



# Chapter 7

## **Needed knowledge and skills at the European level for a successful entrepreneurial career in circular economy**

### **A comparative study among the participant countries**

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#### **7.1 Introduction**

The goal of this chapter is to analyse the opinion poll results obtained in the countries participating in the project. A general conclusion concerning the competences required by the labour market for implementing the circular economy in their activity will be obtained. This will allow the design of training course content to teach students a new rural business model.

Considering that in the survey were involved four important countries from different regions of the Europe and with different historical evolution, the conclusions obtained will have value of the European level.

The analysis will focus especially of the competences and skills for a successful entrepreneurial carrier in rural area but, tangentially, other points of interest from the survey will also be touched.

#### **7.2 Knowledge of circular economy implementation in rural areas**

The time when information concerning circular economy reached the target audience is important for the responsible factors of CE implementation. Knowing, in case of each country, the best channel to transfer promptly the political lines of future development can help in faster results.

The Circular Economy Package was launched in December 2015 and there are countries which transposed European directives into national legislation faster, like Italy, others later, like Romania. However, the companies opened to new ideas, interested in European trend and founts, follow the information directly from the European Commission.

In Romania, 58.3% of companies participating in survey found out about circular economy with the occasion of Multitraces project and only 8.3% five years ago. In Spain, on the date of the opinion poll, all respondents had heard of the circular economy, 47% five or more years ago. The same good percents are also in Greece, 52,2% had information about CE with five years ago, 34.8% with two until 5 years ago and the difference until 100%, last year. The same situation, with very close percent is in Italy. So, around 91% of the questioned

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companies knew what the circular economy means. A percent of 40.9% with 2-5 years ago, and 50% with more than five years. The progress in transition to circular economy in Italy and Spain are explainable.

In Romania the Strategy for the transition to circular economy is in preparation for September 2022, in Greece was adopted in 2018. If in Romania the transposition of European legislation in the domain is unfortunately postponed, the delay of the concrete results in case of Greece can be explained by the late adoption of the legislation to support the transition. However, in both countries, measures have been taken that fall under the CE line, such as supporting the exploitation of renewable energy sources or the selection and utilization of waste.

In all four countries, companies were performed different actions from the sphere of the circular economy such as: waste minimization, installations using renewable sources, re-planning energy use to reduce consumption or re-plan of the way water is used to minimize the consume and for reuse of it. This last measure is on the second position as frequency in Spain, country that faces a lack of water in many areas and on the third position in case of Greece. In the case of countries less informed in circular economy these actions were performed under the sustainable development plan.

The type of measures that the companies intend to adopt in the next five years from the list proposed by questionnaire, circumscribe the same spheres.

In Romania the first three intentions of the companies are:

- *re-plan energy usage to minimise consumption*, chosen by 54.2% of respondents;
- *analysis of the material and energy flows* selected by 50% of respondents;
- *waste minimisation* - 45% of the respondents.

In Italy the companies chosen:

- *minimise waste by recycling or reusing waste or selling it to another company*- 86.4% of the options;
- *re-plan energy usage to minimise consumption* with 63.6% of options;
- *use of renewable energy* also with 63.6% of opinions.

The companies from Greece decided to future implement:

- *waste minimisation*- around 90% of companies;
- *re-plan energy usage* – over 62% of companies;
- *use of renewable energy* – also 62% of companies.

In Spain the options of the companies were:

- *use of renewable energy* –it is preferred by about 59% of respondent companies
- *apply for and/or obtain environmental certifications* – is the future measure in case of 41% of companies;
- *re-plan of the water use* is the third measure that will be implemented by 35% of respondents.

Spain, according with the specific of its territory and the national legislation has future measures different from the other three countries. In Spain the wind and solar energy have a great potential and the environment protection imposes strong rules so, obtaining of the

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environmental certification is an important matter. Also, the water, as was previous mentioned, it is an insufficient resource and has to be carefully managed.

Analysing the options expressed by the respondents, it can be seen that the same options are found even if they are in different positions in each country, of course, with exception of Spain, in its case being predominant the options associated with natural resources exploitation.

It is very interesting to see if the companies connect these measures, part of them imposed by national legislation, with the benefits that circular economy can bring to the company and society. Always when things are done out of conviction and not imposed, the results are much better.

So, the benefits listed by companies are presented in the following paragraphs.

Romanian companies indicated as main benefits: *Better management of natural resource; Economic growth* and *Better exploitation of renewable energy sources*. Italian companies consider *More resources saved, Better exploitation of renewable energy sources* and *Better management of natural resources* as main result of circular economy principles application. In Greece it is a larger option of responses, starting with *Better exploitation of renewable energy sources, Better management of natural resources, Economic growth* and *Getting to know clients better*, all with percent between 60 and 50% and ending with *New profit opportunities*, proposed benefit with around 50% of options. Spain companies first three options are: *Better management of natural resources, Better exploitation of renewable energy sources* and *Fewer greenhouse gas emissions*.

The effects of CE on their own business were underlined as one of the main benefits by Romanian and Greece companies. Spain and Italy consider more important the effect on the environment of the circular economy. These two countries have much more gross domestic product than Greece and Romania and a more stable economy. So, the concern for the success of the business is much greater in Greece and Romania, where economic growth is still needed.

An important question of the study from the point of view of the Multitraces project, investigates the extent to which companies have identified the need for staff trained in the field of the circular economy. In case of Romania, the result of the survey indicates that 91.7% of the participants recognised the need of these specialists. In Italy, an advanced country in circular economy, as was shown in previous chapters, only 54.5% of the companies require staff with competences in circular economy. In Greece 87% and in Spain 70.59% of the respondents gave a positive answer to this question.

The conclusion is that on the European labour market there necessary employees trained in this circular economy, even in advanced countries in this area. In these conditions the approach started through this project, to prepare young people in the CE domain, is more necessary than even. The industrial branches from rural area, agro-food industry, can easily make the transition to circular economy through by-products and waste capitalisation.

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The course modules which will be developed to train the students in circular economy for new business model in rural area will be oriented in this direction. It is important to structure these course modules according to the companies' needs, therefore these aspects were investigated during the opinion poll.

### **7.3 Knowledge required by the labour market for an entrepreneurial career in circular economy in rural areas**

In order to collect information about the skills required by companies working in rural areas, specific knowledge from different fields were proposed to respondents during the survey.

The first set of knowledge proposed was from *Circular Economy area*.

The first options of the Romanian companies indicated as needed knowledge about:

- *the methodologies to enhance the sustainable development of rural territories towards circular economy;*
- *the regional supply chains of the local rural economy;*
- *the communication techniques to facilitate project dissemination and the understanding of the system complexity;*

It can be understood that the companies from Romania have a lack of information concerning the methodology for improving the transition to circular economy, have problems with the supply chain and with communication of the projects, especially in case of complex systems.

The Italian companies require firstly:

- the mapping of the local potential actors and stakeholders for creating new collaborations (for example based on the by-product management)
- the methodologies to enhance the sustainable development of rural territories towards Circular Economy;
- the regional supply chains of the local rural economy.

The first choice of Italian companies is from the line of systemic design proving the interest in the development of the collaborative network for the valorisation of organic waste and by-products. The next two are the same as the Romanian companies' choices.

In case of Greece, the respondents have chosen the knowledge concerning:

- the methodologies to enhance the sustainable development of rural territories towards circular economy;
- the regional supply chains of the local rural economy;
- the impact of economic decision on social sustainability.

Spanish companies need skills in:

- the communication techniques to facilitate project dissemination and the understanding of the system complexity;



- the mapping of the local potential actors and stakeholders for creating new collaborations;
- the methodologies to enhance the sustainable development of rural territories towards circular economy.

The first need of the companies from Spain is the capacity to communicate with civil society the plans and intentions concerning the development of projects and to create complex systems for capitalisation of the local potential in terms of by-products, waste management and renewable energy exploitation. This need is accompanied by the necessity to create collaborative relations with local actors. To be able to solve these problems need a clear and adapted methodology. These are the identified needs of Spanish companies.

The responses received from the four countries can be ranked in a simple and unsophisticated way by awarding the following points: 3 points for the first option, 2 for the second and 1 point for the third option, expressed by the companies in each country.

Comparing the choices made by the four countries some conclusions can be drawn:

- there are still gaps in the circular economy approach methodology, there are still uncertainties regarding the way to approach the transition; knowledge in this direction is expected by all four countries. *The methodologies to enhance the sustainable development of rural territories towards circular economy* received 9 points.
- on the second position, with 5 points is the knowledge concerning *the regional supply chains of the local rural economy*. This knowledge can be gained through a careful study of the economy in the area and the identification of all the actors involved. If the entrepreneur is from the respective region, the requirements are simpler.
- on the third position in the options expressed by companies is *the mapping of the local potential actors and stakeholders for creating new collaborations* which receive 5 points. It is interesting that this knowledge is required by advanced countries in circular economy implementation, Italy and Spain. The companies from these countries have a larger vision, the stage of the individual projects has been exceeded and now, it is necessary to involve more members of the regional community to participate in the development of new larger projects.

The next knowledge, identified by companies from Romania and Spain, is *the communication techniques*, knowledge which can help in the implementation of projects, through easier acceptance by the local community.

The next area of knowledge addressed in the opinion poll is **Industrial Processes**. The domain is more technical and implies specific knowledge.

The first options chosen by the Romanian companies as necessary knowledge are:

- the processes for the higher valorisation of by-products resulting from primary processing processes;
- the measurement of the environmental impact of industrial processes;
- the waste management in the local context.

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The answers of Italian companies underlined the interest as new members of the staff to have knowledge about:

- the processes for the higher valorisation of by-products resulting from primary processing processes;
- the technological innovation in circular economy;
- the measurement of the environmental impact of industrial processes.

As can be seen, two options are common with those expressed by the Romanian companies but the Italians also want personnel with innovative capacity.

In the case of Greece survey the preferred knowledge is about:

- the processes for the higher valorisation of by-products resulting from primary processing processes;
- the waste management in the local context;
- the technological innovation in circular economy.

In Spain the survey reveals the needed of knowledge from the areas:

- the technological innovation in circular economy;
- the measurement of the environmental impact of industrial processes;
- the processes for the higher valorisation of by-products resulting from primary processing processes.

In this case, of knowledge about ***Industrial Processes*** the main options at the level of the four countries are:

- the processes for the higher valorisation of by-products resulting from primary processing processes;
- the technological innovation in circular economy;
- the measurement of the environmental impact of industrial processes.

To rank the options expressed by companies the same point system was used. It is very relevant that the respondents have chosen the capacity of innovation as one of the main qualities for a successful entrepreneurial carrier. The innovation means solid knowledge and the ability to find new, creative solutions. The companies want inspired people, not only good employees.

The next area investigated during the opinion poll is ***Resource Management***. The questionnaire presented three options but it is important to understand which the priorities of the European level are.

The first three options of Romanian companies regarding knowledge in this field are:

- the assessment of the natural resource capacity of the territory: agricultural land, forests, water (rivers, groundwater, etc.);
- the technologies for sustainable exploitation of renewable energy sources (sun, wind, biomass, hydro and geothermal);





- the technologies for sustainable exploitation of the local raw materials (from crops, breeding).

The Italian answers are the following:

- the technologies for sustainable exploitation of renewable energy sources (sun, wind, biomass, hydro and geothermal);
- the technologies for sustainable exploitation of the local raw materials;
- the assessment of the natural resource capacity of the territory: agricultural land, forests, water (rivers, groundwater, etc.).

The options of the Greek respondents go towards:

- knowledge of the technologies for sustainable exploitation of renewable energy sources;
- knowledge of the assessment of the natural resource capacity of the territory;
- knowledge of the technology for sustainable exploitation of the local raw materials.

In Spain the companies have chosen:

- knowledge of the technologies for sustainable exploitation of renewable energy sources;
- knowledge of the technologies for sustainable exploitation of the local raw materials;
- knowledge of the assessment of the natural resource capacity of the territory.

Analysing all these answers, the best positioned options are:

- knowledge of the technologies for sustainable exploitation of renewable energy sources;
- knowledge of the assessment of the natural resource capacity of the territory;
- knowledge of the technologies for sustainable exploitation of the local raw materials.

In the area of Resource Management the companies from the four countries need complete knowledge of assessment and exploitation technologies of the resources in all their forms, material and energy.

The next set of questions proposed during the survey is **Business area**. From the variants of knowledge necessary for the development of a business, will be presented the first three options.

In Romania, the main chosen knowledge is about:

- business management in the frame of circular economy;
- the characteristics of business management in rural areas
- the business plan development and the opportunity investments for circular economy in rural areas, which were selected by an equal number of companies.

The circular economy is a fairly new concept in Romania, and companies are asking for more information on how to run a successful business respecting the new model imposed by its rules. The knowledge about the specific activity and investment opportunities in rural area are

also considered necessary information for the development of the successful economic activities in rural environment.

The companies from Italy had the following options:

- knowledge of the opportunity investments for circular economy in rural areas;
- knowledge of business management in the frame of circular economy;
- knowledge of the characteristics of business management in rural areas.

In this area, the answer options in Italy do not differ much from those in Romania.

On the first positions in the options expressed by Greek companies is the knowledge about:

- the characteristics of business management in rural areas;
- business management in the frame of circular economy;
- the opportunity investments for circular economy in rural areas.

In case of Spain the preferred options are:

- knowledge of the opportunity investments for circular economy in rural areas and knowledge of business plan development are on the same position in the preferences of the companies;
- knowledge of business management in the frame of circular economy and of the opportunity investments for circular economy in rural areas, are both on the second position.

As conclusions, the most frequent options, at the level of the four countries, are:

- knowledge of business management in the frame of circular economy;
- knowledge of the opportunity investments for circular economy in rural areas;
- knowledge of the characteristics of business management in rural areas.

In all countries there are many companies that operate in the rural environment, but the development of a business based on the circular economy model still has some unknown. The specificity of this type of business, the sustainable use of the resources offered by rural area through smart investment still needs knowledge. The project Multitraces has the merit of dispelling some of these uncertainties and stimulating young entrepreneurs towards this field.

The last area of the interrogation proposed by survey is **Legislation**. The knowledge of the laws is mandatory in establishing a solid business. There are four options offered by the questionnaire to the respondents.

From this area, the preferences of Romanian companies are:

- knowledge of the norms and legislation for environmental protection;
- knowledge of the norms and legislation for waste management;
- knowledge of the cost of meeting standards or regulations.

All the other participating countries, Italy, Greece, and Spain have chosen the same option in the same order. The knowledge requested is about:

- norms and legislation for waste management;





- norms and legislation for environmental protection;
- the cost of meeting standards or regulations.

In this condition it is obviously that the final hierarchy of the legislation knowledge is:

- norms and legislation for waste management;
- norms and legislation for environmental protection;
- the cost of meeting standards or regulations.

The conclusion is that the business in rural area under the circular economy principles needs a specialised person in environment and waste legislation.

The survey performed allows the identification of the needed knowledge in five important areas for a business in rural area, for a strong entrepreneurial carrier. The online courses will try to cover these gaps, preparing the participants to face all the challenges of a business in the field.

In this idea a course about circular economy and the systemic design method to identify interested stakeholders and to create a collaborative network will be developed. A second online module will be dedicated to the waste of agro-food industry with knowledge about the by-product valorisation. The resources that rural area offers and can be exploited in a sustainable way will be the goal of the third module. Also here will be described the types of renewable sources available in the rural environment and the most appropriate ways of using them. Finally, the needed knowledge about the business management, developing a business plan, identifying investment opportunities and how to achieve them will be the subject of the last course module.

#### **7.4 Personal skills required for a successful implementation of circular economy in rural areas**

In addition to technical knowledge, the successful development of a business, especially in rural areas, also requires other skills. The rural areas are traditional and new businesses can face resistance. The ability to discuss with people, communication skills, to form a team are very important. Starting from here, in the opinion poll, the companies were asked about the personal qualities (soft skills) they want to have their employees. Based on the answers received, a course will be developed to improve these qualities of future entrepreneurs.

As was presented in the Chapter 3 the Romanian companies have chosen the following skills for their employees:

- Management of an interdisciplinary team with different professionals and backgrounds on CE;
- Organizing activities and assigning tasks;
- Working in a team with different competences in circular economy;
- Observation skills and curiosity to look for innovative solutions;
- Ability to make quick and effective decisions.

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In Italy the soft skills preferred are:

- Working in a team with different competences in circular economy;
- Communication skills- to be able to adapt the speech to the audience in order to disseminate the business activities and projects in the best ways;
- Observation skills and curiosity to look for innovative solutions
- Organizing activities and assigning tasks;
- Flexibility in accepting and solving new tasks arising from the implementation of circular economy.

The questioned companies from Greece indicated as main personal competences:

- Mentoring / coaching skills for newcomers in the circular economy team;
- Flexibility in accepting and solving new tasks arising from the implementation of circular economy;
- Observation skills and curiosity to look for innovative solutions;
- Organizing activities and assigning tasks;
- Managing an interdisciplinary team with different professionals and backgrounds on Circular Economy.

Similar answers were received in Spain:

- Working in a team with different competences in circular economy;
- Ability to make quick and effective decisions;
- Self-motivation in carrying out the tasks
- Observation skills and curiosity to look for innovative solutions;
- Communication skills- to be able to adapt the speech to the audience in order to disseminate the business activities and projects in the best ways.

At the European level the best positioned skills are:

- Working in a team with different competences in circular economy;
- Observation skills and curiosity to look for innovative solutions;
- Managing an interdisciplinary team with different professionals and backgrounds on Circular Economy;
- Organizing activities and assigning tasks;
- Communication skills- to be able to adapt the speech to the audience.

The personal skills required by companies represent in fact other many other internal qualities.

*To work in a team with different competences in CE* means to have respect and appreciation for the opinions of the others, to accept other advices, to give priority to the common interest. Sometimes this can mean to be empathic, to negotiate for avoiding conflicts and knowing how to be objective.



*Observation skills and curiosity to look for innovative solutions* are qualities which can be developed by exercise. Attention to details can be trained and finding solutions is the basic quality of an entrepreneur.

*Managing an interdisciplinary team with different professionals and backgrounds on Circular Economy* means to harmonise not only the different competences but also different personalities. It is necessary to have empathy, negotiation skills, decision-making capacity, trust in yourself, it means to be a leader.

*Organizing activities and assigning tasks* is very tight connected with previous skills. A good manager does not do everything himself, but knows how to delegate tasks. It knows who is the right person for certain tasks and follows their fulfilment.

*Communication skills- to be able to adapt the speech to the audience* is a quality which can be improved by exercise. The communicator has to adapt the way of delivering the message to the audience, has conviction in what he says, because he trusts that the decisions, opinions expressed are correct.

As it follows from what has been presented, the development of a successful business in the rural environment does not only require specialized knowledge but also strong personal qualities.