

Chapter 6

Needed knowledge and skills for a successful entrepreneurial career in the framework of circular economy in Spain

6.1. The network of collaborators from Spain

The Circular Economy is increasingly present in production and design processes of companies and organizations and, to this end, more and better profiles related to the ecological transition are sought after. That is why identifying the needs for new competences and personal skills within companies and institutions is key to learn how to meet the needs of the labour market in the field of the Circular Economy.

In order to achieve this objective and to know the state and level of implementation of the Circular Economy in the Spanish rural context, surveys have been carried out in both private and public spheres. Thanks to them, it has been possible to identify the shortcomings that they consider relevant when carrying out their business and/or administrative tasks to promote new business models that carry out an efficient management of resources. A total of 17 companies and 3 organisations in the provinces of Murcia and Almería (Figure 1) with different characteristics, needs and level of knowledge of the Circular Economy participated in the surveys. The main characteristics of the entities under study are shown graphically and in aggregate way below.

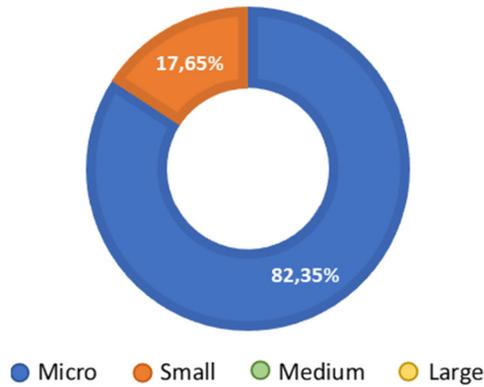
Figure 1: Map of the network of partners in Spain



The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

Starting with the private sector, 82.35% of the companies surveyed are micro-sized, i.e., they are made up of between 1 and 10 workers. The remaining 17.65% are small enterprises with between 10 and 49 workers.

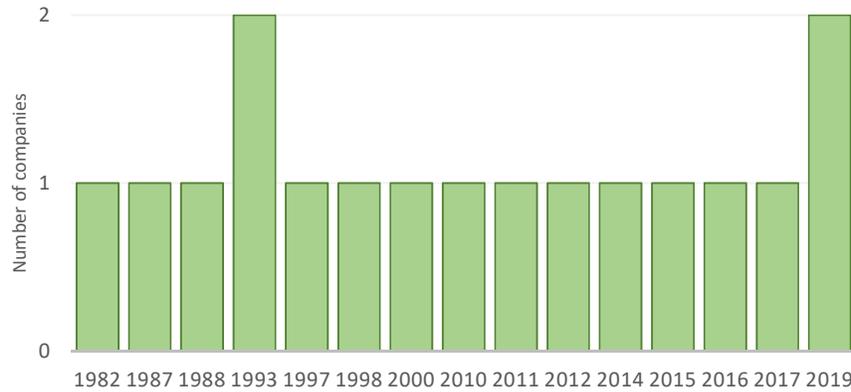
Figure 2: Company size



Firm size is a factor that significantly influences the innovative behaviour of firms. In general, it is observed that the larger the firm size, the higher the innovative behaviour because of the greater availability of resources. In this case, however, the small size of the companies surveyed can give a more specific and detailed picture of the real situation faced by these types of companies in rural areas. Their possible lower access to resources or less room for manoeuvre when carrying out certain operations makes them an ideal case study for the development of innovative strategies related to the Circular Economy.

With regard to the year of creation of the company, it can be observed that a significant proportion of the companies are newly created, with around 60% having been created since the year 2000 (Figure 3). This fact could be directly related to a greater introduction of ecological and environmental improvements in the production and management processes, given the greater awareness that has arisen in recent years in this area.

Figure 3: Company foundation year



In terms of the main activity of the companies, it is observed that they directly manage natural resources or are in direct contact with them. The following table (Table 1) gives a general summary of the main activity of the companies surveyed. As can be seen, agriculture and water management predominate, as well as the construction and implementation of hydraulic or electrical infrastructures. Knowing the needs and concerns of this type of companies is of vital importance for the proper management of resources at all stages of their useful life and for the implementation of customised Circular Economy strategies.

Table 1: Main company sector and activity

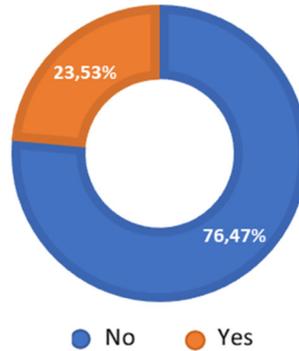
Sector	Main company activity
Primary sector/ resources management	Irrigation water supply, control and management Agriculture and stockbreeding Fruit farming
Construction sector	Transport and civil works Electrification and Remote Control Hydraulic works Engineering services Construction of electrical and renewable energy installations
Service sector	Insurance Rural house rental Auditing

Finally, one of the factors that encourages the implementation of innovative processes in the framework of the Circular Economy is having been involved in a research project in recent years. The results of the survey show that around 76.5% of the companies surveyed have not been involved in any research project in the past 5 years (Figure 4). Those that have answered yes to this question are more related to engineering and construction processes, as well as water management. Moreover, it is remarkable that these participation processes are more observed in more recently established companies,

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

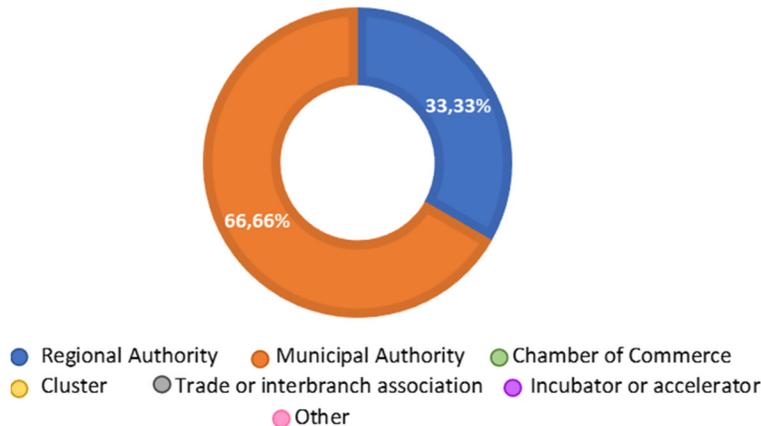
showing the increased awareness of the ecological transition in recent years. For them, the introduction of innovative processes in their business processes can lead to significant savings in resources and costs.

Figure 4: Has your company been involved in research projects during the past 5 years?



On the other hand, with regard to the public sector, the organisations were classified according to the scope and nature of their activities (Figure 5). In this sense, 66.66% of the organisations surveyed are municipal authorities, those that are in direct contact with the problems and needs of the smaller companies in their municipality, while the remaining 33.33% are regional authorities, those that manage and coordinate larger-scale activities and that allow for greater development of resilience and cohesion between smaller territories.

Figure 5: Organization classification

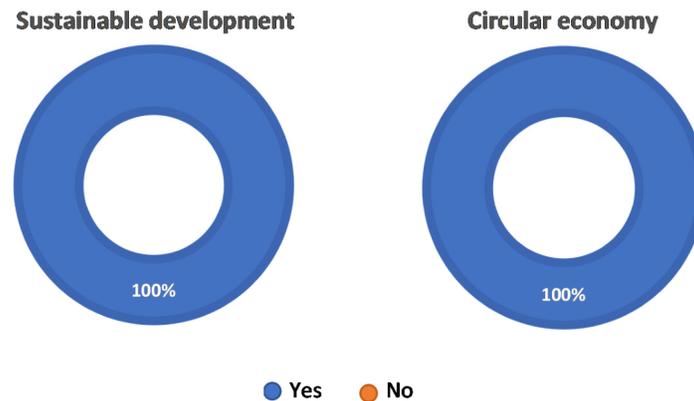


In terms of the main activity they carry out, water resources management, regional agricultural management and activities related to local government stand out. These are activities related to the management of natural and local resources that directly affect the productivity and implementation of innovative systems by the surrounding companies. Therefore, the analysis of the strategies employed by these organisations

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

and their knowledge in the field of the Circular Economy can help to improve the joint situation of the economic agents from the perspective of an efficient use of resources. In this sense, the most noteworthy aspect in this area is that 100% of the organisations surveyed state that they carry out activities related to sustainable development and the circular economy (Figure 6), a fact that makes it possible to raise awareness in the business sector and encourage the development of innovations that enable better management of resources.

Figure 6: Does your organization carry out activities related to sustainable development or circular economy?



In short, these are companies and organisations that have great potential for analysing the needs of the labour market in the field of the Circular Economy in rural environments. Their characteristics, knowledge and level of implementation of innovative circular processes will help to improve efficiency and good use of resources in a context of scarcity.

6.2. Presentation of survey results

After specifying the characteristics of the entities that took part in the surveys, this section graphically shows the main results obtained. This part of the survey focuses on three aspects:

1. Knowledge of Circular Economy implementation in rural area.
2. Knowledge required by the labour market for an entrepreneurial career in Circular Economy in rural areas.
3. Personal skills required for a successful implementation of circular economy in rural areas

○ Knowledge of Circular Economy implementation in rural area

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

Regarding the level of knowledge about the implementation of the Circular Economy by the surveyed companies, it is noteworthy that 52.94% of them have only recently started to hear about aspects related to the Circular Economy, while 47.06% had notions for more than 5 years (Figure 7). These results point out the possible existence of a bipolarity between companies. Those with greater awareness of the concept are, in general, those involved in the construction of water or energy facilities and related to engineering, while those whose main activity is more focused on agriculture or water management stand out for having recently been in contact with the concept. In the case of organizations, on the other hand, 66.66% claim to have heard about the Circular Economy five or more years ago, while 33.33% have heard about it recently (Figure 8).

Figure 7: Companies - When did you first hear about Circular Economy?

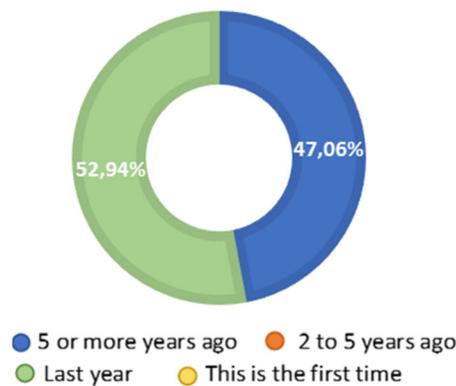
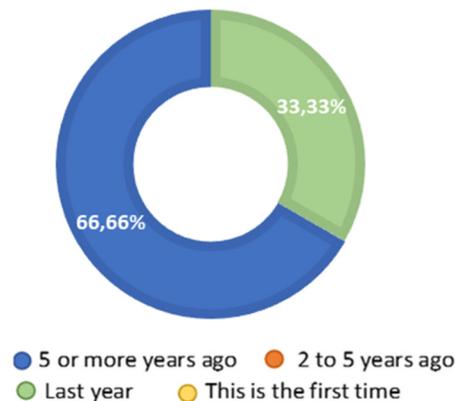


Figure 8: Organizations - When did you first hear about Circular Economy?

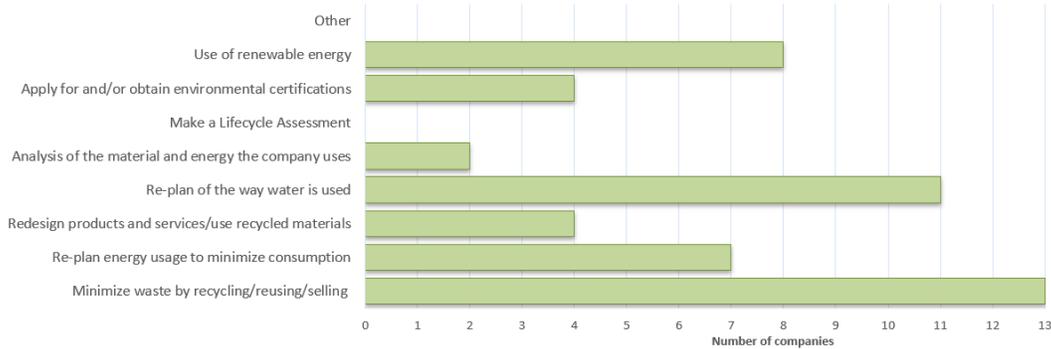


If we take into account the Circular Economy activities implemented by the companies in the last 5 years (Figure 9), the most important are the minimisation of waste by recycling or reusing it or selling it to another company, followed by the re-planning of

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

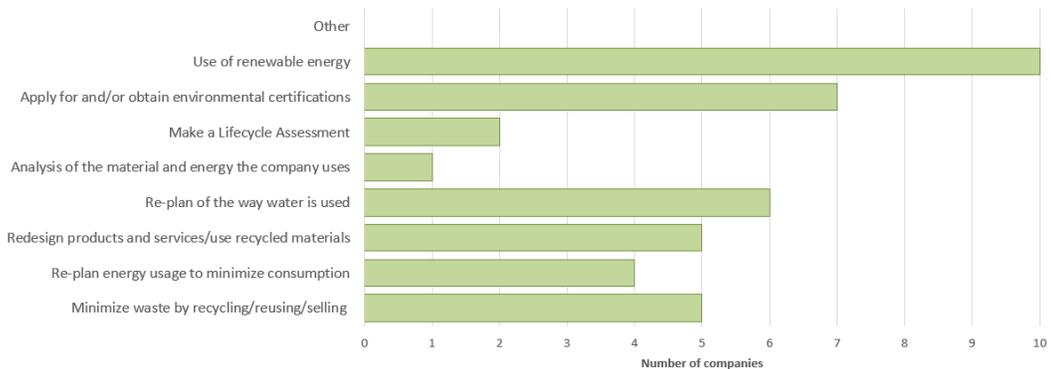
the way water is used to minimise its use and maximise its reuse, and the use of renewable energies. Those activities least considered by companies are related to the analysis of material and energy flows used or the redesign of products and services to minimise the use of materials or use recycled materials.

Figure 9: Companies - Which of the following Circular Economy activities your company has implemented in the past 5 years?



In addition, the Circular Economy activities that companies plan to implement in the next 5 years have been collected (Figure 10). In this sense, a significant percentage of companies are committed to the use of renewable energy as a necessary activity for a more efficient management of resources. They also consider applying for and/or obtain environmental certifications.

Figure 10: Companies - Which of the following Circular Economy activities your company will implement in the next 5 years?

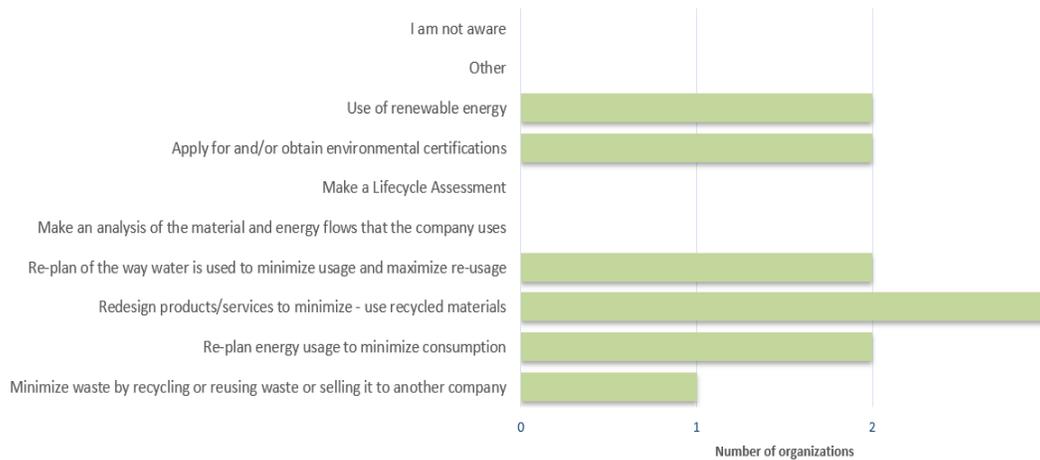


With regard to the Circular Economy actions that the organizations think are most widespread among the companies in their regions, the redesign of products and services

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

to minimize the use of materials or to use recycled materials stands out (Figure 11). Furthermore, in line with the actions carried out by the companies, organizations highlighted the use of renewable energies or the application for environmental certifications.

Figure 11: Organizations - Which of the following Circular Economy actions in your opinion are the most widespread among companies in your region?



Companies and organizations agree that the implementation of the Circular Economy measures described brings environmental, economic and social benefits to both the company and society as a whole. The following graph (Figure 12) shows the benefits that the companies have achieved or intend to achieve after the implementation of the described activities. In general, it can be seen that the main motivation for the implementation of these measures are the environmental benefits derived from them, including better management and use of resources and the generation of fewer negative environmental externalities in production processes. Significant economic benefits are also observed, stimulating growth and the exploitation of new market opportunities.

As far as organisations are concerned, they consider that companies apply measures related to the Circular Economy that benefit them in the saving of resources, the emission of less greenhouse gases, new profit opportunities and the better management of natural resources (Figure 13). They also consider relevant market aspects such as the leadership in sustainability and business differentiation.

Figure 12: Companies - Which of the following benefits the company has or will gain from the Circular Economy actions (to be) implemented?

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

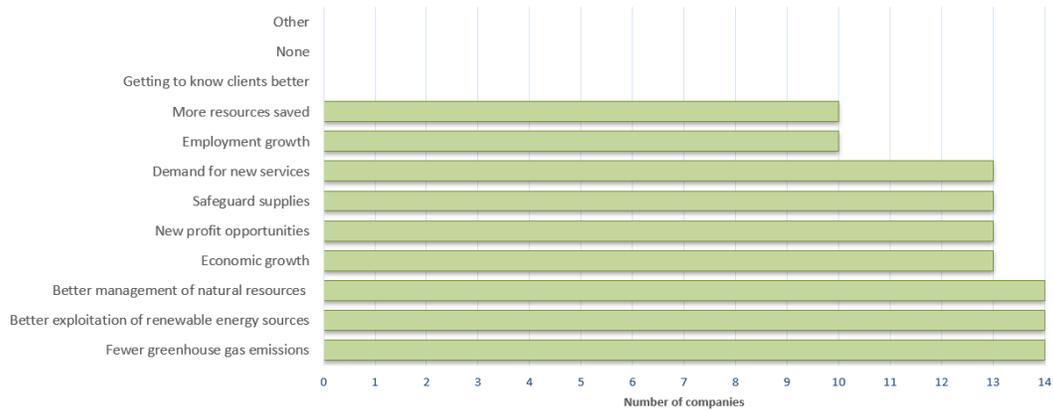
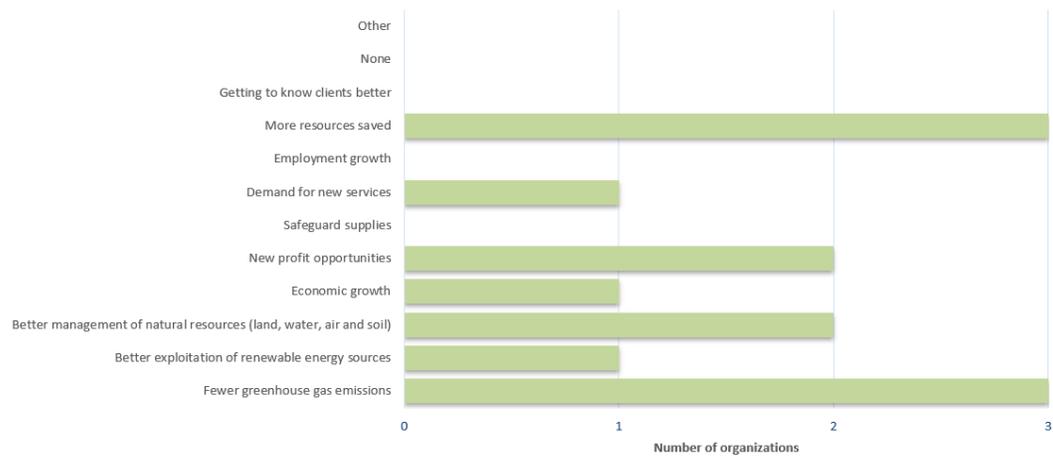


Figure 13: Organizations - Which benefits of Circular Economy do you think companies are interested in gaining?



The degree of implementation of Circular Economy measures in the region where these companies are located provides an overview of the context and the degree of awareness in the area. Significant differences can be observed, with 41.17% and 5.88% of the companies surveyed stating that their region is working or just started with the implementation of Circular Economy, respectively (Figure 14). Only 11.78% confirm that their region is at the forefront. However, it is noteworthy that the remaining 41.17% are located in a region where no measures are being implemented. On the contrary, 100% of the surveyed organisations consider that their region is working in the implementation of Circular Economy in rural areas (Figure 15).

Figure 14: Companies - How would you classify the region your company is based regarding the implementation of Circular Economy in rural areas?

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

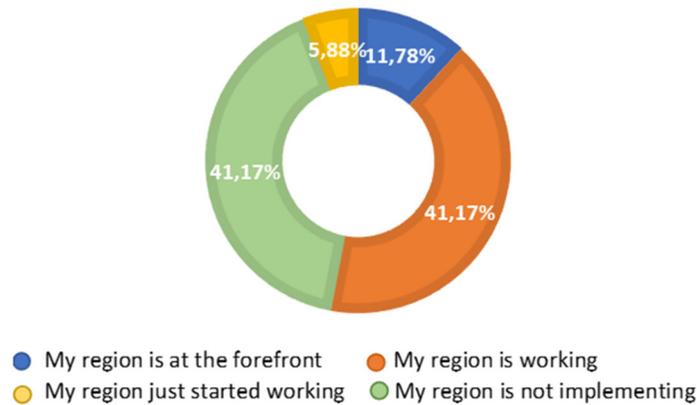
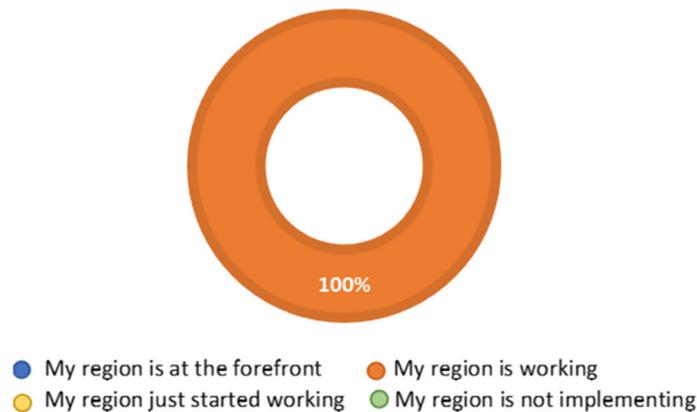


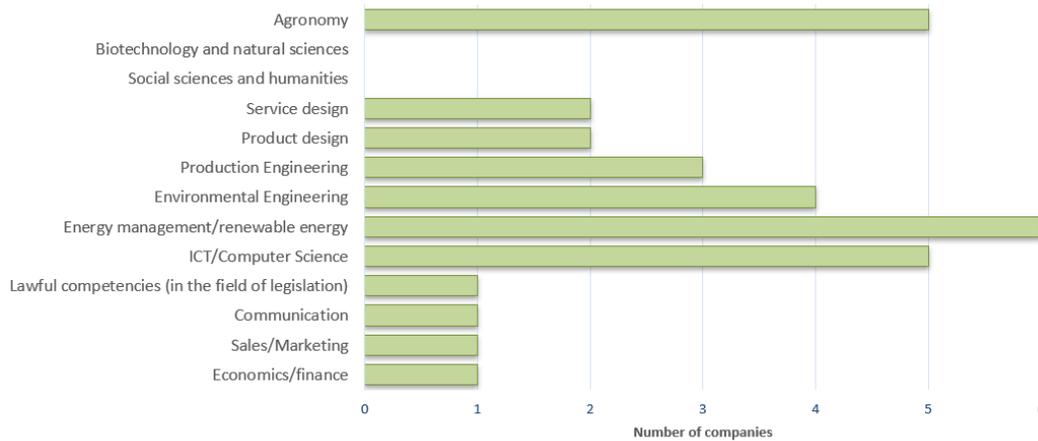
Figure 15 – Organizations - How would you classify the region your organization is based regarding the implementation of Circular Economy in rural areas?



On the other hand, in terms of competences of new employees/collaborators that companies have added over the last 5 years (Figure 16), those related to energy management and renewable energy stand out. This fact highlights the importance given by companies to the good use and management of renewable energies in their production processes. In addition, there are competences related to agronomy, given that a significant proportion of companies have agriculture as their main activity, and to information and communication technologies and computer science.

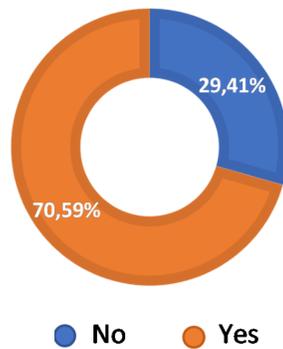
Figure 16: Companies - Which of the following competences in terms of new employees/collaborators have you added to the company over the past 5 years?

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein



However, despite the implementation of Circular Economy activities carried out in the companies, 70.59% of them consider that they need professionals or specialised experts to assist in the implementation of Circular Economy models (Figure 17). The remaining 29.41%, mostly companies involved in agriculture and fruit production, state that they do not have such needs.

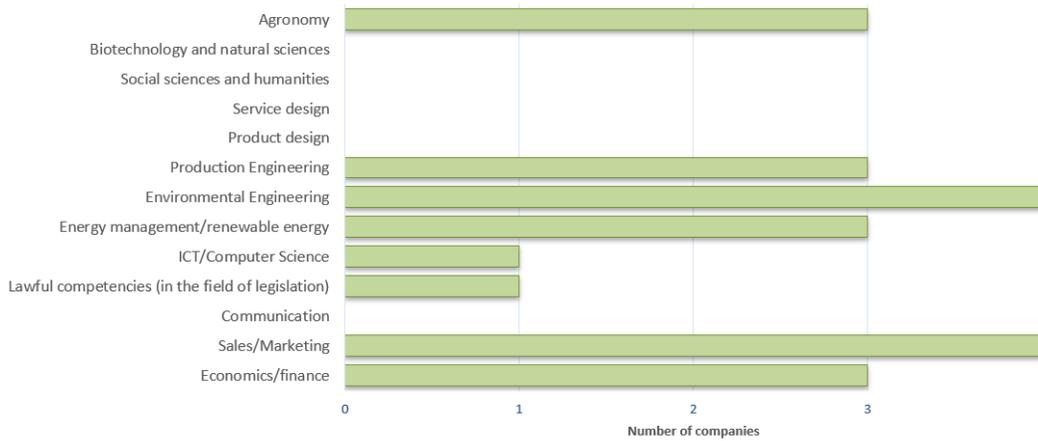
Figure 16: Companies - Do you think that your company needs specialized professionals/experts to support the implementation of Circular Economy models?



Among those companies who consider the presence of professionals or experts to be necessary, the areas they consider key are environmental engineering and marketing and sales tasks (Figure 18). These are joined by agronomy, production engineering, energy management and renewable energy, and economics and finance. They also stress the importance of having a qualified and responsible workforce.

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein

Figure 18: Companies - Fields to cover the needs of specialized professional/experts



In this context, organisations consider that all companies require the help of specialised professionals/experts to support the implementation of Circular Economy models, regardless of the activity or sector in which they operate (Figure 19). Among the fields in which they consider that this specialisation is required, they consider agronomy, IT and communication skills (Figure 20).

Figure 19: Organizations - Do you think that companies need specialized professionals/experts to support the implementation of Circular Economy models?

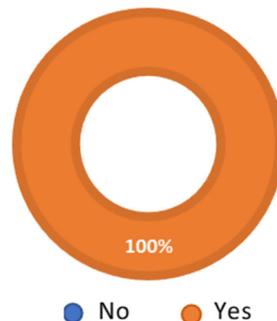
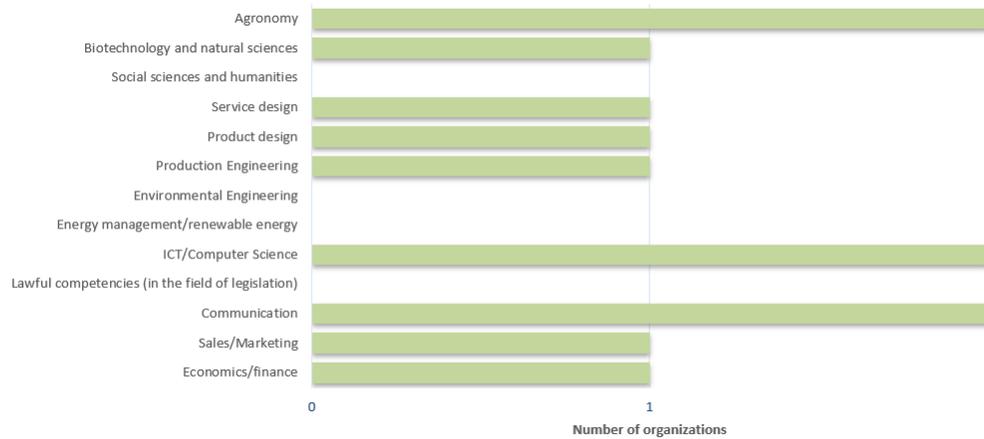


Figure 20: Organizations - Fields to cover the needs of specialized professional/experts



- Knowledge required by the labour market for an entrepreneurial career in Circular Economy in rural areas

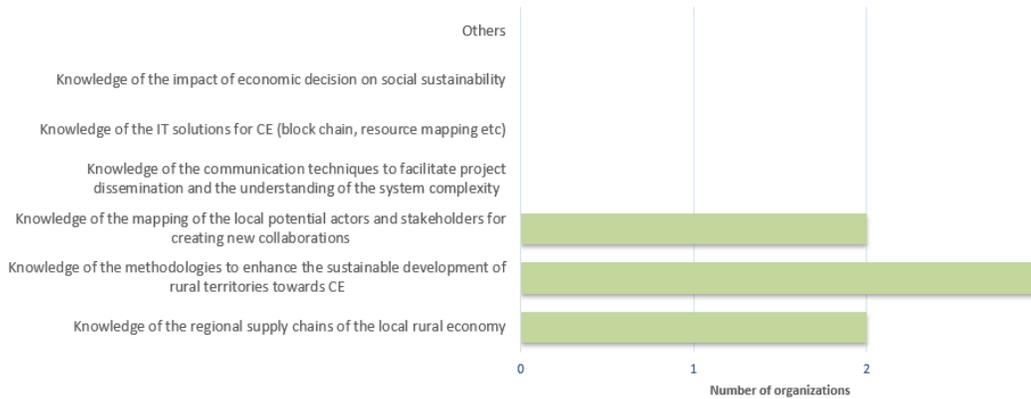
The following graphs show the importance that the surveyed companies and organizations attach to the knowledge required by the labour market for an entrepreneurial career in Circular Economy in rural areas. For this purpose, 5 areas have been taken into account.

Firstly, within the area of the Circular Economy, a greater number of companies consider essential to have knowledge of communication techniques that facilitate the dissemination and understanding of the project, regardless of its complexity (Figure 21). To these are added the knowledge of how to locate potential actors and stakeholders for possible collaborations or the knowledge of methodologies to enhance the sustainable development of rural territories. Organizations, on the other hand, consider essential to have the knowledge of the methodologies to enhance the sustainable development of rural territories toward Circular Economy (Figure 22), but also the knowledge of how to locate potential actors and stakeholders for possible collaborations and the knowledge of the regional supply chains of the local rural economy.

Figure 21: Companies - Importance of Circular Economy area competences



Figure 22: Organizations - Importance of Circular Economy area competences



Secondly, and regarding the industrial processes area, knowledge of technological innovation in the circular economy, or knowledge of the measurement of the environmental impact of industrial processes, stands out for companies (Figure 23). However, organizations attach more importance to knowledge of processes for the further valorisation of by-products resulting from primary transformation processes and knowledge of waste management in the local context (Figure 24). Knowledge of ecological systems is also emphasised by some organizations.

Figure 23: Companies - Importance of industrial processes area competences

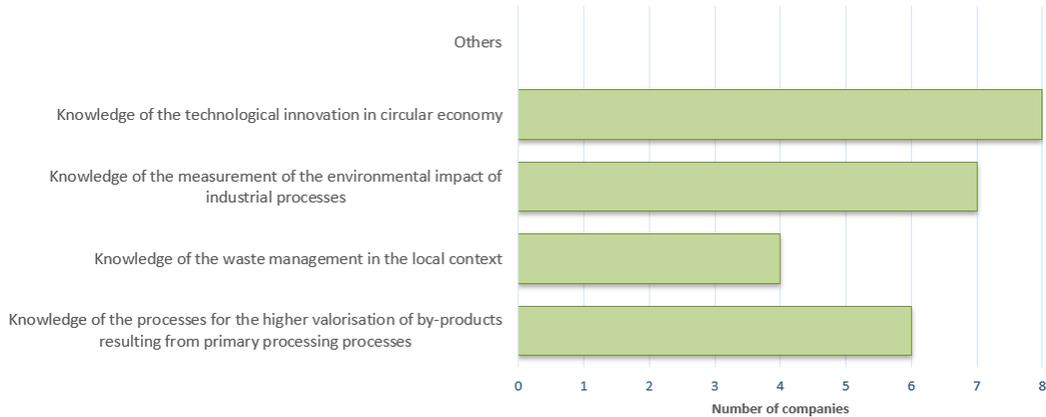
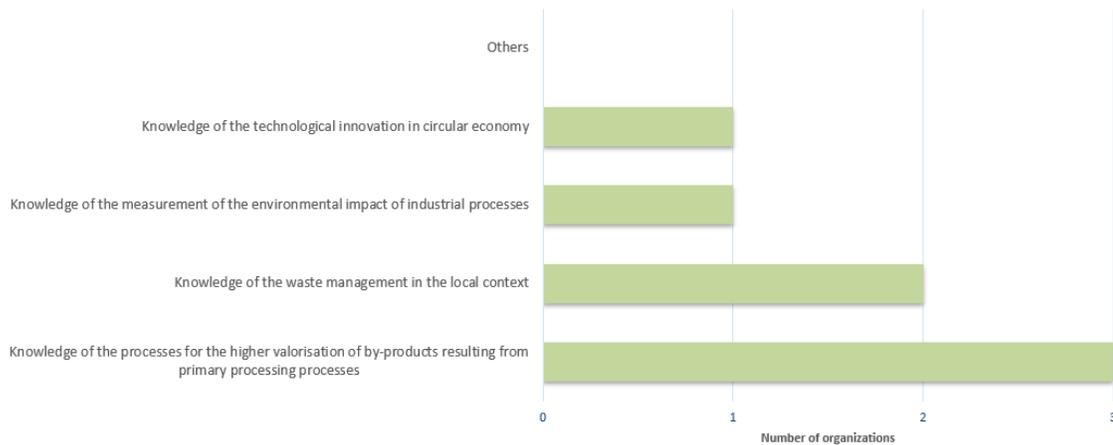


Figure 24: Organizations - Importance of industrial processes area competences



Within resource management area competences, companies attach importance to the knowledge of the technologies for sustainable exploration of renewable energy sources (Figure 25), one of the main concerns and activities that a considerable proportion of the companies surveyed plan to implement. Among the competences in this area, the knowledge of the technologies for sustainable exploitation of the local raw materials also stands out. Organizations, in contrast, consider the knowledge of the assessment of the natural resource capacity of the territory (Figure 26), the competence to which companies attach less weight, to be more important.

Figure 25: Companies - Importance of resource management area competences

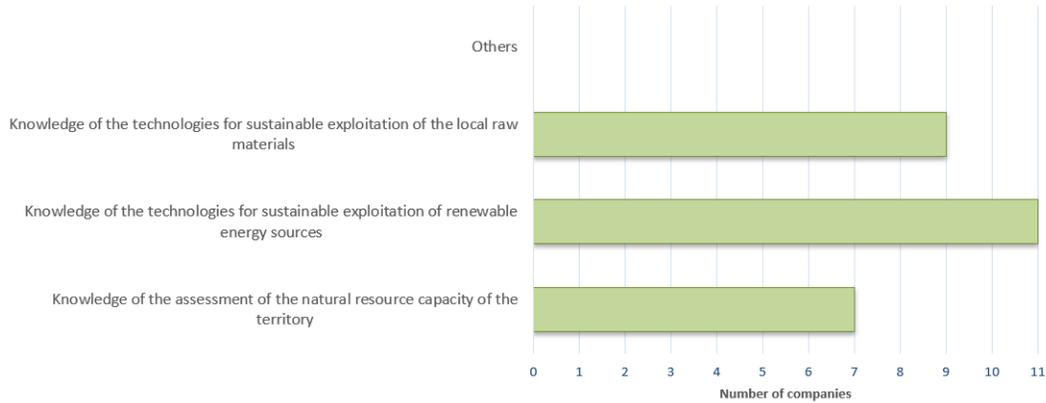
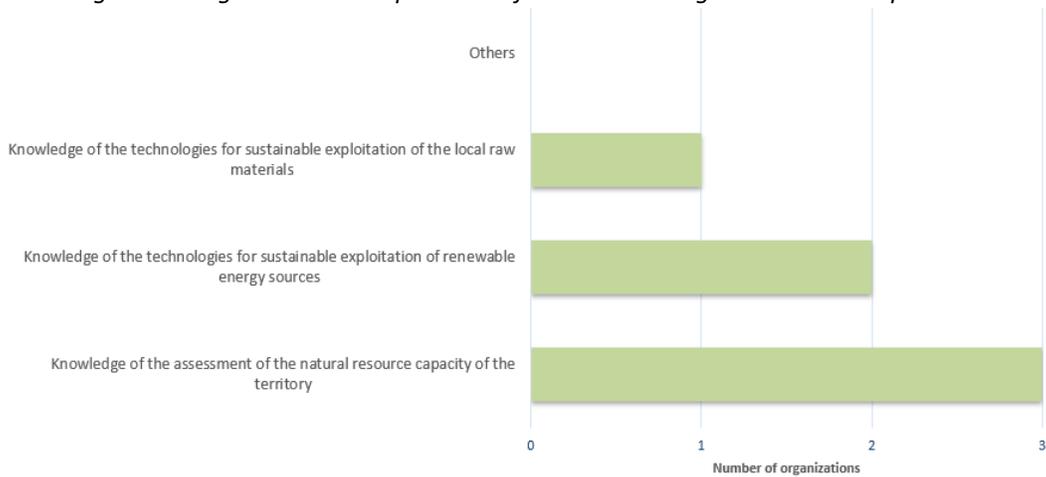


Figure 26: Organizations - Importance of resource management area competences



If we focus on the importance of business area competences, knowledge of the opportunity investments for Circular Economy in rural areas, are considered equally important for companies and organizations (Figures 27 and 28). Companies consider, as well, knowledge of the business plan development, while organizations are more interested in the knowledge of business management in the frame of Circular Economy.

Figure 27: Companies - Importance of business area competences

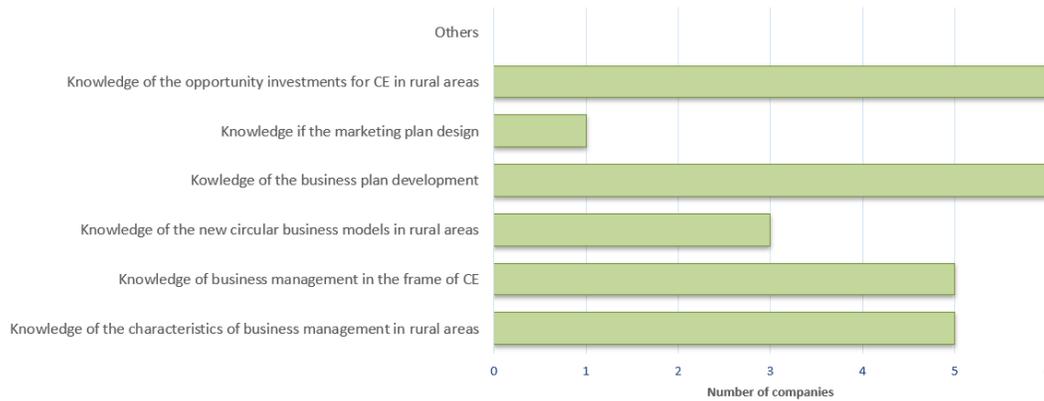


Figure 28: Organizations - Importance of business area competences



Finally, as far as the importance of legislation area is concerned, most companies agree on the need for knowledge of norms and legislation for waste management (Figure 29), an aspect which, as observed in the first part of the survey, companies can take advantage of in their management by either reducing waste or reusing it. For organizations, knowledge of standards and legislation for the protection of the environment is becoming more important (Figure 30).

Figure 29: Companies - Importance of legislation area competences



Figure 30: Organizations - Importance of legislation area competences



- Personal skills required for a successful implementation of circular economy in rural areas

The last part of the survey focuses on identifying the personal skills required for a successful implementation of the Circular Economy in rural areas. Thus, companies attach great importance to being able to work in a team with different Circular Economy competences, but also to the ability to make quick and effective decisions in a context of uncertainty, and to aspects such as self-motivation in carrying out tasks (Figure 31). Companies also highlight the importance of skills such as decision-making, consideration of economic, environmental and social sustainability, accountability, integrity and making visible the impact on resources and stakeholders. For organizations, the skills considered to be the most helpful for anyone wishing to work in Circular Economy business in rural areas are communication skills, Mentoring/Coaching skills for newcomers, working in a team with different competences in Circular Economy and managing an interdisciplinary team with different professionals and backgrounds (Figure 32).

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein



Figure 31: Companies - Which personal skills do you consider to be the most helpful for anyone wishing to work in Circular Economy business in rural areas?

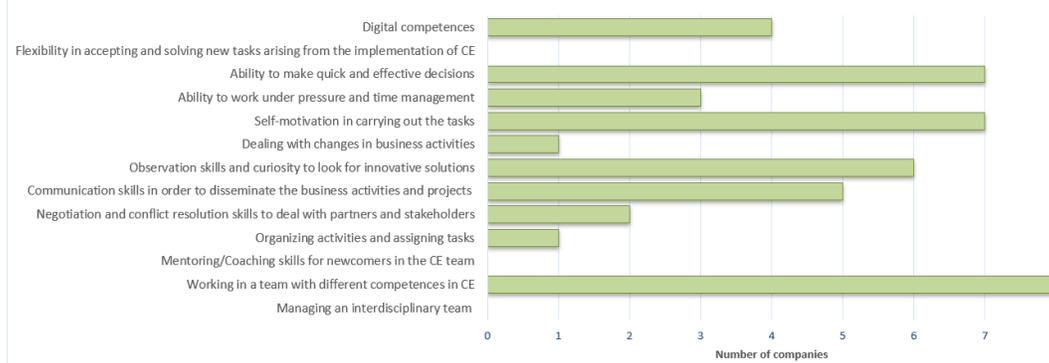
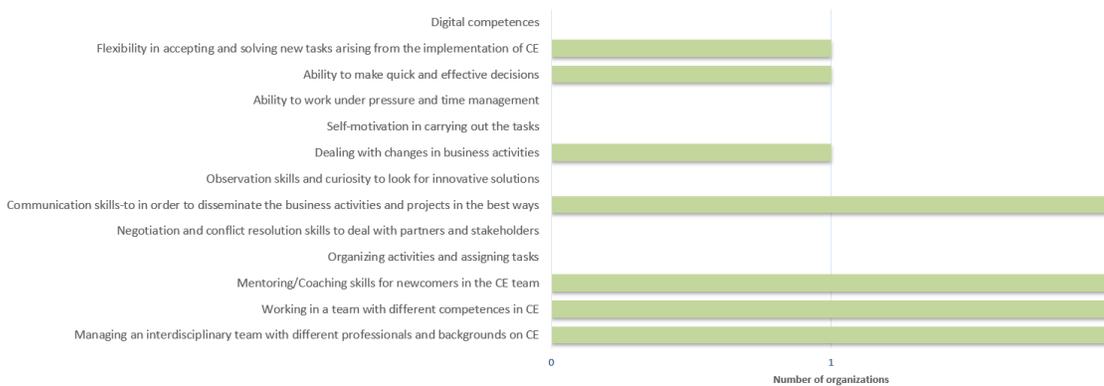


Figure 32: Organizations - Based on the experience of your organization, which skills do you consider to be the most helpful for anyone wishing to work in Circular Economy business in rural areas?



○ Suggestions for a successful entrepreneurial career in CE in rural areas

Finally, in the case of the survey of organisations, some suggestions for a successful business career in Circular Economy in rural areas have been collected (Figure 33). In this sense, aspects such as being in contact with the association of companies and regional innovation agents or investing in the training of the company's team to be up to date in the concepts and innovations of the Circular Economy stand out.

Figure 33: Organizations - From your own experience, which of the following suggestions are the most important for an entrepreneur to implement CE in rural areas

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein



6.3. Analyses and conclusions

The results of the surveys show that both companies and organizations are concerned about understanding and incorporating activities or innovations related to the Circular Economy, even though a considerable proportion of them have only recently notions about the concept. In this sense, it is observed that many of the surveyed companies have already implemented activities related to the Circular Economy, such as the reduction and reuse of waste generated in their productive activity, or plan to implement measures in the next 5 years, especially related to the use of renewable energies. These activities are also considered by the organizations as the most widespread among companies in their regions. It is also observed that companies tend to apply activities related to the Circular Economy with a view to achieving both environmental and economic benefits, better management and use of the resources and less generation of negative environmental externalities.

Both companies and organizations consider that it is necessary professionals or specialized experts to assist them in the implementation of Circular Economy models, especially in fields related to environmental engineering or computer and communication skills. In this way, they highlight as necessary the knowledge of communication techniques that facilitate the dissemination and understanding of the project or the knowledge of methodologies to promote the sustainable development of rural territories.

With regard to industrial processes, the companies and organizations highlight the importance of knowledge of processes for the subsequent valorization of by-products resulting from primary transformation processes and the knowledge of technologies for the sustainable exploration of renewable energy sources. The latter is one of the main concerns of the entities surveyed. They also underline the need for knowledge of

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the National Agency and Commission cannot be held responsible for any use which may be made of the information contained therein



standards and legislation for waste management and legislation for environmental protection.

Finally, as regards the skills required for a successful implementation of the Circular Economy in rural areas, they highlight the importance of being able to work in a team with different Circular Economy competences or the mentoring/coaching skills for newcomers with different professionals and backgrounds.