

PGI05786 – IMPROVE

Improving Structural Funds for better delivery of R&D&I policies

Regional State of the Art Report

Extremadura, Spain

May, 2020

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1. Introduction

The objective of this State-of-the-Art report is to clarify the current situation in terms of management and implementation of the policy instrument selected by FUNDECYT-PCTEX to be improved in the framework of the IMPROVE project. This is, **Objective 1 of the ERDF Operational Programme of Extremadura 2014-2020**.

Moreover, the report will set the basis for a fruitful Peer Review, regarding the three main topics addressed by the project:

- How are the operations designed and implemented (by whom, how they relate with the Managing Authority, etc.);
- How does the governance work (is it structured or not, who takes part and how, how is the coordination between other policies/instruments/funds); and
- How are those operations (and the instrument itself) being evaluated?

This way, the regional reports will help the partnership (and the regional stakeholders) to better work on the improvement of the selected policy instruments and guide the future activities thanks to the identification of the main challenges in each region.

2. Regional profile

Territory, population and key socio-economic facts and figures

The Region of Extremadura is an Autonomous Community located at the south-west of Spain. It is bordered by Portugal to the west, by Castile and Leon to the north; by the region of Andalusia to the south; and by Castile-La Mancha to the east. In particular, its proximity to cities such as Madrid, Seville and Lisbon constitutes a geostrategic advantage.

Extremadura covers a total area of 41,634 square kilometres, being the fifth largest region in Spain, with 8.1% of the total Spanish territory. It is also one of the **least densely populated** regions in the country (26 inhabitants per square kilometre), having 1,065,371 inhabitants.

This large region is divided in two provinces, the Province of Cáceres and the Province of Badajoz, and it has 388 small municipalities of which 91% have less than 5,000 inhabitants, and three major cities (Badajoz, Mérida and Cáceres) that concentrate around the 28% of the regional population.

In terms of natural resources, Extremadura has an **outstanding biodiversity**, with more than 30% of its territory under some sort of environmental protection, and one of the largest reservoir of fresh water in Spain. Two main rivers cut across Extremadura: Tagus (“Tajo”) and Guadiana, but the Region has two additional hydrographic basins (of the Guadalquivir and Douro rivers). There are three mountain ranges: “Sistema Central” in the north, “Montes de Toledo” in the centre, and “Sierra Morena” in the South. In this geographical and demographic context, the region has a clear the **rural imprint**.

In 2018 the **GDP per capita of Extremadura** has reached 23,294 euros, which was below the EU average in the same year (30,900 euros).

The main component of **the regional gross value added (GVA)** is the tertiary sector; accounting for 69.2% of the total, followed by the secondary sector responsible for 22.0% (of which construction constitutes 7.4%) and finally, the primary sector that represents 8.9%. Unlike the national trend, the primary sector holds a significant weight in the economy of Extremadura while services are slightly behind of the figures seen in the rest of the country (Eurostat, 2019).

The region also has many potentialities and the fact that two of the most important rivers in Spain (Tagus and Guadiana) cross the territory, making it very productive for agriculture. In consequence, the regional products have a high-quality and therefore, the activities related in any aspect to this sector enjoy greater importance than in other parts of Spain. Regional activities related to agriculture, livestock, forestry and fishing together generate 9.1% of regional GDP. Extremadura is one of the biggest producers of tobacco. Besides, the region has three types of crops: rainfed, irrigated and pasture (“dehesa”); with a great productive diversity in which cereal production, vegetables and fruit trees stand out. Industry is also influenced by the relevance of agriculture as the majority of activities performed are linked to it.

Accordingly, it can be concluded then that Extremadura's economy relies greatly on its natural resources. With regard to the service sector; the non-market services are to be highlighted as they account for almost 27.2% of the GVA.

Extremadura is characterised by its **limited industrialisation**, mainly related to agrofood activities, and its low competitiveness. This can be largely explained by the lack of an entrepreneur culture, insufficient private investment and the deficient cooperation between the public and private sector. The regional Government, Junta de Extremadura, aims to achieve this objective by promoting a closer cooperation between the academia and the productive tissue, attracting talent and favouring its specialisation in relevant areas for the region, and exploiting its potentialities as defined in the RIS3.

Thanks to its climate conditions, renewable energy makes Extremadura a **national leader in electricity production with solar technology**, especially thermo solar energy, being Extremadura the second producer region in Spain, and has a **biomass potential** of more than 6.8 million tons per year. The latest data (2018) indicate that renewable energy production has reached 24.8% of regional energy production. This figure means that the region is in 7th position among the Autonomous Communities in terms of clean energy production.

The dispersed and aging population has contributed to develop a very efficient network of health, education and administrative infrastructure. In fact, the social services in Extremadura are used as a model of good practise for regions showing similar characteristics. **Tourism** is also gaining prominence thanks to the **natural and historical heritage**, and the free software is among the key segments of the regional Information and Communication Technologies (ICT).

According to the National Statistics Institute (INE), the **employment rate during 2018** was 378.9 thousand people (1.96% of the national employment), with the Services sector standing out from the other sectors with 71.91% of the regional total, with the secondary sector (Industry including Construction) totalling 14.49%, while the primary sector accounted for 13.61%. However, unemployment is one of the biggest challenges faced by Extremadura. In 2019 the rate was 21.5%, being youth and women the most affected segments of the population. This figure is way above the national and EU average of 14.1% and 6.3%, respectively (Eurostat, 2019).

The SMEs in Extremadura

As for the regional business structure, similarly to the predominant model in Spain, **99.96%** of all regional enterprises are **SMEs** and 96.46% are micro enterprises, with less than 10 employees.

Of the 66,867 companies in 2018 in the Autonomous Community of Extremadura, 66,842 are **SMEs (0 to 249 employees)**, which represents 99.96% of the total companies in this Region. Of this total number of SMEs 96.54% are **micro-enterprises (0 to 9 employees)**, of which 56.25% are companies without employees. The number of **large companies** is well below the national average: 0.04% versus 0.13%.

Structure of SMEs in the region by size	
Total SMEs	66,842
Micro	96.59%
Small	2.96%
Medium	0.45%

Extremadura's SMEs, which represent the 2.0% of the total Spanish, are mostly registered under the legal status of natural person (61.95%). They are followed in numerical importance by companies that exercise their activity as a limited company, with 25% and those that do it under the denomination of common property, 5.85%.

DISTRIBUTION OF COMPANIES BY PRODUCTION SECTOR (January 2018)

	Micro 0-9	Small 10-49	Medium 50-249	SMEs 0-249	Large 250 or more	Total
Mining and quarrying	106	19	1	126	0	126
Manufacturing Industry	3.888	344	55	4.287	5	4.292
Electricity, gas and water supply, waste management	616	25	7	648	0	648
Construction	8.311	248	11	8.570	0	8.570
Trade; repair of motor vehicles, motorcycles	18.656	394	43	19.093	4	19.097
Hospitality	6.386	171	18	6.575	0	6.575
Transport and storage	3.352	111	9	3.472	0	3.472
Financial Intermediary	1.499	6	2	1.507	2	1.509
Information, communications and business services	11.362	245	30	11.637	9	11.646
Education	1.953	61	30	2.044	1	2.045
Health and social service activities	2.585	179	57	2.821	1	2.822
Other community services	5.854	173	35	6.062	3	6.065
Total	64.568	1.976	298	66.842	25	66.867

According to the latest figures published by the INE in 2019, 51.10% of **Extremadura companies** are active in the "**other services**" sector, 28.64% in **commerce**, 12.96% in **construction** and the remaining 7.15% in the **industry**. The biggest difference in relation to Spain can be found in the "other services" sector. In this section of the sectorial distribution, the figure of Extremadura Region is 7.98 points lower than the national average.

Research, Development and Innovation

Spain is a highly decentralised country. Its regions are responsible for Research, Development and Innovation (R&D&I) policies and are in charge of university funding. According to this, the Regional Government (“Junta de Extremadura”), through the General Secretary of Science, Technology, Innovation and University, is responsible for managing the **System of Science, Technology and Innovation of Extremadura (SECTI)**, which is articulated on the basis of the Extremadura Science of Law (Ley 10/2010), and for implementing policies and programmes to support research, development and innovation in the region. However, the implementation of these policies and programmes must be coherent with the Spanish Strategy for Science, Technology and Innovation 2013-2020 and accountable to the National Ministries with Economy and R&D&I responsibilities.

Among the General Secretary of Science, Technology, Innovation and University’s functions are: managing and coordinating R&D&I centres as well as technological or scientific parks; developing initiatives, promoting and managing funding programmes; planning, leading and coordinating R&D&I policies; boosting innovation and technology transfer to regional enterprises so that the cooperation among the scientific community and businesses improves; disseminating scientific and technological knowledge and promoting innovative and technology-based companies.

The SECTI is the framework in which regional R&D&I stakeholders operate and collaborate, integrating agents that generate knowledge (as the University of Extremadura and other research and technology centres), intermediary (mainly public) bodies and regional companies. For further detail, please see Annex I.

Concerning the regional performance in terms of Research, Development and Innovation, the Regional Innovation Scoreboard 2019 ranks Extremadura as a “**Moderate Innovator**” and shows that innovation performance has decreased over time in the region. In 2019 the Regional Innovation Index (RII) was 0.211 (normalised score), 66.0% relative to Spain and 43.4% relative to the EU. The RII change between 2011 and 2019 was -1.4 (normalised score).

According to the National Institute of Statistics, **Research & Development (R&D) expenditures** reached €122m in Extremadura in 2018. This constitutes 0.6% of the regional gross domestic product (GDP) and a contribution of 0.8% to the national expenditure. The public sector was the main funder by far: higher education provided 62% and public administration was second to it with 21%, resulting in 83% of the total R&D expenditures. The private sector secured the remaining 17% (INE, 2019). The distribution pattern of expenditures described differs quite a lot from the other regions, since higher education was by far the main source of funds while the private sector accounted for less than one third of the total. However; the lack and/or relative weakness of regional companies together with the macroeconomic problems in recent years, partly explain the causes behind this. As expected, in 2018 the R&D expenditures were below the national (1.24%) and EU (2.19%) average.

As for the **human capital in RDI**, according to the National Institute of Statistics, in 2018 there were 3,382 employees in this sector in Extremadura (considering both researchers and other personnel), of those, 60% work in higher education, which is aligned with the distribution of expenditures per sector and quite relevant since the only university in the region is the University of Extremadura. In 2018, the region concentrates only 2.3% of the national high-tech sector employment (5.4 thousands). In terms of percentage of total regional employment, the region is below both the national (3.6%) and the EU (4.1%) averages. The population aged 30-34 with **tertiary education** reached 35.8% in 2018, staying below the national and EU averages of 42.4% and 40.7 %, respectively (Eurostat, 2019).

Smart Specialisation in Extremadura

The Smart Specialisation Strategy of Extremadura 2014-2020 (RIS3 Extremadura) was developed during 2013, based on the methodological guidelines recommended by the European Commission and adapting them to the regional reality, in order to comply with the ex-ante condition established by Europe to access the Structural Funds in terms of RDI, and thus ensure a more efficient use of public funds, concentrating resources on a limited number of key sectors or priority areas for the region.

RIS3 Extremadura is a consensus document in which, on the basis of a participatory governance model, the intervention of all the key agents in the region, society as a whole and experts from inside and outside the region has been ensured, with the aim of guaranteeing the maximum participation of the different actors involved in the preparation, implementation and monitoring and evaluation of the Strategy.

The Strategy seeks to turn Extremadura into a space for innovation under two major priorities: the **sustainable management of natural resources** and the **application of technology to improve the quality of life**. Within this framework, the scientific and technological leadership of our region was promoted through those sectors that were considered to have high growth potential, directing their activities towards the five selected areas of specialisation: **agri-food, clean energies, tourism, health and ICT**; and applying **scientific and technological domains** of a transversal nature, derived from the resources and research capacities of the Extremadura System of Science, Technology and Innovation.

Figure 1. Smart Specialisation Pattern of Extremadura



Source: RIS3 Extremadura

The success of RIS3 Extremadura requires addressing and responding to four major challenges defined within the framework of the participatory governance process undertaken for the design of the strategy. These challenges are:

- **CHALLENGE 1:** To build a society predisposed to change, continuous improvement, creativity, knowledge, entrepreneurship and open to the outside.
- **CHALLENGE 2:** To consolidate a knowledge society based on people, and that is constituted as a pole of talent.
- **CHALLENGE 3:** To develop an internationalised and competitive business and industrial network, capable of generating wealth in a sustainable manner over time.
- **CHALLENGE 4:** To have a set of infrastructures adapted to the needs of the region, which vertebrates its development, and strategically connected to the exterior.

In order to guarantee the achievement of the expected results within the RIS3 Strategy itself, a clearly defined **Monitoring and Evaluation System** was established to transparently monitor, through a participatory governance process, the effectiveness of the actions developed and, if necessary, activate the adjustment mechanisms to keep these actions aligned with the desired results.

The RIS3 Strategy has a Management Team in charge of leading its technical execution process of the Strategy through the General Secretariat of Science, Technology, Innovation and University, ensuring the articulation of the Participatory Governance System. To this end, it has the support of a Technical Office (FUNDECYT-PCTEX), which is in charge of the management of its Monitoring and Evaluation System, to boost the governance and the coordination of the Strategy with other Plans and Programs.

3. The policy instrument

The **ERDF Regional Operational Programme (ROP) 2014-2020 of Extremadura**, Spain, lays the foundation for smart and sustainable growth in the region, in line with Extremadura's Smart Specialisation Strategy 2014-2020 (RIS3 Extremadura). The thematic priorities of the ROP aim to boost socioeconomic development in the region and to contribute to achieving the Europe 2020 targets for smart, sustainable and inclusive growth.

Within IMPROVE project, we will focus on the **Thematic Objective 1: Strengthening research, technological development and innovation**. More specifically, we will analyse the design, implementation, monitoring and evaluation process of **Investment Priority 1b: Promotion of business investment in R&D, development of links and synergies between enterprises, research and development centres and the higher education sector**.

3.1. Overall description of the policy instrument

Based on a multilevel governance approach that involved a great number of actors (see section 3.7 Governance), an in-depth SWOT analysis of the region was done allowing the proper selection of priorities, objectives and operations by the actors involved.

The diagnosis carried out reflects the need to adopt measures and define instruments to correct the main weaknesses and effectively exploit existing strengths. Priority is given to promoting the participation of the private sector in R&D&I activities, strengthening the public sector in this area, and linking research and development processes with the needs of the productive fabric.

The **Investment Priority 1b: Promotion of business investment in R&D, development of links and synergies between enterprises, research and development centres and the higher education sector** has several Specific Objectives that had been selected by Extremadura region. Those Specific Objectives and the expected results associated to them are as follows:

Specific Objective	<i>Fostering and promoting R&D activities led by companies, supporting the creation and consolidation of innovative companies and supporting innovative public procurement</i>
Expected results	Under this Specific Objective, different actions are planned to support companies, mainly SMEs, to try to boost the application of innovative business approaches, promoting the increase of their investment in this field. Through the actions programmed under this specific objective, it is intended to promote and develop the innovative culture within the

	<p>Extremadura business network, increasing the number of innovative companies in the region and contributing to increase the expenditure on business R&D.</p> <p>The aim is to increase the size, added value and competitiveness of the socio-economic fabric of Extremadura through actions that allow companies to incorporate and develop new technologies to innovate in their activity, as well as to promote the collaboration of companies with public or private R&D centres for the development of higher added value activities, with the ultimate aim of becoming more competitive in global markets.</p>
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Specific Objective	<i>Knowledge transfer and cooperation between companies and research centres</i>
Expected results	<p>Through this Specific Objective, it is planned to develop actions and instruments that will make it possible to identify business needs and facilitate the transfer of knowledge from research centres to the productive sector. The aim is then to promote the exchange of knowledge and technology transfer in the areas covered by RIS3 in Extremadura, giving a new focus to the existing collaboration formulas in the region to achieve an increase in inter-company relations and promote stable cooperation between the business sector and R&D&I agents, which will help to boost innovative activity in the region. In addition, the creation of a social environment favourable to innovation, entrepreneurship and internationalisation will be promoted. In this way, the final result expected is to increase the number of companies in Extremadura that carry out technological activities, as well as to considerably increase private spending on R&D in relation to the region's GDP.</p>

Specific Objective	<i>Promotion and generation of frontier knowledge and knowledge oriented to the challenges of society, development of emerging technologies</i>
Expected results	<p>Under this specific objective it is intended to carry out actions to support the strengthening of the Extremadura System of Science and Technology, in the provision of centres and in the strengthening of research groups. Through these actions, it is expected that the scientific leadership of the region and its institutions will increase, promoting the generation of new opportunities that may trigger the future development of highly competitive technological and business capacities. It will also allow for the improvement of the positioning and strengthening of the Research Centres in Extremadura. Quantitatively, the expected result arising from the actions of this Specific Objective will be shown through the increase in the number of patents that innovative companies in Extremadura develop annually.</p>

In this context, and within the framework of this Investment Priority, the ROP develop actions to increase, systematise and promote business activities in innovation as part of the competitive strategy of companies, financing innovation projects in products and/or processes executed by one or several companies, providing support for the creation of technology-based companies, and access to advanced strategic or technological consultancy services, as well as the incorporation of qualified personnel in SMEs and micro-SMEs to carry out R&D&I activities in companies. Likewise, activities are carried out to increase the participation of public and private research groups in the region in competitive calls of the European Union (Horizon 2020, COSME, etc.), providing advice in the identification of calls, search for partners and in the preparation of proposals and aid for the dissemination of scientific-technological results and the promotion of scientific culture in society. It also contemplates carrying out research projects focused on developing key areas that in the medium and long term will be fundamental in addressing business and society's needs. Finally, social innovation will be promoted through the creation of a technological platform for working and coordinating networks.

The following *types of operations* will be financed:

- Aimed at the recruitment and retention of talent in the business network of Extremadura.
- That promote the transfer of technology, innovation and cooperation networks in the business network.
- Oriented towards innovation.
- Investments in centres and resources for the promotion of innovation.
- To consolidate the most relevant research groups in Extremadura.

The operations will be aimed at strengthening the Regional System of Science, Technology and Innovation (SECTI) by following the strategic prioritisation criteria defined in the RIS3. The beneficiaries of the selected operations will be, as the case may be, public and private research groups, the business sector and the regional public administration. The above actions will be linked to the scientific-technological domains and areas of excellence of RIS3.

In line with the provisions of the Association Agreement signed with Spain, the co-financing of research projects will be limited to those that meet the following conditions:

- be included in the areas of specialisation of the regional RIS3;
- serve as a "stairway to excellence";
- develop competitive advantages and
- provide a proven positive socio-economic effect in the region.

The guiding principles to be applied for the selection of operations are:

- The project's contribution to the achievement of the change expected under the specific objective.

- Contribution of the project to RIS3 in Extremadura
- Quality of the project, including aspects of novelty and relevance to the objectives in relation to the state of knowledge, but also clarity, simplicity and conciseness with respect to the contents, development and expected results of the project;
- Generate potential opportunities for long-term innovation and competitive advantages that will lead to social and economic returns
- To serve as a "stairway to excellence"
- Measures to ensure the sustainability and capitalization of the project
- Compliance with the requirements for minimum guarantees on project implementation.
- Business impact, taking into account the applicability of the project results to the companies, the capacity to solve common problems and that the size or global nature of the action measured as affecting a significant number of companies.
- Collaboration with other knowledge generating agents, business, social and public administration to achieve the proper implementation of the project.

3.2. Design of the policy instrument

As it will be explained in more detail in section 3.7 Governance, the Managing Authority (MA) for all Spanish ERDF ROPs is the Sub Directorate-General of the ERDF management (National Government), who delegates or entrusts some key functions to their counterparts in the regional administrations. For the Extremadura ERDF ROP, the MA has delegated most of the tasks regarding selection and control of projects to the Intermediate Body (IB), which is the Secretariat General of Budget and Finance (SGPF) in the regional public administration of Extremadura.

The SGPF in Extremadura plays a key role in co-ordinating and overseeing the management of ERDF financing, teams, units or even individuals in the different regional departments/ministries (or "Consejerías") that are often responsible for designing, planning and implementing projects and initiatives.

For the ERDF ROP the Extremadura Council of European Funds 2014-2020 was set up. This interdepartmental body was responsible for the selection and quantification of thematic objectives and investment priorities. Moreover, a Structural Funds Technical Working Group made up of a representative from each regional department/ministry (or "Consejería") of the Regional Government of Extremadura was created in order to coordinate the work related to each programming period, being each representative responsible for the dynamisation and organisation of the work within their regional ministry ("Consejería").

In the case of the **Investment Priority 1b** and the operations included in it, the main actor involved in the Technical Working Group is the Regional Ministry of Economy, Science and Digital Agenda (former Regional Ministry of Employment, Business and Innovation), with competences on R&D&I at regional level.

Moreover, the design of the ERDF ROP 2014-2020, for the Thematic Objective 1, was made in coordination with the Smart Specialisation Strategy of Extremadura 2014-2020 (RIS3) as an ex-ante condition to access structural funds. The RIS3 of Extremadura was designed following the methodological requirements set by the European Commission. The Regional Plan for R&D&I was elaborated as the action plan of the RIS3 and is the main tool for executing ERDF funds for Thematic Objective 1 at regional level.

3.3. Policy mix ingredients

The activities financed through Investment Priority 1b of the ERDF ROP 2014-2020 of Extremadura are organised under different Specific objectives, depending on the expected results that are intended to achieve. Those activities become in concrete support to regional beneficiaries either through direct aid, funding, specialised support, etc.

Specific Objective 1.2.1. Fostering and promoting R&D activities led by companies, supporting the creation and consolidation of innovative companies and supporting innovative public procurement

- Actions to generate knowledge in agrifood and forest resources aimed at societal challenges
- Promoting research in ICT and supercomputing
- Plan for Innovation in SMEs
- Supporting Innovation in SMEs
- Actions to promote research projects in companies
- Actions to promote collaborative business research projects
- Start-up Extremadura Programme
- Actions to support the creation of technology-based and innovative companies
- Actions to promote technological and social innovation in health, quality of life and social services
- Innovation projects in large companies and SMEs

Specific Objective 1.2.2. Knowledge transfer and cooperation between companies and research centres

- Office for Innovation of Extremadura

- Actions to promote innovation and technology transfer to enterprises

Specific Objective 1.2.3. *Promotion and generation of frontier knowledge and knowledge oriented to the challenges of society, development of emerging technologies*

- R&D projects
- Actions to support the strengthening of the Extremadura System of Science and Technology both in the provision of centres and for the strengthening of research groups

For further details about these activities, their description and objectives, beneficiaries, type of funding and procedures of implementation/selection, please see Annex II.

3.4. Implementation methods

Broadly speaking, the implementation of the actions foreseen in Investment Priority 1b are carried out in two ways:

- Financing of intermediate bodies for the development of activities related to support for companies, promotion of technology transfer, coordination of SECTI agents, etc.
- Financing of companies or research centres through competitive calls for proposals for the development of R&D&I projects.

All these activities are carried out under the coordination of the General Secretariat for Science, Technology, Innovation and University of the Regional Government of Extremadura, which is responsible for R&D&I policies at the regional level.

In this sense, while the region has the RIS3 Extremadura as a strategic document that establishes how to concentrate its R&D&I resources in those economic sectors and knowledge areas that have competitive advantages over other regions, it is through the Regional Plan for Research, Technological Development and Innovation of Extremadura (PRI+D+i) that the public policies of promotion, management and execution of R&D&I actions of the Regional Government of Extremadura are executed. And these are, for the most part, financed through Thematic Objective 1 of the ERDF ROP 2014-2020 of Extremadura.

3.5. Budget

In the current programming period, Extremadura is the only less-developed region in Spain according to the Common Provision Regulation of the European Structural and Investment Funds (ESIF). As such,

the region receives a significant volume of resources in relation to its GDP through ESIF funding. Indeed, the public expenditure programmed for the ROP is over EUR 925 million, of which 80% - or just over EUR 740 million - is financed by European Regional Development Fund (ERDF). Funds are concentrated on a specific set of priorities and investments focused on the key drivers for competitiveness.

For the Thematic Objective 1, the total budget allocated was 136 MEUR. However, by the end of 2018 only 2.49% of the budget was executed.

3.6. Governance

In accordance with the European Commission's regulations on structural funds for the period 2014-2020, the programming, implementation, monitoring and evaluation of the ERDF ROP 2014-2020 of Extremadura follows a multilevel partnership and governance approach involving the following set of actors:

- Regional, local and urban authorities and other competent public authorities;
- Economic and social partners;
- Bodies representing civil society, including environmental partners, NGOs and bodies responsible for promoting gender equality and non-discrimination.

Programming phase

In the framework of ERDF programming for 2014-2020 the participation of the partners indicated above has been addressed as follows:

In the broader scope of ERDF programming, a series of meetings have been held with the other Spanish Autonomous Communities.

Also, many fund coordination meetings have been held, organised by the Directorate-General for Community Funds, in the National Government, and a number of meetings have been held with other ministries at national level.

In general, the whole programming process has been coordinated with the national ministry responsible for integrating the information sent by the other Spanish Autonomous Communities and with that prepared by the national ministries.

At regional level, the Extremadura Council of European Funds 2014-2020 has been set up as a specialised and interdepartmental body responsible for designing the strategy for implementing the above-mentioned Funds, particularly with regard to the selection and quantification of thematic

objectives and investment priorities. The Council is made up of the general secretaries of the different ministries (“Consejerías”), heads of directorates-general or bodies with an equivalent level in terms of regional financing, budgets, the environment, social policy, Community agricultural policy, employment, innovation and the management of the Women's Institute of Extremadura.

In particular, in Extremadura, during the programming phase, the coordination of the development of the documentation associated with the European Structural Funds has been carried out by the Intermediate Body, which is the Secretariat General of Budget and Finance (SGPF) in the Regional Government of Extremadura. Specifically, within the SGPF, the unit responsible for this coordination has been the Service for Community Funds (SCF).

Furthermore, as a central element in the development of this documentation, there has been a Structural Funds Technical Working Group made up of a representative from each regional department/ministry (or “Consejería”) of the Regional Government of Extremadura, which has competence in the area corresponding to the different thematic objectives addressed in the ERDF ROP 2014-2020 of Extremadura. One of the objectives of this Technical Working Group has been to coordinate the work related to each programming period, being each representative responsible for the dynamisation and organisation of the work within their regional ministry (“Consejería”).

In order to bring together the transversal vision of the different partners involved in the programming process, reports on specific issues have also been requested from different bodies responsible for the thematic areas addressed by the horizontal principles and transversal objectives.

From the beginning of the process the following actors have contributed to write and/or review the ERDF Operational Programme:

- the Women's Institute of Extremadura, as the regional authority for equality between women and men for programmes co-financed by the European Structural and Investment Funds (ESIF);
- the Extremadura Regional Business Confederation (CREEX), the trade unions UGT and CC.OO and the Federation of Municipalities of Extremadura (FEMPEX) representing economic and social agents;
- the Directorate-General for the Environment in the Regional Government;
- the Extremadura Technical Office for Accessibility (OTAEX) and the Extremadura Service for the Promotion of Autonomy and Care for Dependency in order to comply with the horizontal principle of non-discrimination.

Implementation, monitoring and evaluation phase

As far as implementation is concerned, the Managing Authority for all Spanish ERDF Operational Programmes is the Sub-directorate General of the ERDF management, which is part of the Directorate General of European Funds of the National Government.

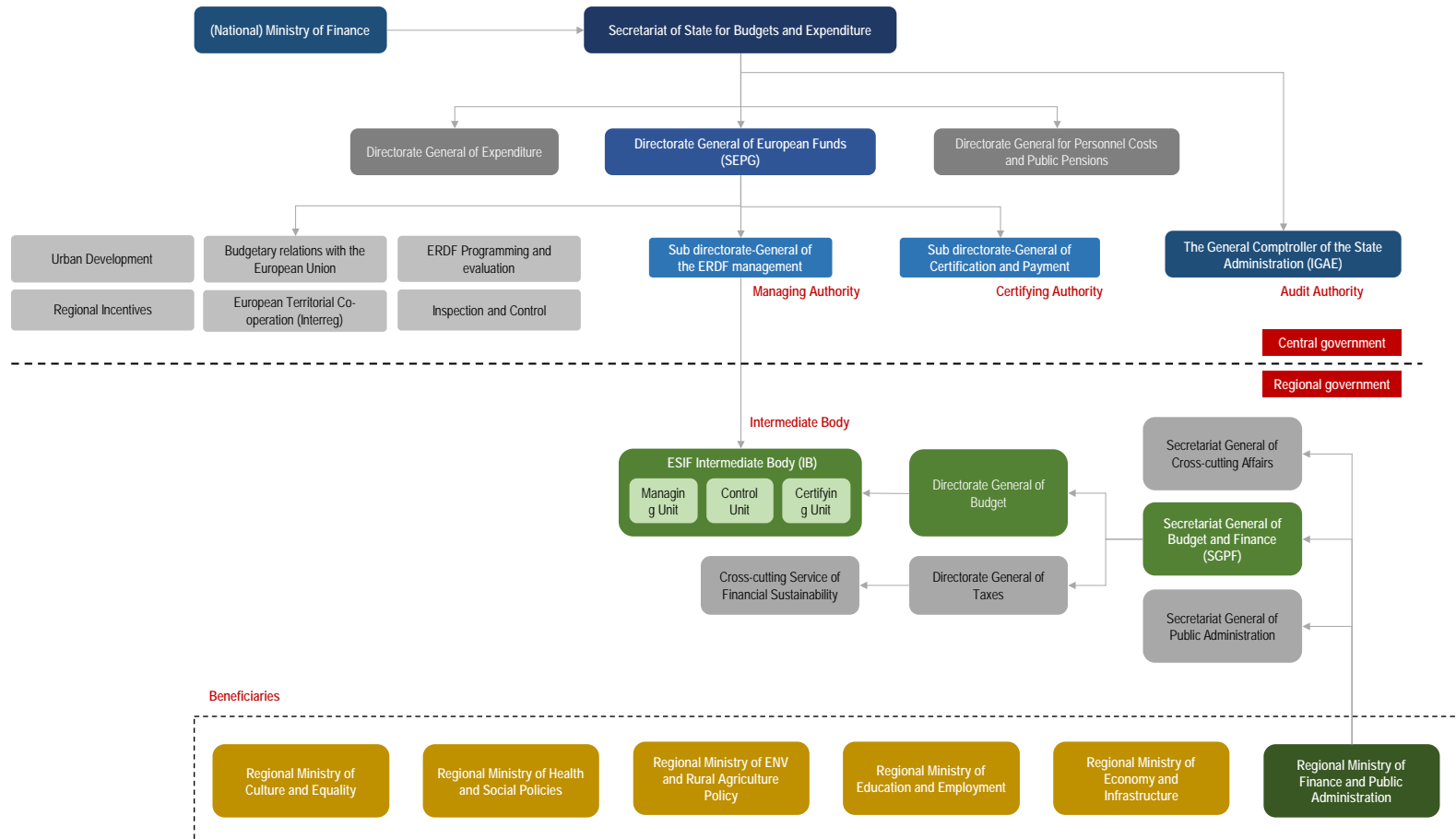
However, as is the case with all other Spanish Autonomous Communities, these national entities delegate some key functions to their counterparts in the regional administrations.

Therefore, the unit in the Regional Government responsible for the oversight and management of the ERDF ROP 2014-2020 of Extremadura is the aforementioned SCF, part of the SGPF.

The tasks for certifying, auditing and payment are carried out at national level, although some auditing responsibilities are carried out by the Regional Audit Body (the Comptroller General of Extremadura).

It is important to note that, while the SGPF in Extremadura plays a key role in coordinating and overseeing the management of ERDF financing, other teams, units or even individuals in the different regional departments/ministries (“Consejerías”) are often responsible for designing, planning and implementing projects and initiatives. Finally, a regional public enterprise – Gestión Pública de Extremadura (GPEX) – also provides technical assistance to the Regional Government on project execution.

Figure 2. The management system of the ERDF Operational Programme of Extremadura 2014-2020



Source: Pilot action on frontloading administrative capacity building to prepare for the post-2020 programming period. Roadmap and diagnosis for Extremadura, by the OECD

Meanwhile, in order to guarantee the partnership and multilevel governance approach during the implementation, monitoring and evaluation of the interventions programmed in the ERDF ROP 2014-2020 of Extremadura, there is a Monitoring Committee specifically created for this purpose. Broadly speaking, it is made up of representatives of the Managing Authority for all Spanish ERDF Operational Programmes, the Certifying and Auditing Authorities (which have also been designated at national level), the Intermediate Body, and other units of the Regional Government.

The functions of this Monitoring Committee are mainly to review the implementation of the Operational Programme and the progress in achieving its objectives; review any issue affecting the performance of the Programme; give an opinion, where appropriate, on any modification to the Programme proposed by the Managing Authority; make suggestions to the Managing Authority on the implementation and evaluation of the Programme.

Additionally, like all the Operational Programmes in Spain, the ERDF ROP 2014-2020 of Extremadura has an evaluation system with its own governance and coordination mechanisms which are articulated as described in the following section on monitoring, assessment and evaluation. This system is set up so that it includes both national and regional actors and bodies involved in the management and evaluation of the Operational Programmes and ensures the coordination between the Funds' Managing Authorities, the Autonomous Communities and the other Intermediate Bodies involved, in particular the Monitoring Committee mentioned above.

With regards to the involvement of bodies representing civil society, environmental partners, NGOs and bodies responsible for promoting gender equality and non-discrimination, in addition to their participation during the programming phase, a permanent participation of all these actors is foreseen throughout the 2014-2020 programming period, by means of the following mechanisms:

- participation in the Monitoring Committees of the Operational Programme;
- use of networks and thematic groups, both at national and European level;
- participation in the coordination groups of both national and Community funds

Concerning the horizontal principles and transversal objectives, as in the programming phase, different organisations can also be asked to draw up individual reports indicating, for each of these principles and objectives, recommendations for their implementation, mechanisms, procedures, necessary organisational structures, knowledge, resources, etc. that may be appropriate for better compliance with these principles and objectives.

Finally, bearing in mind that the IMPROVE project is specifically focused on the Investment Priority 1(b), under the Priority Axis 1 "Strengthening Research, Technological Development and Innovation", which finances different types of operations in clear connection with the Smart Specialisation Strategy of

Extremadura (RIS3), it is worth mentioning in this section on Governance that the Extremadura RIS3 has its own governance system, which is coordinated with that of the Operational Programme.

The Regional Government, through the General Secretariat of Science, Technology, Innovation and University (GSSTIU), has led the design and is currently leading the implementation of the RIS3 of Extremadura with the support of FUNDECYT-PCTEX, which since 2013 has been entitled as the RIS3 Technical Office in order to provide support for the design, implementation, monitoring and evaluation of the Strategy.

The RIS3 regional governance system is quite well established, with three levels of governance (strategic, coordination and management, and performance) and functions clearly defined. It has been set up to ensure the participation of key regional actors across the Quadruple Helix – government, industry, academia and society, including regional and non-regional experts- in an open, inclusive and collective bottom-up process for the design, implementation, monitoring and evaluation of Extremadura RIS3. In addition, a top-down validation structure for this participatory process is provided by two bodies: (1) the RIS3 Technical Committee, composed of Government officials from Extremadura involved in the planning and implementation of research and innovation policies and officials from the University of Extremadura; and (2) the Advisory Council for Science, Technology and Innovation of Extremadura, comprised of persons of recognised standing in science and technology, who also belong to prominent business organisations and trade unions.

During the programming phase, the GSSTIU and RIS3 Technical Office contributed to write and/or review the ERDF ROP 2014-2020 of Extremadura, particularly for the Priority Axis 1 and any action related to the smart specialisation strategy, to ensure the alignment between the Operational Programme and Extremadura RIS3.

With regards to the implementation, monitoring and evaluation activities, the already mentioned SCF and the RIS3 Technical Office keep a permanent dialog. Moreover, coordination between these two governance systems is ensured in the following way: on the one hand, the SCF is represented in the RIS3 Technical Committee, a core element of the RIS3 Governance system. In turn, members of the Extremadura RIS3 Technical office participate in the annual meetings of the Monitoring Committee of the ERDF ROP 2014-2020 of Extremadura.

3.7. Monitoring, assessment, evaluation

The regulation for the 2014-2020 European Structural and Investment Funds (ESIF) emphasises the importance of the evaluation of effectiveness and impacts and it requires from Managing Authorities and the Commission annual reporting on outputs and results, including findings of evaluations where

available. For this purpose, the Common Provisions Regulation (CPR) set out a number of evaluation activities to be carried out in relation to:

- The development of Evaluation Plans;
- The monitoring of the Programmes;
- The Association Agreement Strategic Progress Reports (for all four ESIFs);
- The evaluation of the programmes themselves;
- The functions of the Monitoring Committees of the Programmes in the field of evaluation.

Moreover, the CPR requires Managing Authorities to carry out evaluations to assess effectiveness, efficiency and impact for each Programme on the basis of an Evaluation Plan designed at the beginning of the programming period.

Considering this, the ERDF 2014-2020 Evaluation Plan of Spain consists of a part common to all ERDF Operational Programmes and an Evaluation Plan specific to the Operational Programme of each Spanish Autonomous Community.

Therefore, the ERDF ROP 2014-2020 of Extremadura, has a Specific Evaluation Plan which, together with the aforementioned Common Evaluation Plan, defines its evaluation system, objectives, governance and coordination mechanisms and the planning of evaluations to be carried out on the Operational Programme's interventions.

In terms of methodology, the Specific Evaluation Plan of the ERDF ROP 2014-2020 of Extremadura envisages particular evaluations for each priority axis and other evaluations planned at the global level of the Programme and established in the Common Evaluation Plan.

The evaluation methodology is based on the logical framework of the Programme itself, which consists of the following phases: SWOT analysis; identification of regional development needs/challenges; definition of intervention strategy; and expected changes.

An essential aspect of the evaluations is to analyse whether progress is being made towards the expected results and whether these results are eventually achieved. If not, the evaluation process should explain why the results are not being achieved and consider rethinking the strategy.

The specific evaluations planned for Investment Priority 1(b), on which the focus of the IMPROVE project is put, are those planned for Priority Axis 1 "Strengthening Research, Technological Development and Innovation", which are based on the regional needs and challenges identified in the relevant thematic areas and take into account, for each specific objective, the proposed intervention strategy and the expected change, as explained in section 3.1.

Given the connection between operations financed by Priority Axis 1 and the Smart Specialisation Strategy of Extremadura (RIS3), results of the monitoring and evaluation process of Extremadura RIS3 are appropriately transferred to the Operational Programme's evaluation system.

Extremadura RIS3 has its own monitoring and evaluation system, which includes the necessary activities for: evaluating the effects the implemented actions have on the RIS3 Strategy framework; determining their exact contribution on the outcomes observed; identifying the corrective actions to be taken in case of non-compliance or deviations in the planned milestones and outcomes.

The reports derived from monitoring the Strategy's implementation are reviewed annually, so that the appropriate adjustments that might be needed can be made in the shortest time possible.

Upon reaching the milestones in the intermediate stages of the evaluation by the European Commission (2016,2018) and the final goal (2020), a further evaluation will be carried out on the outcomes and the impact of the implementing the Strategy.

The Regional Government leads the evaluation of the Strategy and, where necessary, puts into action the recommendations for change and/or improvement that could arise from the different evaluations during implementation. To do so, it will receive support from bodies acting on different levels:

- The Commission of Science, Technology and Innovation of Extremadura
- RIS3 Technical Committee
- The Advisory Council for Science, Technology and Innovation of Extremadura

The RIS3 monitoring and evaluation system articulates a model of participation and co-responsibility that involves key agents of the region in the monitoring and evaluation process and is coordinated with the ERDF Operational Programme's evaluation system, mainly through the RIS3 Technical Committee, in which the SCF, the unit in the Regional Government responsible for the oversight and management of the ERDF ROP 2014-2020 of Extremadura, is represented.

As far as performance measurement is concerned, the ERDF ROP 2014-2020 of Extremadura has a set of indicators customised on the basis of the indicators established by EU Regulations and other indicators established by the Managing Authority to reflect the specificities of programming as implemented in Spain.

Meanwhile, the evaluation system set up for the ERDF ROP 2014-2020 of Extremadura has its own governance and coordination mechanisms which are articulated as described below:

Figure 3. Main actors and bodies involved in the evaluation of ERDF Operational Programmes



Source: Evaluation Plan for ERDF Operational Programmes. Common elements

The Coordination Unit is responsible for drawing up, implementing and monitoring the specific evaluation plan for the ERDF ROP 2014-2020 of Extremadura, as well as for reviewing it and, if necessary, proposing modifications to the Monitoring Committee mentioned above. This Coordination Unit is attached to the Directorate-General for Community Funds in the National Government.

The Managing Authority, as responsible for the management of the Operational Programmes, has the following functions with regard to their evaluation:

- To propose to the Monitoring Committees the Specific Evaluation Plan of each Operational Programme for its approval, as well as any modifications that may be relevant during its implementation;
- To ensure that scheduled evaluations are carried out;
- To establish a system for recording and storage of operations data;
- To set out in implementation reports the conclusions of evaluations, the progress of programme implementation, the evolution of indicators and the contribution of funds to changes in such indicators.

Besides, the Managing Authority, together with the Intermediate Body, plays a key role in the development of the evaluations, providing quantitative and qualitative information that the evaluators may require.

In the case of Extremadura, the Intermediate Body is the SGPF, as previously indicated, and has the collaboration of the operations management bodies, which are different regional departments/ministries (“Consejerías”) of the Regional Government of Extremadura participating in the ERDF Operational Programme.

Evaluations must be carried out either by evaluators who are independent of the Managing Authority and the Intermediate Bodies responsible for implementing the Operational Programmes, whether internal or external.

The Institute for Fiscal Studies, a body attached to the National Government, collaborates with the Managing Authority and the Coordination Unit in the preparation and implementation of the evaluations in its field of expertise, as well as in the analysis and methodological development and in training actions.

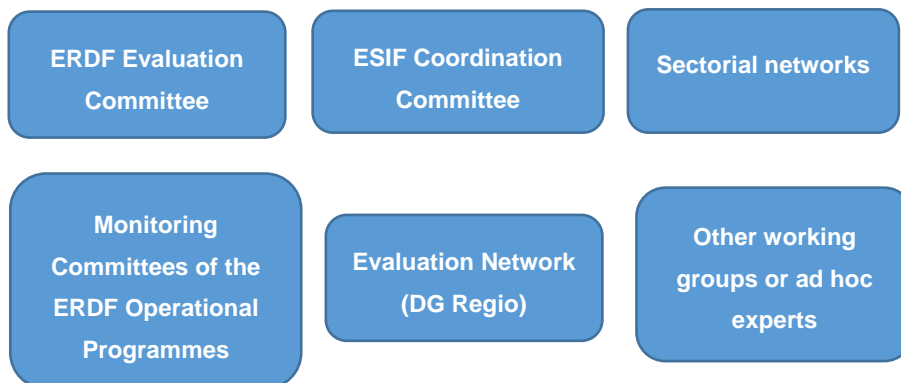
In accordance with the principle of partnership, the entities that have been consulted and participated in the programming activities, will also be associated with evaluation actions, in particular through the dissemination and discussion of evaluation findings and recommendations.

As for the coordination mechanisms, their purpose is to:

- promote coordination between the Funds' Managing Authorities, the Autonomous Communities and the other Intermediate Bodies involved in the management and evaluation of the Operational Programmes;
- improve evaluation capacities and methodologies;
- share the results and disseminating the recommendations of evaluations;
- explore possible synergies between different Authorities or Intermediate Bodies.

The coordination mechanisms are the following:

Figure 4. Main actors and bodies involved in the evaluation of ERDF Operational Programmes



Source: Evaluation Plan for ERDF Operational Programmes. Common elements

- The ERDF Evaluation Committee includes representatives of the Coordination Unit, the intermediate bodies of the multi-regional OPs, the Autonomous Communities and the SG of Management of the ERDF, among others. Its main functions are to coordinate the evaluation activity, to serve as a common platform for the exchange of experiences and methodologies and to disseminate the results of the evaluations
- The ESIF Coordination Committee is the coordinating body for policies supported by the ESIFs, as well as for these policies with other EU policies and instruments.
- The Sectorial Networks are one of the main mechanisms for coordinating the different instruments and policies linked to Cohesion Policy. They are the following: R&D&I Policy Network, Urban Initiatives Network, Environmental Authorities Network, Equality Policies Network and Social Inclusion Network.
- The Monitoring Committees of the ERDF Operational Programmes, whose main function is to supervise the implementation of such programmes, also have important functions in relation to their evaluation.
- The Evaluation Network (DG Regio) is a forum for discussion between the European Commission and the Member States on matters relating to the evaluation of Cohesion Policy, which promotes the exchange of experiences and good practices.
- Other working groups or ad hoc expert groups may also be set up.

In addition to all these, two other mechanisms mentioned in the section on Governance ensure coordination between the Funds:

- the Extremadura Council of European Funds 2014-2020 which, as far as monitoring and evaluation are concerned, is responsible for monitoring the implementation of the Operational Programme and the achievement of its objectives on the basis of financial data and common and specific Programme indicators, through the reports submitted to it by the competent bodies.
- the Structural Funds Technical Working Group, which, once the 2014-2020 programming work is completed, remains active with the aim of being the body responsible for coordinating the various funds of the Common Strategic Framework. Concerning monitoring and evaluation it is responsible for: a) ensuring that the interventions of the Funds are consistent with the activities, policies and priorities of the European Union and complementary to other financial instruments; (b) supervising the monitoring of the operational programmes; (c) establishing and monitoring the criteria for the delimitation between operations; (d) monitoring the financial controls carried out by the various control bodies, e) coordinating and ensuring compliance with the information and publicity actions of the operations.

4. SWOT analysis of the policy instrument

A SWOT analysis has been done in order to identify the main strengths, weaknesses, opportunities and threats that characterise the Policy Instrument in the region.

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> - A professional labour force in the Regional Administration. - Clearly delineated institutional structures and responsibilities between actors across government. - A series of quality sectoral and regional strategies (including RIS3) that align expectations and attempt to embed some consistency and sustainability into ROP policies and actions. - The present relationships between national and regional institutions are positive and conducive to continued improvements to practices and procedures. - The sectoral and subject-matter expertise concerning projects across the public administration are strong and willing to keep learning around the management of ERDF. - The regional public administration enjoys a well-regarded reputation and is considered a competitive employer, attracting many applicants. - The regional Audit findings have not identified any major or systemic issues concerning the management of ERDF. 	<ul style="list-style-type: none"> - Hiring freezes have hindered the recruitment of new qualified staff. - Business ecosystem characteristics have important implications for ensuring a high level of ongoing engagement and support to beneficiaries who require support in the project planning, applying for funds, and in the implementation of ERDF-financed projects. - Lack of a regionally-adapted approach to SME-project selection and implementation processes that limits OP implementation possibilities. - The EU, national and regional regulatory frameworks cause difficulties in terms of lack of clarity and rigidity. - Lack of formalised HRM and learning and development policies in the “Consejerías” concerning staff working on ERDF financed projects. - Slow and rigid HRM system for the regional civil service which does not always adapt to the necessities of the management and implementation of the ROP. - Career-based system in the regional public administration can translate into lengthy recruitment times. - Difficulties in certifying expenses and delays in verification processes. - ROP management system not built for agility, which can cause delays in the use of funds in response to changes in the ROP’s programming. - Weak performance measurement and ROP evaluation practices limit the ability to build adjust programming and build evidence bases for the future. - The lack of a regional development strategy makes it challenging to anchor ROP and sector strategies and programming in regional priorities and realities.

OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> - Next Programming period 2021-2027. Design and implement a single and unique regional development strategy for Extremadura for the 2021-2027 period that establishes a long-term vision for the territory, objectives and priorities for development; developed through a consultative process, establish measurable goals and communicate these to the public; use the strategy to anchor sector policy in Extremadura as well as future OP design and ESIF investment priorities. - Extremadura is the only less-developed region in Spain and as such the region receives a significant volume of resources in relation to its GDP through ESIF funding. - The possibility of bringing in temporary expertise as needed from other public institutions (i.e. universities, public enterprises, or even central government) for specific, project-based work. 	<ul style="list-style-type: none"> - Austerity measures and budgetary limits affect the flexibility by which “Consejerías” and project managers can programme and plan their initiatives - The priorities of the ROP itself can also be subject to uncertainty if political priorities frequently change. - Difficulty ensuring that policy priorities and programming transcend election cycles. There are also implications for personnel management, since a change in party has entailed changes in senior management and organisational restructuring that affects the work of the IB and “Consejerías” considerably. - Constant changes of criteria in ERDF that lead to extra workload for the Intermediate Body and for the Management Bodies. - Constraints of the legal framework at different levels (Public Procurement Law, state aids, etc.) - An aggregated system at the national level for establishing strategy, objectives, and indicators for ESIF (including ERDF) makes it difficult to adapt ROP programming to Extremadura’s regional profile. - Complexity and uncertainty in national practices and frameworks can affect OP implementation: <ul style="list-style-type: none"> o High levels of uncertainty in the audit process and an excessive number of audits can limit the attractiveness of the OP and discourage innovation. o Limited flexibility in budgeting processes constrain effective ROP implementation. o ESIF/ERDF management processes can result in programming delays.

5. Main conclusions and areas of improvement

From the analysis done, a number of key areas of improvement have been identified to further explore in the framework of IMPROVE project.

With regards to the lack of formalised HRM and learning and development policies in the “Consejerías” concerning staff working on ERDF financed projects, it seems to be necessary to work on the formalisation and professionalisation of personnel in the ERDF management function.

Moreover, considering that Extremadura has a slow and rigid HRM system for the regional civil service which does not always adapt to the necessities of the management and implementation of the ROP, it is mandatory to work towards more strategic and agile HRM procedures in regional government.

In relation to the design and implementation of the ROP, there is a clear difficulty to adapt the Regional Operational Programme programming to Extremadura's regional profile, possibly because of the lack of a long-term regional development strategy for Extremadura. In addition to this, the ROP implementation processes are unaligned with regional specificities/beneficiary capacities. Therefore, the region should address this challenge by ensuring that the OP implementation aligns with regional/beneficiary needs and capacities adapting the project selection process to regional specificities.

Monitoring and evaluation of the Policy Instrument is another area of improvement to consider. A weak performance measurement culture limits the evidence bases to support strategic planning, priority setting and programming for the OP. Therefore, a more robust approach to ROP evaluation could help inform any necessary adjustments.

Framework conditions are another issue that might affect the IB's capacity to more effectively manage and administer funds, increasing the risk of losing funds if there are system delays, and the latter has caused delays implementing the 2014-2020 programme. Moreover, high levels of uncertainty in the audit process can limit the attractiveness of the OP, budgeting processes constrain effective ROP implementation, and National ESIF management processes can affect the timely use of funds. Therefore, it seems to be of utmost importance to introduce greater certainty into the ESIF/ERDF audit process and limit the impact of national processes on the timely use of EU Funds.

Finally, and in terms of governance, co-ordination and communication between actors – especially with beneficiaries and those in “Consejerías” – could be improved with a view to ensure a user-driven focus in the design and implementation of ROP programmes and instruments, as well as to maximise the support provided on the ground to project managers. Strengthening information flows and knowledge sharing could also help generate a greater sense of ownership and common understanding.

Annex I

Main actors of the Science, Technology and Innovation System of Extremadura (SECTI)

As stated before, the SECTI is the framework in which regional R&D&I stakeholders operate and collaborate, integrating agents that generate knowledge (as the University of Extremadura and other research and technology centres), intermediary (mainly public) bodies and regional companies. Those actors are divided in the following types and organizations:

1. University
2. Public Research Institutes and private Technology Centres
3. Foundations and other organisations for promotion, knowledge transfer and intermediation
4. Public companies managing R&D&I.
5. Technology business *incubators*
6. Clusters and Associations of companies

1. University of Extremadura

Created in 1973, the University of Extremadura (UEX) is the main public university in the region with campus in Cáceres, Badajoz, Mérida and Plasencia. It has more than 24.000 students in grades and other 8.000 in doctorates, courses or continuous training. There are 1.500 teachers and 800 staff (administration, technicians and services). Currently the University of Extremadura offers 64 Bachelor's Degrees and 32 Master's Degrees in many different fields of knowledge.

2. Public Research Institutes and private Technology Centres

Centre for Scientific and Technological Research of Extremadura (CICYTEX)

The Centre for Scientific and Technological Research of Extremadura (CICYTEX) is a public institution that aims to support the incorporation of R&D&I in the business sector of Extremadura. It is integrated by several regional research centres and was created with the purpose to unify all scientific resources in a more efficient, coherent and unique entity. Thus, it was expected to improve the coordination of the research work in the fields of agriculture, livestock, agro food and dehesa (meadows).

Centre for Advanced Technologies Extremadura (CETA-CIEMAT)

The CETA-CIEMAT is a centre devoted to research, IT and communications service development for the benefit of science, industry and society. The CETA-CIEMAT core is a computer centre based on GRID. It is part of the European network GRID (EGEE network) and promoter of the Latin American network of GRID centres (particularly EELA project).

Jesus Usón Minimally Invasive Surgery Centre (CCMI-JU)

Jesus Usón Minimally Invasive Surgery Centre is a multidisciplinary institution devoted to research and innovation in health sciences. CCMI-JU has large experience in research and covers several fields of expertise: Laparoscopy, Endoscopy, Microsurgery, Endoluminal Therapy and Diagnosis, Anaesthesiology, Pharmacology, Bioengineering and Medical Devices, Stem Cell Therapy and Assisted Reproduction.

Extremadura Agricultural and Food Technological Centre (CTAEX)

CTAEX is a research association created in January 2001, a private centre for innovation and agricultural and food technology. CTAEX is a pioneer in the field of agricultural and food innovation and research in Spain, and assembles in the same installations an experimental farm, agricultural laboratories, a pilot plant, an experimental kitchen, sensorial evaluation, and an engineering department.

Technological Institute of Ornamental Rocks and Building Materials (INTROMAC)

INTROMAC is a research institute created as a public consortium under the approval and participation of the Regional Government (Junta de Extremadura), which aims to improve the competitiveness of companies in the Construction - building and civil works - and Natural Stones sectors through R&D&I technical advice, testing and scientific-technical training and dissemination, as well as collaboration at national and international level with other centres, institutions and companies.

Extremadura Trade Fair Institution (FEVAL)

The Extremadura Trade Fair Institution and its Technology Centre have these objectives: to be a Centre of Business Excellence that carries out actions and activities to support the business sector and to facilitate digital and technological solutions that make companies more competitive.

Extremadura Supercomputing, Technological Innovation and Research Centre (CENITS)

Cénits is the Extremadura Supercomputing, Technological Innovation and Research Centre aimed to promote and provide HPC services and advanced communications to the research communities of Extremadura, or those companies or institutions that request it and thus contribute through technological improvement and innovation, improving the competitiveness of researchers and enterprises.

Archaeology Institute of Merida (IAM)

The Archaeology Institute of Merida (IAM) is a joint institute of the Spanish National Research Council (CSIC) is the largest public institution in Spain dedicated to research and one of the most renowned of the European Research Area (ERA) and the Regional Government (Junta de Extremadura). It is aimed to promote and develop archaeology research on results derived from the recovery of the archaeological heritage of Extremadura.

3. Foundations and other organisations for promotion, knowledge transfer and intermediation

Foundation FUNDECYT Science and Technology Park of Extremadura (FUNDECYT-PCTEx)

FUNDECYT-PCTEx is a non-profit organisation based in Extremadura with the aim of contributing to the social and economic exploitation of science and technology in the region, supporting and promoting scientific and technological development and a better use of research and innovation outcomes.

The main objective is being the backbone of the System of Science, Technology and Innovation of Extremadura (SECTI) through the contribution of an operational framework for the industrial stakeholders in the research and development (R&D) regional system, and offering services to support innovation, entrepreneurship and cooperation, as well as aiming the promotion of smart, sustainable and inclusive development in the region.

FUNDECYT-PCTEx supports the interaction between the scientific community and companies, facilitating the transfer of knowledge and technology, promoting the creation of new innovative companies, developing an innovation-oriented society and knowledge management, while fostering the mutual enhancement of companies and researchers. Currently, FUNDECYT-PCTEx is in charge of managing the RIS3 in Extremadura.

Computing and Advanced Technologies Foundation of Extremadura (COMPUTAEX)

COMPUTAEX is non-profit foundation belonging to Regional Government (Junta de Extremadura). The Foundation's aim is to promote the development of information technologies, the use of intensive computing and advanced communications as tools for sustainable socioeconomic development, encouraging the participation of civil society mobilising their resources and paying special attention to co-operation between public and private research centres and the productive sector.

Foundation for Research and Training of Health Professionals of Extremadura (FUNDESALUD)

FUNDESALUD is a foundation of the Public Health System Extremadura non-profit and for general interest attached to the Ministry of Health and Social Policy of the Regional Government (Junta de

Extremadura) for the promotion of R&D&I in the field of health, and the promotion of scientific and medical advances, through the dissemination of results by appropriate means, and transfer of knowledge and results between agents in the environment of R&D&I in health.

4. Public companies managing R&D&I: Extremadura AVANTE

Extremadura AVANTE is a public company of the Regional Government (Junta de Extremadura) whose objective is to provide services and financial aid to Extremadura companies, in the different phases of their development, so that they can be more competitive, boosting the industrial and business development of the region. It offers different services such as information, consulting and training, and also different financial tools addressed specifically to the internationalisation process in the SMEs. Some of these are coordinated with the instruments from the Chambers of Commerce, so that they are complementary.

5. Technology business *incubators*

High Technology Incubator in Bioeconomy and Circular Economy

The High Technology Incubator of Extremadura, specialized in Bioeconomy and Circular Economy, has been conceived to promote and attract technology-based business projects aimed at obtaining new products/processes of high added value through purification techniques and biotechnological processes, from the natural resources of the region and from the by-products and residues of the agro-food industry.

The project is developed by a consortium formed by the Science and Technology Research Centre of Extremadura (CICYTEX), as promoter of the infrastructure and provider of scientific-technological services to the incubated companies, together with FUNDECYT-PCTEX and Extremadura AVANTE, as providers of advanced support services to the incubated companies.

Bioincubator City of Health

The Bioincubator City of Health is a project aimed at promoting the modernization of the productive fabric through the promotion of innovative projects and the consolidation of technology-based companies in the region in the field of life sciences and health, within the strategic framework of commitment to the location and specialization of the Extremadura Health City. It is an initiative of Extremadura AVANTE and the Ministry of Economy, Science and Digital Agenda, through the General Secretary for Science, Technology, Innovation and University.

6. Clusters and associations of companies

Regional Business Confederation in Extremadura (CREEX)

CREEX was established in 1985 to create a common representation instrument for the business network in the region. Nowadays over one hundred Business Associations participate in the Confederation through one of its three member organisations: COEBA in Badajoz and FEP and FEC in Cáceres.

Chambers of Commerce

The Chambers of Commerce were created in 1886 for the representation, promotion and protection of the general interest of commerce and industry. They have a Department for Internationalisation and Abroad Markets and specialized sections also for Visa and Certifications and for International Consultancy. Extremadura has two Chambers in Badajoz and Caceres.

Clusters of Extremadura.

Extremadura Region are 8 clusters that represent to the different sectors, are: Wood and Furniture Cluster, Cork Cluster, Energy Cluster, Social and Healthcare Cluster, Knowledge Cluster, Tourism Cluster, Construction Cluster and Food Craftwork Cluster.

Annex II

Activities under Investment Priority 1b

Specific Objective 1.2.1. *Fostering and promoting R&D activities led by companies, supporting the creation and consolidation of innovative companies and supporting innovative public procurement*

Activity:	Actions to generate knowledge in agrifood and forest resources aimed at societal challenges		
Brief description			
<p>The actions are developed by the centres of the Extremadura System of Science, Technology and Innovation in coherence with the RIS3 of Extremadura and will consist of:</p> <ul style="list-style-type: none"> - Research projects aimed at strategic areas (challenges), pre-competitive and emerging groups; R&D&I projects aimed at supporting strategic areas of the regional economy and to promote the development of areas of special interest or to carry out actions of greater importance, uniqueness or excellence. - Complementary actions of dynamization for the preparation of proposals that, having been positively evaluated by European Research Organizations, have not finally obtained the financing by that organization. - Activities aimed at increasing the participation of researchers in the EU framework programmes, as well as support for the preparation of proposals, for the endorsement of ongoing proposals and for the dissemination of scientific results. - Researchers' placements in Centres of Excellence. 			
Objectives			
<ul style="list-style-type: none"> - To promote and develop the innovative culture within the Extremadura business network, increasing the number of innovative companies in the region and contributing to increasing business R&D expenditure. - To increase the size, added value and competitiveness of the socio-economic fabric through actions that allow companies to incorporate and develop new technologies to innovate in their activity. - To promote the collaboration of companies with public or private R&D centres for the development of activities with greater added value, with the ultimate aim of becoming more competitive in global markets. 			
Beneficiaries:	Regional Administration	Type of financing:	Non-reimbursable grant
Procedures:	Selection of operations on the basis of expressions of interest from potential beneficiaries		

Activity:	Promoting research in ICT and supercomputing		
Brief description			
<p>The scope of this action is developed in coherence with Extremadura's RIS3, Challenge 4, Strategic Line 2, and Program 2.1 of Incentive of the Private Investment.</p> <p>Research projects in ICT and supercomputing developed in technology centres will be promoted to provide high added value services to the scientific-business community.</p>			
Objectives			
<ul style="list-style-type: none"> - To promote and develop the innovative culture within the Extremadura business network, increasing the number of innovative companies in the region and contributing to an increase in business R&D expenditure - Increase spending on business R&D. - To have an integrated, modern and efficient network of scientific and technological infrastructures, capable of attracting private capital for its sustainability over time, with centres capable of competing together in strategic projects. 			
Beneficiaries:	Regional Administration	Type of financing:	Non-reimbursable grant
Procedures:	Selection of operations on the basis of expressions of interest from potential beneficiaries		

Activity:	Plan for Innovation in SMEs		
Brief description			
<p>This activity is oriented towards the Business Service of R&D&I Financing, and will be carried out:</p> <ul style="list-style-type: none"> - Actions of advice and information on financing, resources available in intermediate and advanced phases of the process, as well as other incentives to carry out R&D&I projects, in order to increase the participation of Extremadura companies in the competition of regional, national and European calls. - Actions for the assessment and technical evaluations of projects applying for access to financing, risk capital and loans under the State Innovation Strategy (E2i). - Dynamisation and management actions aimed at promoting financial instruments, participation, co-financing and financial complementarity in R&D&I projects. - Actions for the development and implementation of facilitating tools for the Regional Model of Innovation, in order to collect content of interest in terms of funding for R&D and business projects in Extremadura. <p>This action is framed within the Strategic Lines and Programmes included in Challenge 3 of RIS3 Extremadura: To develop an internationalised and competitive business and industrial fabric, capable of generating wealth in a sustainable manner over time.</p>			
Objectives			
<ul style="list-style-type: none"> - To revitalise the business fabric of Extremadura by resizing its companies at national and international level. - To increase the productivity and competitiveness of companies in Extremadura. 			

<ul style="list-style-type: none"> - Favouring strategic and stable links. - To promote the technological development of products, processes and services based on R&D&I. - To favour the acquisition of technology to increase the competitiveness of the business network. - To support new business opportunities with a high R&D&I content. - To promote the creation of a social environment favourable to innovation, entrepreneurship and internationalisation, in which values such as creativity and controlled risk, as well as collaboration and openness to the outside world, are internalised by the people of Extremadura and act as a lever for intelligent, sustainable and integrating growth. 			
Beneficiaries:	Regional Administration	Type of financing:	Non-reimbursable grant
Procedures:	Selection of operations on the basis of expressions of interest from potential beneficiaries		

Activity:	Supporting Innovation in SMEs		
Brief description			
<p>Support for micro, small and medium-sized enterprises in the region is envisaged in order to promote the incorporation of capacities and technologies that involve SME innovation and the generation of new business opportunities with a high R&D&I content.</p> <p>This action is framed within the Strategic Lines and Programs included in the RIS3 Challenge 3 Extremadura.</p> <p>Support for microenterprises and SMEs in the region through technology consulting services and the implementation of technology watch systems.</p>			
Objectives			
<ul style="list-style-type: none"> - To revitalise the business fabric of Extremadura by resizing its companies at national and international level. - To increase the productivity and competitiveness of companies in Extremadura. - Favouring strategic and stable unions. - Favour the acquisition of technology to increase the competitiveness of the business network - To support new business opportunities in SMEs. 			
Beneficiaries:	Regional SMEs	Type of financing:	Non-reimbursable grant
Procedures:	Selection by means of a call for proposals		

Activity:	Actions to promote research projects in companies		
Brief description			
<p>The scope of this action is located within the Strategic Lines and Programmes included in the RIS3 Extremadura Challenge 3.</p> <p>Actions to support companies, including technology-based companies, to increase and systematise R&D business activities and promote innovation as part of their competitive strategy. Funding will be provided for R&D projects carried out by the applicant companies.</p>			

Objectives			
<ul style="list-style-type: none"> - To strengthen Extremadura's business and industrial fabric in order to improve its capacity, and to encourage the absorption of the results of research and technological development and the incorporation of resources and technologies that will enable quality and productivity to be improved. - To encourage business research, promoting the increase of its investment in this field. - To promote and develop the innovative culture within the Extremadura business fabric, increasing the number of innovative and/or technology-based companies in the region. - To increase the size, added value and competitiveness of the socio-economic fabric through that allow companies to incorporate and develop new technologies, with the ultimate aim of being more competitive in global markets. 			
Beneficiaries:	Large companies and SMEs	Type of financing:	Non-reimbursable grant
Procedures:	Selection by means of a call for proposals		

Activity:	Actions to promote collaborative business research projects		
Brief description			
<p>The scope of this action falls within the Strategic Lines and Programs contemplated in Challenge 3 of the RIS3 Extremadura.</p> <p>Actions to support companies to increase and systematize R&D and innovation activities to promote innovation as part of its competitive strategy, encouraging cooperation between companies and other agents of the Extremadura System of Science, Technology and Innovation (SECTI). It is will finance R&D projects carried out by several companies with the participation of some research centre.</p>			
Objectives			
<ul style="list-style-type: none"> - To strengthen the business and industrial fabric of Extremadura in order to improve its capacity, and to favour the absorption of the results of research and technological development and the incorporation of resources and technologies that allow for improved quality and productivity, and to promote cooperation and the generation of alliances. - To encourage innovation and cooperation between companies, promoting an increase in their investment in this area. - To promote and develop the innovative culture within the Extremadura business network, increasing the number of innovative companies in the region. - To increase the size, added value and competitiveness of the socio-economic fabric through that allow companies to incorporate and develop new technologies to innovate in their activity, through collaboration between companies and with public or private R&D centres for the development of R&D activities, with the ultimate aim of becoming more competitive in global markets. 			
Beneficiaries:	Large companies and SMEs	Type of financing:	Non-reimbursable grant
Procedures:	Selection by means of a call for proposals		

Activity:	Start-up Extremadura Programme		
Brief description			
<p>The scope of this action is developed within the Strategic Lines and Programmes included in Challenge 3 in RIS3 Extremadura.</p> <p>The aim is to identify innovative ideas with high potential to reach the market and business projects likely to develop successfully in Extremadura, as well as create an attractive ecosystem for talent entrepreneur in the sectors of specialisation established in the Extremadura RIS3 Strategy.</p> <p>In short, the aim is to implement a comprehensive plan for the creation, identification, activation, incubation and development of innovative and/or technology-based ideas as a source of competitive advantage and quality employment in the medium and long term, which includes</p> <ul style="list-style-type: none"> - Actions to promote the generation, attraction and development of innovative entrepreneurial initiatives of technological basis, providing a Network of collaborative workspaces. - Services oriented to the acceleration and consolidation of the start-up companies, as well as approach to public lines of participation in the share capital or the formalisation of participatory loans of these companies. 			
Objectives			
<ul style="list-style-type: none"> - To strengthen the competitiveness of the Extremadura System of Science, Technology and Innovation (SECTI), by encouraging the creation and consolidation of new innovative business initiatives, through high technological content (start-ups), high growth potential and high impact on territorial development. - Incorporate the innovative culture to the business activity, with the creation of start-ups. - To develop a range of services aimed at the creation, installation and consolidation of start-ups in the market. - Improve access to financing channels for start-ups. 			
Beneficiaries:	Regional Administration	Type of financing:	Non-reimbursable grant
Procedures:	Selection of operations on the basis of expressions of interest from potential beneficiaries		

Activity:	Actions to support the creation of technology-based and innovative companies		
Brief description			
<p>Aid will be granted for the creation and consolidation of enterprises with a high added value and an innovative base, as well as for the provision of advanced services to such enterprises which strengthen their innovative and technological position by improving the intensity of their innovation and the outcome of their innovation effort.</p>			
Objectives			
<ul style="list-style-type: none"> - To strengthen the competitiveness of the Science, Technology and Innovation System of Extremadura (SECTI), favouring the creation and consolidation of new innovative business initiatives, through companies with high technological content (start-ups), high growth potential and high impact on territorial development. - To incorporate the innovative culture to the business activity, with the creation of start-ups. 			

<ul style="list-style-type: none"> - To develop a range of services aimed at the creation, installation and consolidation of start-ups in the market. - Improve access to financing channels for start-ups. 			
Beneficiaries:	Young technology-based microenterprises	Type of financing:	Non-reimbursable grant
Procedures:	Selection by means of a call for proposals		

Activity:	Actions to promote technological and social innovation in health, quality of life and social services		
Brief description			
<p>These actions will increase the region's investment in innovation and social development through technological solutions applied to key aspects of health, quality of life and social services.</p> <p>On the one hand, a strategic project will be developed for the implementation of an electronic information system for networking in the field of social services. This implementation will positively affect the cooperation networks of the different public services in the field of social services, users and citizens in general who have access to these procedures, as well as resource management centres, their managers, etc.</p> <p>On the other hand, a technological platform will be created to work and coordinate the resources used in the family and children's field in order to respond to an operational need of the Regional Administration.</p>			
Objectives			
<ul style="list-style-type: none"> - Improve the attention offered to users from basic social services and the time of resolution of the procedures, the quality of the practical intervention, the coordination between the various professionals involved and the satisfaction of the users of the Services. - To optimize the conditions to facilitate the work in Network and the Coordination of the different professionals who intervene in both Basic and Specialized Social Care Services. - To implement a system that improves users' access to the different Services as well as their File, being aware of the deadlines or times of resolution of the procedure; - Improve the capacity to standardize and improve the protocols of action and facilitate the interventions by the various professionals; - Establish systems to evaluate the satisfaction of users who receive care and intervention in said Services. 			
Beneficiaries:	Regional Administration	Type of financing:	Non-reimbursable grant
Procedures:	Selection of operations on the basis of expressions of interest from potential beneficiaries		

Activity:	Innovation projects in large companies and SMEs		
Brief description			
The scope of this action is developed within the Strategic Lines and Programmes included in the RIS3 Extremadura Challenge 3.			

This action will finance innovation projects in the field of processes and organisation and within the scope of new technologies, in the areas of excellence established in RIS3 Extremadura.			
Objectives			
<ul style="list-style-type: none"> - Increase, systematize and promote business activities in innovation as part of the competitive strategy of companies. - Encourage the implementation of innovative business approaches, promoting the increase of their investment in this area. - To promote and develop the innovative culture within the Extremadura business network, increasing the number of innovative companies in the region and helping to increase business R&D expenditure. - To increase the size, added value and competitiveness of the socio-economic fabric through actions that allow companies to incorporate and develop new technologies to innovate in their activity, with the ultimate goal of becoming more competitive in global markets. 			
Beneficiaries:	Large companies and SMEs	Type of financing:	Non-reimbursable grant
Procedures:	Selection by means of a call for proposals		

Specific Objective 1.2.2. Knowledge transfer and cooperation between companies and research centres

Activity:	Office for Innovation of Extremadura
Brief description	
<p>The scope of this action is developed within the Strategic Lines and Programmes included in the Challenge of Culture in RIS3 Extremadura.</p> <p>The actions to be developed include, on the one hand, the interconnection between the Agents of the Extremadura System of Science, Technology and Innovation (SECTI) and, on the other hand, the control and monitoring for the implementation and development of the Extremadura RIS3 Strategy. For the implementation and monitoring of this Strategy, the Office for Innovation will carry out coordination work with the ultimate aim of meeting the scientific and technological needs of companies in the region.</p> <p>Specifically, activities such as visits to research groups belonging to SECTI, events and work meetings that provide a favourable environment for the generation of ideas, the creativity, the development of innovative projects and facilitate cooperation and the transfer of knowledge, and an advisory and consulting service will be provided for the presentation of projects European by the scientific-technological fabric of Extremadura, among others.</p>	
Objectives	
<ul style="list-style-type: none"> - To facilitate the active exchange of knowledge between the business community and the University of Extremadura, as well as the other SECTI knowledge centres. - To support research groups in the definition of services that respond to the challenges posed by companies, as well as support in the transfer of research results to the business sector. - To promote and support SECTI's participation in the different calls of the Regional R&D&I Plan, the State Scientific Research and Innovation Plan, as well as in the different calls of the European Union's Framework Programme for Research and Innovation, Horizon 2020. 	

- To carry out the functions of Technical Office of the RIS3 of Extremadura and to support the achievement of the objectives set out in the Regional Plan for R&D&I of Extremadura, following up the execution of the same, which will involve monitoring the actions included in both, checking the progressive evolution of the results.
- To promote and support the administration in the implementation of Public Purchase of Innovation in the region, by means of advice and training both to companies and to Public Administrations on the procedures to be followed in CPI tenders.
- Promote the exchange of knowledge and technology transfer in the areas covered by RIS3, giving a new focus to existing collaboration formulas in the region to achieve an increase in inter-business relations and promote stable cooperation between the business sector and R&D&I agents, which will help to boost innovative activity in the region.
- Creation of a social environment favourable to innovation, entrepreneurship and internationalisation.

Beneficiaries:	Regional Administration	Type of financing:	Non-reimbursable grant
Procedures:	Selection of operations on the basis of expressions of interest from potential beneficiaries		

Activity:	Actions to promote innovation and technology transfer to enterprises		
Brief description			
<p>The actions are developed by the centres of the Extremadura System of Science, Technology and Innovation in coherence with the RIS3 of Extremadura and will consist of the Design and implementation of a specific programme for Innovation, Technology Transfer and Knowledge Dissemination. In the specific design and planning of activities will be effectively integrated into the economic sectors, including meetings with the business sector, establishment of collaborations and consortiums at both national and international levels, and collaboration with other public or private bodies, including knowledge-generating centres in the region or outside it. From this system will derive some main lines of action of the Centre, which will be the basis to propose actions for innovation and the transfer and dissemination of its results.</p>			
Objectives			
<p>The aim is to promote the exchange of knowledge and technology transfer in the areas covered by the RIS3, giving a new focus to existing collaboration formulas in the region to achieve an increase in inter-business relations and promote stable cooperation between the business sector and R&D&I agents, which will help to boost innovative activity in the region.</p>			
Beneficiaries:	Regional Administration	Type of financing:	Non-reimbursable grant
Procedures:	Selection of operations on the basis of expressions of interest from potential beneficiaries		

Specific Objective 1.2.3. Promotion and generation of frontier knowledge and knowledge oriented to the challenges of society, development of emerging technologies

Activity:	R&D projects		
Brief description			
This action will finance research projects carried out by public agents of the Extremadura System of Science, Technology and Innovation (SECTI), in line with the RIS3 Extremadura.			
Objectives			
To promote the generation of knowledge, the scientific leadership of the region and its institutions and to encourage the generation of new opportunities that can trigger the future development of highly competitive technological and business capacities.			
Beneficiaries:	Public agents of the Extremadura System of Science, Technology and Innovation (SECTI)	Type of financing:	Non-reimbursable grant
Procedures:	Selection by means of a call for proposals		

Activity:	Actions to support the strengthening of the Extremadura System of Science and Technology both in the provision of centres and for the strengthening of research groups		
Brief description			
Support actions will be carried out for research and technological development activities, of dissemination and knowledge transfer by the Research Groups of Extremadura. As a whole, to be funded: activities aimed at increasing the participation of groups in EU framework programmes for the preparation of proposals and for the dissemination of scientific results as well as the promotion of scientific culture, to encourage the mobility of the group's members, the expansion and improvement of scientific equipment and the organisation of actions aimed at transferring the results of research to the business sector.			
Objectives			
<ul style="list-style-type: none"> - Consolidate and strengthen the Research Groups in Extremadura. - To promote the growth and improvement of new or emerging Research Groups. - To promote scientific activity and knowledge transfer from Research Groups in Extremadura to the business technology sector. 			
Beneficiaries:	Public agents of SECTI who have research groups registered in the Catalogue of Research Groups of Extremadura	Type of financing:	Non-reimbursable grant
Procedures:	Selection by means of a call for proposals		