

RIS3CAT Monitoring

10. Learnings from the RIS3CAT 2014-2020

April 2020

Learnings from the RIS3CAT 2014-2020
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The content of this analysis does not necessarily reflect the view of the Directorate-General for Economic Promotion, Competition and Regulation; rather, it summarises the views of multiple actors that participate in RIS3CAT as managers of tools or as beneficiary entities.

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1. Introduction

Research and innovation strategies for smart specialisation (hereafter, RIS3) are a key element in the Europe 2020 strategy for smart, sustainable and inclusive growth. In its decided commitment to making knowledge and innovation a priority, the European Union has called on governments to develop RIS3 with a view to ensuring that research and innovation investment funded by European funds is coherent and maximises impact on the economic and social development of both the territories and Europe as a whole. Accordingly, in the 2014-2020 period, all research and innovation activities funded by the ERDF were implemented within the RIS3 framework. In the case of Catalonia, this strategy is articulated by RIS3CAT, the Research and Innovation Strategy for the Smart Specialisation of Catalonia, approved by the Catalan Government in 2014.

RIS3 are agendas for economic transformation that adopt innovation and knowledge as drivers and are characterised by the following elements:

- Selection of a limited number of specific priorities established according to international specialisation and the strengths of the territory.
- Strengthening competitive advantages and adaptation of R&D&I capacities to the needs and capacities of the business fabric in the territory.
- Critical mass of resources and talent.
- Intersectoral and interregional cooperation aimed at stimulating specialised diversification and avoiding duplication and fragmentation.
- Collaborative leadership, which implies active participation in the innovation system by government, research and innovation players, companies and civil society, as well as the generation of synergies between various sources of funding (European, State, regional and local; public and private).

These agendas for transformation are articulated through so-called “entrepreneurial discovery processes”, that is to say, bottom-up approaches in which government, companies, the universities, research and innovation players and civil society (hereafter referred to quadruple-helix players) identify areas of specialisation in the territory and then design and implement programmes, actions and projects to promote them.

Within this framework, the public administration is called on to play a key role as a driver of innovation and social transformation through policies aimed at mobilising knowledge and capacities in the territory with the aim of generating new responses to societal challenges. In this line of action, through RIS3CAT, the Government of Catalonia promotes public policies and projects that articulate efforts made by various stakeholders to develop new responses to complex societal challenges. These are collective challenges with diverse and interrelated causes and which,

therefore, cannot be addressed by a single institution. This is because, generally speaking, the possible solutions involve changes at different levels and in the behaviour of both individuals and organisations.

The discovery processes that RIS3CAT promotes require a dynamic, participatory monitoring system that focuses more on strategic learning than on the achievement of previously established goals. This monitoring system should enable us to understand the contribution made by different actions to achieving the strategic objectives shared by the various stakeholders. The main features of the [RIS3CAT monitoring system](#) can be summarised in the following points:

- The monitoring system is dynamic; that is to say, it evolves as advances are made in the design and implementation of the strategy.
- It is participatory, as the stakeholders in the system establish the goals and indicators for their projects, provide the quantitative and qualitative information that enables the strategy to be adapted and determine the process for the smart specialisation of the research and innovation system in Catalonia.
- It focuses on learning and promotes continuous adaptation of RIS3CAT and its instruments to respond to the challenges and opportunities identified.
- It enables measurement and evaluation of the results and impact of the strategy.

In this context, the documents published in the “RIS3CAT Monitoring” collection, ensure monitoring of the implementation of the RIS3CAT Action Plan and analysis of the main lessons learned with a view to improving the efficiency of public policies so that they respond more effectively to societal challenges. This report highlights the lessons learned and the challenges identified in the process of implementing the RIS3CAT Action Plan up to 2019, both in terms of establishing instruments and projects and as regards the participation of quadruple-helix players. It also makes recommendations for improvements, and describes the actions required in 2020 to draw up the RIS3CAT Action Plan 2021-2027, taking into account the lessons learned from the current period and the framework established by the European Union. The lessons learned and the challenges studied are also discussed in greater detail in the following documents:

- [Specialisation and contribution to SDGs](#) (March 2020)
- [Articulating shared agendas for sustainability and social change](#) (January 2020)
- [Monitoring Report on the RIS3CAT 2015-2020 Action Plan](#), (May 2019), the latest monitoring report published to date

- Call for proposals for public procurement of innovation in the field of health (April 2019, [available in Catalan](#))
- [*The potential of public procurement of innovation to provide more effective responses to societal challenges*](#) (March 2019)

2. Lessons learned

Broadly speaking, implementation of the RIS3CAT Action Plan has revealed the difficulty of effectively and efficiently articulating the many elements that intervene in it, which are as follows:

- Instruments to support ambitious research and collaborative innovation, aimed at coordinating the system and the different stakeholders.
- The agility, flexibility and adaptability required by the production and research and innovation systems.
- Highly inflexible and excessively time-consuming administrative requirements and processes (resulting from regulations governing subsidies and structural funds, as well as the organisation and operation of the public administrations involved) that raise doubts over the cost-effectiveness of the funds.
- A restrictive interpretation of these process by auditing and control units.
- A political and economic context that makes it difficult for public administrations to co-finance their actions.

The following sections are devoted to identifying the key lessons learned during the implementation of the RIS3CAT Action Plan 2015-2020. Analysis is made from two perspectives: that of the units that manage the calls for proposals; and that of the quadruple-helix players that participate in them.

2.1. Managing calls for proposals

The deployment of the RIS3CAT Action Plan 2015-2020 was accompanied by a continuous, intense conversation between the unit that manages ERDF Catalonia, the unit that coordinates RIS3CAT, the units that manage the RIS3CAT instruments and the organisations that implement the projects. This constant dialogue enabled RIS3CAT to become an adaptive strategy, that is, a strategy that can adapt to respond to any challenges and problems that may arise during implementation and to benefit from opportunities identified.

The units that manage the RIS3CAT instruments and the organisations that implement the projects have identified the following challenges or points for improvement in the 2021-2027 period:

1. Administrative processes take too long and the provisions established in timetables are not fulfilled

The timetable for calls for proposals under the RIS3CAT Action Plan, approved in 2015, has not been fulfilled, as the periods for approving and resolving calls have

gone on longer than was initially planned. The excessively long processes and uncertain dates of publication and resolution of calls forces companies and beneficiary organisations to adapt their project planning. This obliges managing bodies to approve the proposed changes to projects and slows down all procedures even more. The additional bureaucracy causes delays in the completion times of tasks described in the projects, so that financial corrections must be made to both project budgets and the final amount of funding awarded. This can lead to significant losses to beneficiary entities and, in some cases, beneficiaries have made losses precisely because they received funding.

Challenge for the 2021-2027 period

- To plan the calendar of calls for proposals in accordance with the reality of administrative procedures.
- To simplify administrative procedures for calls, and reduce their duration, both for the preparation and approval of the prerequisite clauses and for resolution and justification of costs.
- To explore the feasibility of alternative financing frameworks to calls.

2. The regulations are rigid and often entail different interpretation criteria, depending on the work unit involved (audit and control), as well as legal uncertainty

Differences in interpretations of the regulations impede effective management of the call as a whole. They also generate legal uncertainty and often require financial correction, which seriously harm the interests of beneficiary organisations. Bureaucracy becomes an objective in itself and is not aligned with the strategic objectives of projects. RIS3CAT projects involve a component of uncertainty that is inherent to any research and innovation project, particularly within a context of rapid technological change in which the business and research strategies of the beneficiaries require continuous re-adaptation, something which clashes with the rigidity of the regulations governing administrative processes and the management of calls for proposals. Control of research and innovation projects from a purely administrative point of view has led to the decertification of parts of project costs and placed some projects at risk. Some beneficiaries have ended up refusing the aid awarded.

Challenge for the 2021-2027 period

- To explore formulas that enable the Public Administration to recognise and manage the uncertainty inherent in research and innovation projects.
- To enable and facilitate exchanges of resources between different items in the same project.
- To enable unexpected modifications of projects.
- To reach agreement with the units involved on the criteria for evaluating projects.

3. Management units do not have the necessary resources to efficiently manage the justification procedures for projects adjudicated

Over the 2014-2020 period, reinforcement plans were approved to provide management units with additional human resources. These plans, however, are only temporary (three years, extendable to four) and provide for only basic personnel. As a result, there are many changes in the teams managing RIS3CAT calls. The lack of permanent, qualified technical personnel makes it much more difficult to manage calls.

Challenge for the 2021-2027 period

It is important to provide structures that manage RIS3CAT calls with the necessary human and technical resources from the very start of the period. These structures should be stable and sufficient and equipped with the multidisciplinary and complementary professional profiles necessary, as well as providing appropriate training for the correct, effective management.

4. Cash-flow tensions are generated when calls do not provide for payments on account

In the case of calls without payments on account, beneficiaries have to pay 100% of the investment in advance in order to later recoup up to 50% of the eligible expenditure. Moreover, due to the financial corrections explained in previous points, co-financing by ERDF is usually lower than that established in the call. The extension of deadlines has also forced companies and institutions to extend credit policies and bank commitments in order to complete projects. Although the Government of

Catalonia and provincial councils found ways to make advance payments to beneficiaries in the 2014-2020 period, these solutions could be included in more calls if efforts were made to simplify their management and reduce time periods for payment.

Challenge for the 2021-2027 period

To optimise processes of making advance payments. In some cases –such as territorial competitiveness and specialisation projects (hereafter, PECTs)– these payments on account should be made in cooperation with provincial councils. Reducing administrative payment terms should also help to reduce cash-flow tensions at beneficiary organisations.

5. Justifying expenditure in calls for proposals is highly complex

The terms of the calls often force beneficiaries to provide information and documentation justifying co-financed expenditure that is not essential from the regulatory standpoint. This significantly increases the administrative load and the time required to deliver justification. Often, these justification processes are not clearly described in prerequisite clauses, and this also greatly complicates procedures, as beneficiary organisations are forced to satisfy additional requirements, to the point where some projects may be audited several times (internally and externally), with the corresponding expenditure of resources.

Applying simplified cost procedures (mainly to indirect and labour costs) and lighter and more flexible procedures would enable more resources to be devoted to results and impact. The current possibilities of simplified cost options do not meet the needs of R&D&I projects. Formulas adapted to this type of project should be designed.

The complexity of justifying expenses and the regulations governing State aid are the main barriers faced by SMEs and small entities to accessing the resources of ERDF Operational Programme Catalonia 2014-2020 (hereafter, ERDF Catalonia). State aid regulations state that companies can co-finance a maximum of 30% of spending, making subsidies less attractive to companies. In some calls, the granting body applies prorations to increase the number of projects that can be financed with the available budget, with the result that subsidies granted to companies are limited to 20% of total investment.

Challenge for the 2021-2027 period

To simplify the terms of the calls, standardise procedures and introduce elements that allow greater flexibility and speed (such as simplified cost processes) while always adhering to the regulatory framework.

6. Due to bureaucratic and administrative problems arising from project management and justification procedures, some beneficiaries of projects at the implementation stage refuse the support awarded

Some beneficiaries (above all companies) decide to refuse the support awarded due to problems related to the management and justification procedures mentioned in previous points. In the case of collaborative projects, such as RIS3CAT or PECT, the fact that one of the beneficiaries in the consortium refuses or cannot correctly justify the award can compromise the technical and economic viability of the project as a whole, and seriously damage the other partners' interests. Mechanisms providing greater flexibility should be provided in order to prevent a cascade effect when one beneficiary is unable to fulfil initial commitments.

Challenge for the 2021-2027 period

To find more flexible procedures to promote and enable collaboration between players in the research and innovation system and prevent cascade effects from damaging the interests of other stakeholders.

2.2. Participation in calls for proposals

This section presents an analysis from the point of view of quadruple-helix agents who take part in competitive calls for projects within the framework of RIS3CAT instruments: companies, universities, research centres and technology centres, the public administration, and civil society.

2.2.1. Companies

Up to 31 December 2019, 11 calls for proposals corresponding to 8 instruments had been resolved. Participation by companies is concentrated in calls by RIS3CAT community instruments and technology clusters. Within the framework of these calls, a total of 415 companies participated, with total investment of 11.84 MEUR. The investment co-financed by ERDF Catalonia is 31.59 MEUR. At the time of drafting this report, many of these projects were at the implementation stage, and there is therefore no data available on how many projects have justified expenditure or the subsidies they finally received.

To managed the grants and adapt to the administrative timetables of the calls it is not easy for SMEs, particularly for smaller companies. In the case of calls for technology clusters and RIS3CAT communities, the time between the publication of the prerequisite clauses and the resolution and delivery of the grants has lengthened to between one and two years. The length of these terms practically excludes small SMEs from receiving this support. Accordingly, other options should be explored to ensure that the business fabric can benefit from these grants.

Companies are also key players in public procurement of innovation (hereafter referred to as PPI), although in this case companies are not direct beneficiary organisations but external providers of public contracts co-financed by ERDF Catalonia. This means that they are not directly affected by the problems described in the previous sections.

Although PPI focused mainly on health, road infrastructure and selective waste collection in the 2014-2020 period, this instrument can also be applied to social, environmental and safety fields, for example. PPI is a key instrument in technological policy used by many countries to create new services, encourage SMEs innovation and promote cooperation between the public administration, business and technology, and research centres to test and develop innovative solutions that can provide more effective responses to societal challenges and bring them to market.

Co-financing SME support services through ERDF Catalonia is another attractive option to enable small companies to benefit from European funding. In the 2014-2020 period, SME services provided by local authorities (within the framework of PECTs) and the Government of Catalonia (within the framework of the digital innovation hub) were funded in this way.

Challenges for the 2021-2027 period

- To explore the feasibility of more flexible calls that include simplified cost justification procedures.
- To promote PPI in order to encourage the business fabric, in cooperation with the public administration and technology and research centres, to develop new solutions aimed at resolving major societal challenges.
- To explore the possibilities of using the ERDF Catalonia to finance public administration services to SMEs (for example in the framework of digital innovation hubs).

2.2.2 Universities, research centres and technology centres

The universities have participated in the calls of RIS3CAT communities, PECTs, singular infrastructures and R&D&I cooperation projects, large scientific facilities, knowledge industry, valorisation and transfer of knowledge to universities, emerging technologies, R&D&I networks and internships at entities in the research and innovation system of Catalonia for innovators. Research centres have participated in all of these instruments except the specific call for valorisation and transfer of knowledge aimed at universities. Finally, technology centres have taken part in all instruments except the call for knowledge valorisation and transfer, R&D&I infrastructures and large scientific facilities.

The projects from which these players are beneficiaries have total investment of 165.07 MEUR and co-financing from ERDF of 68.54 MEUR. At the time of drafting this report, the projects were still at the implementation stage and, therefore, there is no data on expenditure justified and accepted.

The problems identified in the previous sections affect particularly universities and research centres, which are the main players in RIS3CAT. In the case of public entities, such as universities and research centres, the requirements of calls for proposals do not permit justification of costs for public servants, and these players are forced to co-finance projects adjudicated under the RIS3CAT framework from their own resources, which basically come from the indirect costs generated by other projects co-financed by European funds (such as the Horizon 2020 programme).

In the 2014-2020 period, both universities and research and technology centres were forced to establish strategic collaborations with other players in the research and innovation ecosystem (particularly companies and the public administration) in order to gain access to RIS3CAT calls for proposals. The purpose of this

collaboration was to mobilise knowledge, technology and resources to develop innovative solutions in response to the challenges facing companies and public administrations, in short, societal challenges. To this end, RIS3CAT communities encouraged collaboration with SMEs and large companies, while PECTs promoted collaboration with local entities. Meanwhile, the emerging technologies instrument enabled strategic alliances to be established between different universities and technology and research centres. There is evidence that RIS3CAT has generated new collaborative dynamics to address shared challenges that go far beyond co-financing by ERDF Catalonia. In the case of PECTs, new collaborative dynamics were generated between R&D&I system stakeholders and local authorities. However, it has been observed that cooperation and alliances are often aimed more at implementing projects than at proposing collaborative initiatives that can respond to societal challenges and generate shared value for all stakeholders. In order to promote strategic alliances that go beyond achieving the individual goals of each of the project beneficiaries and generate impact on the ecosystem and societal challenges, incentives should be modified and instruments sized appropriately.

Challenge for the 2021-2027 period

To promote formulas for RIS3CAT instruments that enable strategic cooperation between different players to develop more effective, innovative solutions in response to societal challenges.

2.2.3. Government

Government has an urgent need to accelerate innovation in focuses on and approaches to public policies and services. The public administration is required to respond to new challenges such as population ageing, climate change, persistent public health problems and social inequalities, and must do so in a context of limited public resources. As a regulator, service provider, employer and purchaser (public procurement accounts for 16% of total EU GDP), government is called on to play a prominent role in enabling and promoting innovation in cooperation with the other quadruple-helix players in order to fulfil its function of responding to societal challenges, which are becoming more and more complex.

The public administration is a key player in the innovation ecosystem within the framework of RIS3CAT. Indeed, government is the quadruple-helix player best placed to promote, driven by demand, new innovative solutions and new business models in response to them. The public administration is also responsible for satisfying the demands of citizens, who expect the public sector to play an active role in finding

innovative solutions to the challenges that currently face society and in guaranteeing quality public services and employment. The public administration therefore needs to change the way it cooperates with research and innovation players, companies and citizens. It should conduct in-depth review of the processes of designing, implementing and evaluating public policies. This review should be carried out through social innovation and in close cooperation with the other quadruple-helix players.

In the context of RIS3CAT, the government is actively involved, both as a beneficiary of PPI and PECTs and through projects which it implements directly.

PPI is a key instrument in achieving the following goals:

- To develop new forms of collaboration with companies, R&D&I system players and civil society, to reinvent and redesign public services and policies with the aim of providing more effective responses to societal challenges.
- Driven by demand, to promote the development of new business models that respond better to the needs of people and generate social and environmental as well as economic value (shared value).

The potential of this instrument is analysed in detail and through specific examples in Number 5 of the collection “RIS3CAT Monitoring”: [*The potential of public procurement of innovation to provide more effective responses to societal challenges*](#) (March 2019). We should point out that the main obstacle presented by PPI is often not the budget, but multiple forms of internal resistance to this change in the way the public administration purchases goods and services, since it involves a radical change to the traditional model of planning and managing such procurement.

Challenge for the 2021-2027 period

To promote PPI as a strategic instrument for reinventing public services, maximising the value of public money and providing more effective answers to societal challenges.

In the case of PECTs, local authorities are called on to play a leading role in identifying and delimiting complex challenges in their territories that require quadruple-helix players to articulate shared agendas. In both shared agendas and PPI processes, understanding, contextualising and delimiting the complex challenge for which solutions are promoted is key to articulating the cooperation of different stakeholders so that solutions can both be applied and have an impact beyond the life of the projects themselves. A pioneering example is the call launched by the Catalan Waste Agency for pilot projects in public procurement of innovation in the field of selective municipal waste collection.

RIS3CAT includes a line of action devoted to exploring and experimenting with new forms of collaboration that are more effective when working on complex challenges and studying the role the public administration should play. Here, awareness-raising and training players in the system to conduct responsible research and innovation, with and for society, are key measures. This issue is discussed in greater detail in issue Number 8 of the “RIS3CAT Monitoring” collection: [*Monitoring Report on the RIS3CAT 2015-2020 Action Plan*](#) (May 2019).

Challenge for the 2021-2027 period

To promote and strengthen the role of the public administration in RIS3CAT by articulating shared agendas for sustainability and social change that respond to the needs and challenges detected, involving all stakeholders from the beginning while also contributing to fulfilling both European strategies and the Sustainable Development Goals.

2.2.4. Civil society

Achieving the active participation of civil society in R&D&I processes is a major challenge in Catalonia and throughout Europe. Currently there is widespread agreement that R&D&I processes are not linear, but involve multiple dynamic interactions among different players, with many different input and output points, feedback loops and multidirectional information and knowledge flows. However, in R&D&I and RIS3, policies continue to focus, generally speaking—and this includes Catalonia—on competitiveness, without taking the concerns of society into account.

The European Commission proposes to resolve this situation by applying the conceptual framework of responsible research and innovation to RIS3. This involves the participation of quadruple-helix players throughout the R&D&I process (from kick-off to development and conclusion) to better align R&D&I processes and results with society's values, needs and expectations. Responsible research and innovation places great emphasis on the capacity for inclusion, anticipation, response and adaptation, as well as on transparency. In the 2014-2020 period, work focused on integrating responsible research and innovation in RIS3CAT within the framework of [*SeeRRI*](#), a European project whose aim is to integrate responsible research and innovation into RIS3 strategies, helping to create more responsible research and innovation ecosystems by promoting more inclusive and sustainable development models.

Within the framework of RIS3CAT, the concept of responsible research and innovation has been integrated into PECTs, and pilot projects are being launched to articulate

shared agendas for sustainability and social change. These agendas focus on identifying a systemic challenge and defining a shared vision as the starting point for gradually establishing a general framework for action. Under this framework, stakeholders in the territory share ideas and goals and join forces to achieve results and transform the system towards a more sustainable and inclusive model.

In this line of action, Transform, a second European project for responsible research and innovation, was launched in 2020. The aim of Transform is to design, test and disseminate methodological frameworks to integrate responsible research and innovation and increase citizen participation in RIS3 strategies.

3. RIS3CAT 2021-2027

The RIS3CAT 2021-2027 strategy is based on the framework established by European structural and investment funds regulations and the lessons learned from RIS3CAT 2014-2020. RIS3CAT is aligned with strategies promoted by the Government of Catalonia and, particularly, the *Pacte nacional per la indústria* and the *Pacte nacional per a la societat del coneixement*.

3.1. European Union framework

The new period for the European structural and investment funds focuses on the following five main objectives:

1. A smarter Europe through innovation, digitisation, economic transformation and support to small and medium-sized businesses
2. A greener, carbon free Europe, implementing the Paris Agreement and investing in energy transition, renewables and the fight against climate change
3. A more connected Europe, with strategic transport and digital networks
4. A more social Europe, delivering on the European Pillar of Social Rights and supporting quality employment, education, skills, social inclusion and equal access to healthcare
5. A Europe closer to citizens, supporting locally-led development strategies and sustainable urban development across the EU.

As regards RIS3CAT, it should be noted that 85% of ERDF Catalonia investment in the new period will concentrate on objectives 1 and 2, and that RIS3 is linked to Objective 1, which breaks down into the following three goals:

- To improve capacity for R&D&I and to assimilate advanced technologies.
- To benefit fully from the advantages of digitisation for citizens, companies and governments.
- To encourage the growth and competitiveness of SMEs.
- To develop capacity for smart specialisation, industrial transition and entrepreneurship.

In the 2021-2027 period, all European regions must adapt current RIS3 strategies to the new challenges and new performance framework established by European Union regulations, which require compliance with the following seven enabling conditions:

1. An up-to-date analysis must be made of bottlenecks with regard to disseminating innovation, including digitisation.
2. Existence of a mandated institution or body with power of decision to develop, coordinate, implement and monitor RIS3.
3. The competent authority for RIS3 has monitoring and evaluation tools to measure results and specialisation.
4. A procedure is in place to promote the entrepreneurial discovery process, and evidence is provided on the functioning of this process.
5. Actions necessary to improve the regional R&D&I system, based on prior analysis.
6. Actions provided to manage the industrial transition based on prior analysis that identifies sectors and territories affected by globalisation, technological change (Industry 4.0) and the transition to a low-carbon economy.
7. Measures are promoted to foster international collaboration by identifying opportunities for such collaboration with R&D&I stakeholders and companies in similar fields of specialisation.

3.2. Lessons learned from RIS3CAT 2014-2020

This section contains a summary of the main lessons learned from implementing RIS3CAT 2014-2020, as analysed in Section 2.

3.2.1. Focus on challenges

To maximise the impact of European funding, the priorities of sectoral areas and enabling technologies need to be redirected towards meeting both systemic challenges and the Sustainable Development Goals (hereinafter, SDGs). Within the framework of the RIS3CAT monitoring system, analysis has been made of the extent to which research and innovation projects financed by European funds contribute to meeting the SDGs. For more in-depth analysis, see the Report on the Contribution of European Funds to Thematic Specialisation and Achieving the Sustainable Development Goals.

Articulating shared agendas that address systemic challenges will help to improve the alignment between projects funded by various instruments and funds, enabling different stakeholders to join forces and benefit from opportunities and synergies that increase the impact of public spending.

3.2.2. Optimising management of calls for proposals

To maximise the impact of European funds on both the R&D&I and production systems, it is necessary to optimise management of RIS3CAT 2021-2027 calls in accordance with the following guidelines:

- Plan strategically for the entire 2021-2027 period and make a realistic estimate of the timetable for calls for proposals, projects, indicators and expected results.
- Provide management units with sufficient, stable, well-trained personnel.
- Apply alternative forms of financing rather than calls whenever possible
- Draw up common terms for the calls in order to reduce time required to approve calls.
- Simplify the terms of the calls in order to increase flexibility when implementing projects and reduce the administrative burden linked to project management and justification.
- Apply simplified cost justification procedures whenever possible.
- Simplify the structure and governance of collaborative projects and provide mechanisms so that if a beneficiary entity fails to fulfil its commitments this does not damage the interests of other partners in a collaborative project.
- Promote the establishment of strategic alliances and cooperation that goes beyond merely achieving project goals.

3.2.3. Promoting complementarities and synergies

It is necessary to design a range of coherent instruments promoting complementarity and maximising synergies and impact, generating new knowledge as well as economic, social and environmental value. It is also necessary to take the strategic decision regarding which public sector policies and actions are most appropriate for the RIS3CAT. This decision-taking process should take into account the lessons learned from the 2014-2020 period and the possibilities of complementarity with other funds managed by the Government of Catalonia, whether from its own budget or from other European funds. Similarly, it is necessary to explore the possibility of multi-fund financing schemes to articulate shared agendas.

It is also important to promote complementarities and synergies with projects financed by other European competitive programmes (particularly Horizon Europe and Interreg). Key here are European projects in which various stakeholders (government, academia, companies and civil society) from different territories cooperate to explore and test new solutions to major challenges aligned with the SDGs. These projects

provide spaces for experimentation and learning that generate new evidence to enable public administrations to rethink policies and practices. In this context, the RIS3CAT monitoring system includes a line of action that focuses on [European projects](#) that include partners from Catalonia that can generate relevant evidence and learning for both RIS3CAT and public policies. This learning is especially important for RIS3CAT 2021-2027.

The priorities of this line of action are:

- To explore models of participatory governance that encourage and enable collaboration among various stakeholders, both within a territory and between territories, with the aim of addressing systemic challenges more effectively.
- To explore formulas for applying responsible research and innovation to territorial development strategies and, particularly, RIS3, through shared agendas for sustainability and social change.
- To develop methodologies and pilot projects that enable public administrations to focus their work on challenges and missions, taking a systematic approach, in cooperation with the stakeholders involved through shared agendas.
- To explore strategies and formulas that enable public administrations to promote (through PPI, for example) the development of business models that can generate shared value.
- To strengthen synergies and complementarities between European projects financed by different funds and programmes with the aim of maximising their impact in Catalonia.

3.2.4. Strengthening the role of the public administration

In the 2014-2020 period, RIS3CAT was key in driving innovation in public policy and services in Catalonia. In the next period, it will be essential to continue to strengthen the role of the public administration as a driver of innovation through:

- The strategic use of PPI to reinvent public services in accordance with the challenges and needs of twenty-first-century society and the knowledge and technologies available. The ultimate goal should be that of maximising the value of public money devoted to satisfying the challenges and demands of society.
- Promoting responsible research and innovation, through the articulation of shared agendas to develop more effective responses to societal challenges in cooperation with all stakeholders.

3.2.5. Joining forces through shared agendas

According to the European Union, over the next period the participation of quadruple-helix players (government, research and innovation institutions, companies, and civil society) in research and innovation needs to be strengthened within the framework of a model for responsible research and innovation, that is to say, research and innovation that is conducted with and for society. It is essential to continue developing the conceptual framework of shared agendas for sustainability and social change through experimentation and cooperation among stakeholders in the territory.

3.3. 2020 Work Plan

3.3.1. Priorities

RIS3CAT 2014-2020 identified three vectors for the transformation of the Catalan economy: industrial tradition, green economy, and quality of life. These vectors continue to be valid in the new period, the proposal is to replace the first with “industrial transition”, adapting it to the European Commission’s new focus. As a result, RIS3CAT 2021-2027 will be based on the following three vectors: industrial transition, green economy, and quality of life.

Moreover, the RIS3CAT sectoral areas and technologies should be reviewed and, if appropriate, updated, taking into account the aim of prioritising systemic challenges linked to the three vectors of transformation and the SDGs.

3.3.2. Governance system

The government agreement establishing the Steering Committee and Technical Committee for the Strategy for the Smart Specialisation of Catalonia (RIS3CAT) requires updating. These bodies will be required to articulate the participation of the ministries involved in implementing the RIS3CAT Action Plan 2021-2027: Business and Knowledge; Agriculture, Livestock, Fisheries and Food; Health; Digital Policies and Public Administration; and Territory and Sustainability.

3.3.3. Monitoring system

It is also necessary to update the monitoring system applied to RIS3CAT 2015-2020, consisting of the following elements:

- The RIS3-MCAT Platform, which enables monitoring of R&D&I financed by European funds and their contribution to smart specialisation and the SDGs.
- A system of indicators of RIS3CAT instruments.

- Annual monitoring reports on the RIS3CAT Action Plan.
- Reports and studies on specific topics and instruments and on lessons learned and impact from RIS3CAT.

3.3.4. Prior analysis

A report must be drafted in 2020 that will serve as the basis for defining actions under the RIS3CAT Action Plan 2021-2027. To fulfil the enabling conditions, the report must contain the following points:

- Analysis of bottlenecks for innovation and digitalisation dissemination.
- Identification of sectors and territories affected by globalisation and technological change.
- Identification of opportunities for international cooperation.

This report will take into account the reports of the National Pact for Industry and the National Pact for the Knowledge Society, analyses that establish the framework for RIS3CAT in Catalonia.

3.3.5. Entrepreneurial discovery process

To fulfil the enabling conditions, the Catalan Government must accredit a procedure for promoting entrepreneurial discovery processes. This procedure will focus on the major challenges prioritised by RIS3CAT 2021-2027.

The proposal is to establish a specific programme to articulate the entrepreneurial discovery process for each of the challenges, with a technical office coordinated by Catalan Government or public sector units. This is aimed at promoting the collaboration of quadruple-helix players linked to the challenge to identify opportunities, define priorities, seek financing possibilities and join forces to build shared partnerships and agendas to respond to the challenges identified. The instruments and actions in the shared agendas will vary in type and may be financed by different funds and programmes.

Technical offices must have the capacity to work with all players related to the challenge. This means that they must have sufficient budget throughout the period to conduct studies, organise work sessions and conferences, define and manage the system of indicators, manage the website etc. The technical offices, which will report to the RIS3CAT Technical Committee and Steering Committee, will have specific functions within the RIS3CAT monitoring system.

3.3.6. Actions

Measures to be implemented under the RIS3CAT Action Plan 2021-2027 must be established taking into account both the lessons learned from RIS3CAT 2014-2020, analysed in this report, and the framework established by the European Commission based on the enabling conditions. The RIS3CAT instruments will promote responsible research and innovation projects aimed at responding to challenges and at generating value for society. These instruments will also promote a more sustainable and inclusive model of economic development by articulating shared agendas for sustainability and social change.