so that monitoring activities could contribute to provide useful information for evaluation purposes.

Improving data collection and analysis

- **It is necessary to give a meaning at the measuring process**. There are a few questions that policy makers should have in mind when building their monitoring

system. Are the data useful? Can we collect them in time? Do we have the necessary resources for collecting and analysing them?

- The **increasing importance of using different data sources** to collect valuable information for monitoring Smart Specialisation progress, beyond official statistics, such as ad hoc surveys, focus groups and interviews.
- **Quantitative and qualitative information in monitoring activities should be both used and combined**, as it is very important to detect the behavioral changes induced by policy interventions.

Box 12. Monitoring information, implementation evaluation and stakeholder engagement

The mid-term evaluation of the Smart Specialisation strategy in **Lithuania** took place at the end of 2018. The aim was to gain some insights on the implementation process, while identifying bottlenecks and the need for corrective actions.

This evaluation was **based on the data deriving from the monitoring system**. The information provided by monitoring activities informed the debates on the progresses of the Smart Specialisation strategy among relevant stakeholders.

Based on the evidence gathered through the implementation, national authorities decided to review the priority areas for public intervention. From 6 priority areas and 20 sub-priorities, 7 "new" priority areas were defined with the involvement of relevant stakeholders. It was also decided that, in the future, the potential of projects to address relevant societal challenges would be given greater prominence in the selection process.

Promoting stakeholder engagement in monitoring activities

- **The choice of monitoring objectives and indicators should be the result of a deliberative process.** More specifically, relevant stakeholders (such as SMEs, intermediary organisations and competence centres) should participate in establishing objectives, indicators, targets and corrective actions for the policy, as well as in gathering and sharing information.
- It is crucial to **plan stakeholder engagement since the initial design phase of the monitoring system and keep them involved in monitoring activities.** Relevant stakeholders (such as SMEs and intermediary organisations) should participate in establishing objectives, indicators, targets and corrective actions for the policy, as well as in gathering and sharing information. This gives different actors an opportunity to take part in the decision of what constitutes success, how to measure it and what indicators should be used to assess it. In addition, a high degree of stakeholder engagement increases the probability that the outcomes of monitoring activities will be used in management and policy making. When actors have a say and can provide inputs, they are more likely to develop a greater sense of ownership of the policy. This in turn can exert a disciplinary pressure on policy makers to pursue policy objectives and increases the chance that policy actions are not discontinued or downplayed when government changes.
- **Maintaining an open debate with relevant actors.** Keeping stakeholders informed about policy findings and how their feedback is being used certainly helps to maintain their interest and involvement and limit stakeholder dissatisfaction, which occurs when information is not shared or feedback is regularly ignored. So it is critical to develop effective communication flows between all the different actors. Information should always be communicated using language that is easily understandable and in a format accessible to all. Documentation should be simple, clear, brief, timely and accessible.

4 Concluding remarks

The implementation of Smart Specialisation is in full swing. National and regional authorities are currently engaged in the operationalisation of this policy in their respective territories. A wide range of practices are emerging, designing a diverse landscape of experiences across the EU.

In this report we presented a set of challenges, lessons and recommendations on three important components of this policy concept: governance, entrepreneurial discovery process and monitoring. The considerations here illustrated summarise the views and experiences of the Smart Specialisation policy community collected during a series of PXL workshops organised by the S3 Platform of the Joint Research Centre over a two-year period (2018-2019). Such reflections do not aim at completeness. Rather, by collecting and articulating dispersed evidence and knowledge, they represent a contribution to the collective learning effort on the design and conditions for effective policy implementation. Evidence that can inform the current debate on the future of Smart Specialisation within the new Cohesion Policy 2021-2027 framework.

Smart specialisation has promoted a great mobilisation of national and regional actors. Improvements have been detected mainly with respect to the policy process. New policy intelligence tools and capabilities have been developed, along with the experimentation of participatory methods and new soft governance structures to support the identification of opportunities and the selection of priority areas for public support. Finally, examples of continuous processes of entrepreneurial discovery can be detected in some territories (Guzzo *et al.*, 2018; Marinelli and Perianez-Forte, 2017).

Yet, the exchange of experiences and evidence gathered during the PXL workshops show that efforts are still required to improve the effectiveness of Smart Specialisation on the ground.

First, governance failures are quite common across the EU. Unclear attribution of responsibilities, weaknesses of the management functions, disconnection between the design and implementation phases, ineffective inter-government coordination, lack of trust between authorities placed at different territorial level and weak interaction with the private sector are among the most recurrent obstacles to effective Smart Specialisation governance. Policy makers agree on the importance of establishing clear horizontal and vertical coordination mechanisms from the outset of the strategy, to avoid coordination failure during the implementation phase. They also acknowledge the need to regularly assess their effective functioning and achievements over time. Likewise, clear objectives for public-private collaboration, effective communication and transparency are considered essential elements in supporting greater stakeholder engagement in the policy cycle and trust building processes. Finally, the enhancement of policy capacity, in public administrations and relevant stakeholders, is widely acknowledged. This is an imperative for territories with weak institutional capacity, but it has appeared as a point of concern also in more advanced institutional settings.

Second, the operationalisation of the EDP poses severe challenges to national and regional authorities. It is highly demanding in terms of institutional, analytical and operational capacity. There is a general agreement that the government should play an important role in structuring the EDP around a clear set of rules, guidance and procedures to ensure transparency, open access and wide participation. Processes of continuous entrepreneurial discovery can benefit from a more decisive uptake of public procurement for innovation together with the promotion of exploratory initiatives and soft

policy instruments, supporting the collaboration among different actors. And, finally, given the inherently uncertainty regarding innovation activities, a continuous EDP relies on the insights deriving from policy intelligence tools and the timely information on the progresses of public action provided by an effective monitoring system.

Finally, the design and operationalisation of the Smart Specialisation monitoring system are highly demanding tasks in terms of analytical capacity, data collection efforts, financial and human resources and actors' participation. Policy makers agree that an effective monitoring system should be based: first, on a common understanding on what constitute policy success and how to measure it; second, on the existence of a clear logic of intervention, linking ends with means; and, finally, on the presence of the necessary coordination and communication mechanisms allowing monitoring findings to inform decision making processes. In addition, policy makers acknowledge the importance of closely monitor the results of pilot initiatives and group of projects falling within a specific priority area. The objective is to check their potential for transforming the regional economy and achieving critical mass as well as the evolution of the regional innovation eco-system.

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Annex 1. Peer eXchange and Learning workshops: methodology and objectives

PXL Methodology

Peer eXchange and Learning (PXL) is a methodology for reviewing specific elements of research and innovation strategies for Smart Specialisation (RIS3) and territorial development strategies and tackling the associated implementation challenges. It is an important instrument currently offered by the S3 Platform of the European Commission to EU Member States and regions.

PXL builds on the well-established peer-review approach of the S3 Platform. It supports transnational learning by bringing together regions and countries for an exchange of knowledge and experience, mutual learning and the exploration of ways in which innovation and development strategies can be effectively implemented, adjusted and revised.

PXL creates an open and trusted learning environment where practical and conceptual issues can be discussed and explored through the experience of individual regions and countries. It engages peers and experts in focused discussions on important issues that the regions and countries under review raised and guides them to distil a range of collective suggestions and lessons into a coherent picture.

PXL especially aims to tackle the challenges emerging during the transition from strategy design to implementation. It does so by: (1) focusing the discussion among regional and country representatives, experts and European Commission staff around a thematic frame which is typically a single theme, process or element of the strategy; (2) preferentially targeting a community of policy makers and practitioners who are at the stage of transforming planned objectives into results through concrete actions.

PXL Workshop

A PXL workshop has a single thematic frame (e.g. governance settings, priority definition, monitoring, policy mix, etc.). It runs over one full day and includes peer review of two to four regions and/or countries. Individual PXL sessions focus on one region or country and last around one and a half hour.

The workshop is typically opened by one or more expert presentations and a debate around the framing topic. This opening session should set the scene and provide a broad set of views, approaches and insights for the individual PXL sessions. The debate can take the form of a dialogue between experts who will alternately provide arguments in support of and against common practices or believed-to-be-good practices in the field defined by the workshop's framing topic. This type of dialogue would help to stimulate the following discussion to go beyond traditional formulations of problems and solutions.

The workshop continues with individual PXL sessions. A presentation of each region or country's current work on the thematic frame is generally followed by a Q&A session. Specific issues identified by the regions and countries under review are then discussed at individual tables in two iterations, which ensure that participants can: work together to understand the actual problems; propose solutions to these problems by discussing what worked well and what did not work; and learn together how to deal with new policy issues in new contexts.

An S3 Platform team member facilitates each PXL session in line with the participatory leadership approach. Such a participative approach encourages all participants to share or participate in the discussion and to identify key messages. It allows engaging participants in a dynamic and creative discussion, which benefits both the regions and countries under review and their peers.

PXL sessions are followed by a final session during which all participants (experts, representatives of the regions and countries under review, peers, and European Commission staff) summarise the results of the sessions, and discuss individually and mutually lessons learnt. At this point, the regions and countries under review have the opportunity to respond to any feedback collected throughout the workshop. Finally, they share their main insights with peers and may mention any short- to mid-term plans to apply them.

Building on the general structure described above, the format of the workshops is tailored according to the topic's requirements and needs expressed by regions and countries.

Objectives and Expected Outcomes

Regions and countries volunteer to be reviewed in an attempt to source both critical and well-timed advice addressing specific issues they are currently facing in the implementation of innovation and development strategies. Regional and national policy makers may also view PXL workshops as a good opportunity to build their networks of counterparts across Europe.

PXL sessions aim to achieve the following outcomes: (i) to better understand the thematic frame of the whole PXL workshop; (ii) to provide general feedback to each region and country under review; (iii) to examine the specific issues presented by each region and country under review and propose how they could be tackled or solved; and (iv) to build up awareness and knowledge about problems that are common across Europe.

During the workshop, the S3 Platform team collects any relevant information and data covering different elements of each PXL exercise. A brief summary/feedback report will be drafted and circulated by the S3 Platform team as a final output of the workshop.

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