



# Chapter 2

## Working methodology

### 2.1 Introduction

In the last years the agriculture and food industry became more important considering two aspects: on the one hand the interest of the population for a healthy food, and on the other hand, necessary to feed a growing number of inhabitants of the planet. The preservation of a natural environment, as healthy as possible, a sustainable development, are other reasons that have turned the eyes of entrepreneurs towards agriculture.

The agro-food industry are the economic branches were is urgent the introduction of the circular economy, considering the quantity of food waste, waste that includes raw materials, material and energy resources, human effort.

The study made by Food and Agriculture Organization of the United Nations revealed that “there are losses of about 14% between the harvesting of the raw material and until the final product reaches the consumer's table”. Also, the study made by the same institution highlighted a loss of about 25% of the water utilized for agricultural crops.

Consulting the economic environment to adapt the entrepreneurial training of the students to its demands, to develop the necessary qualities of a successful career represents a proof of the responsibility and adaptability needed by a modern quality education. The research proposed has as its main goal to identify the competences and skills demanded by the labour market for the sustainable development of the rural business, the characteristics needed for a successful entrepreneurship in the framework of circular economy.

The problem is how prepared are the agro-food industry to made the needed steps toward circularity and also do they need specialized staff for this? What type of entrepreneur is wanted on the labour market? What are the necessary competences for the implementation of circular economy in these economic branches? Do they have to possess certain specific interpersonal skills? These are the questions that need answers in order to design the course modules for the students within the Multitraces project.

In the same time the transition to circular economy needs the support of the national regional and local authorities, needs to be sustained by political decisions, by civil society and by the community.

The training of the students in the area of circular economy in such a way as to satisfy the main requirements of both industry and society, it will offer them a greater opening on the labour market, more opportunities for action.

In order to obtain the necessary information the opinion poll was chosen as the working method.



## 2.2 Rules of the participant selection

The training of the students is orientated for applying the circular economy principles in the agro-food sector. This means, as was presented in the previous paragraph, not only the industry but also a wide range of institutions. For this reason it was decided to be consulted not only companies but also local/regional authorities or/and associations.

The contacts created with the occasion of this poll permit a better connexion between universities and economic life, a better orientation of the future academic program according to the labour force demands.

The successful completion of the opinion poll within the Multitarces project was carried out with the following steps:

1. identification of the possible respondents;
2. the first contact, to explain the goal of the survey;
3. the actual sending of the questionnaire.

1. It is recommended as at least a number of 20-25 institutions, companies and associations, to be consulted in the opinion poll. The selection of them was made using the following criteria:

- in case of the companies:
  - to be part of the agro-food industrial branch;
  - to have a diversity of the companies according to the size criteria;
  - to be regional and national distributed.
- In case of other stakeholders:
  - to have a role in the administration of the region;
  - to have activities in the area of circular economy, sustainable development, rural development, renewable energy, environment protection.

2. The connection with respondents was made using different ways:

- face to face meetings at the company headquarters
- invitations and discussions at the university office;
- phone calls;
- emails.

It must be said that an important role in the success of the survey was played by the already existing collaborative relationships. It is known that companies are busy and hardly respond to time-consuming requests.

3. Providing the questionnaire to the respondents was also made in different ways depending of the preferences of the interlocutor:

- as a link to an online version-method preferred by the big companies and association;



- by email as attached document;
- handing directly with the occasion of face to face meetings.

Conducting an opinion poll requires diplomacy in approaching the respondents, persistence in requesting answers and requires a lot of time consumption. According to the experience gained if the answer does not come in 3-4 days, the contact person must be approached again to remind him of the questionnaire.

### **2.3. Presentation of questionnaire**

The main goal of the questionnaires is to identify the needed competences and personal skills which are required for a successful carrier in circular economy. Additionally some other aspects were of interest during the interview.

The questionnaire prepared for companies is structured in the following parts:

#### **1. General data**

This section asks information about the company: the area of activity, the main products, its size and the person which give the answers.

#### **2. Knowledge of circular economy implementation in rural area**

It was of interest to know what information has the companies about the circular economy, if they have taken or intend to take measures that fit into this concept.

##### *1. When did you first hear about Circular Economy?*

This question allows understanding when the concept of CE entered in the four countries and how well it was disseminated. The conclusions could be the starting point of some information actions of the national and regional level.

##### *1. When did you first hear about Circular Economy?*

- 5 or more years ago*
- 2 to 5 years ago*
- last year*
- this is the first time I have heard about it*

##### *2. Which of the following circular economy actions has your company implemented in the past 5 years? Please, tick all that apply.*

The proposed answers of the questions have also the role of inform people about what means CE. It is possible as some actions to have been carried out without being thought of as circular economy actions. In the last years there were many programs which sustained the use

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of the renewable energy and there are companies which implemented such type of installations. The reducing energy consumption is also a permanent concern both in industry and in private homes.

*2. Which of the following circular economy actions has your company implemented in the past 5 years? Please, tick all that apply.*

- Minimise waste by recycling or reusing waste or selling it to another company*
- Re-plan energy usage to minimise consumption*
- Redesign products and services to minimise the use of materials or use recycled materials*
- Re-plan of the way water is used to minimise usage and maximise re-usage*
- Make an analysis of the material and energy flows that the company uses (understanding origin, quantity, ...)*
- Make a Lifecycle Assessment*
- Apply for and/or obtain environmental certifications*
- Use of renewable energy*

The water recirculation within different technological processes it is also a measure which can be applied without important financial effort and the management of the waste is implemented by the large majority of the companies.

*3. Which of the following circular economy actions will be implemented by your company in the next 5 years?*

A list of options is presented to the respondents suggesting what they can do next for the transition to the circular economy. The list is not exhaustive, new actions and initiatives having the opportunity to be presented, similar as in previous box.



3. Which of the following circular economy actions will be implemented by your company in the next 5 years? Please, tick all that apply.

- Minimise waste by recycling or reusing waste or selling it to another company
- Re-plan energy usage to minimise consumption
- Redesign products and services to minimise the use of materials or use recycled materials
- Re-plan of the way water is used to minimise usage and maximise re-usage
- Make an analysis of the material and energy flows that the company uses (understanding origin, quantity, ...)
- Make a Lifecycle Assessment
- Apply for and/or obtain environmental certifications
- Use of renewable energy
- Other

4. Which of the following benefits do you think your company has or will gain from these actions?

The circular economy brings important benefits in the short, medium and long term but the people have to be convinced about this. The companies' hesitations are related to the initial investments that must be made for by-products and waste capitalisation, for a new technological line or renewable energy exploitation. The benefits that will come are both for companies and for the environment.

4. Which of the following benefits do you think your company has or will gain from these actions:

- Fewer greenhouse gas emissions
- Better exploitation of renewable energy sources
- Better management of natural resources (land, water, air and soil)
- Economic growth
- New profit opportunities
- Safeguard supplies
- Demand for new services
- Employment growth
- More resources saved
- Getting to know clients better
- Other \_\_\_\_\_
- None



*5. How would you classify the region your company is based regarding the implementation of Circular Economy in rural areas?*

The question tries to see if there are initiatives at the regional level within the circular economy. The answers suggested cover all possibilities

*5. How would you classify the region your company is based regarding the implementation of Circular Economy in rural areas? Please, tick all that apply.*

- My region is at the forefront of the Circular Economy, implementing many political actions and offering important funding instruments for Circular Economy projects.
- My region is working on the Circular Economy by promoting some actions and some financing instruments for Circular Economy projects.
- My region has just started working on the Circular Economy, but there have not been many actions and financing instruments available yet.
- My region is not implementing Circular Economy.

The transition to the circular economy needs political decisions, adequate legislation, support from the authorities. The regional authorities have to generate this movement in the area to improve the actions and investments in this direction. The results obtained of this question can show how connected are the authorities with the national and European decisions.

*6. Which of the following competences in terms of new employees/collaborators have you added to your company over the past 5 years?*

In order to take measures for CE there are necessary specific competences, trained staff. The investment in human resources could be the best investment that companies can make. The answer of this question show how determined is the company to step towards CE.



6. Which of the following competences in terms of new employees/collaborators have you added to your company over the past 5 years? Please tick all that apply.

- Economics / finance
- Sales / marketing
- Communication
- Lawful competencies (competences in the field of legislation)
- ICT / Computer science
- Energy management / renewable energy
- Environmental engineering
- Production engineering
- Product design
- Service design
- Social sciences and humanities
- Biotechnology and natural sciences
- Agronomy
- Other \_\_\_\_\_

The circular economy was launched in 2015, there was enough time to rethink the staff structure, introduce new members or specialists to improve the manufacturing chain, to reuse waste and to have a more nature-friendly production.

7. Do you think your company needs specialized professionals / experts to support the implementation of Circular Economy models?

This question is connected with previous one, giving information in the same direction - do companies understand the need for specialized staff or not?

7. Do you think your company needs specialized professionals / experts to support the implementation of Circular Economy models?

- Yes
- No

8. If yes, in which fields?

The concept of circular economy embraces a wide range of aspects, ranging from the automation and digitisation of production, the valorisation of waste, innovation and the creation of new products, to aspects of environmental protection and legislation in the domain. So the need for specialists is great and they can be from different areas, but the first option will always be for competent staff from the company's main field of activity.



8. If yes, in which fields? Please tick all that apply.

- Economics / finance*
- Sales / marketing*
- Communication*
- Lawful competencies (competences in the field of legislation)*
- ICT / Computer science*
- Energy management / renewable energy*
- Environmental engineering*
- Production engineering*
- Product design*
- Service design*
- Social sciences and humanities*
- Biotechnology and natural sciences*
- Agronomy*
- Other \_\_\_\_\_*

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

The objective of the Multitraces project is to offer to young people a multidisciplinary training in the circular economy applied to rural businesses. In order to define the structure of the courses that will be developed within the project, the consulting of the economic environment is absolutely necessary.

It is important for a specialist in circular economy to have specific knowledge in different fields: way of thinking, industrial processes, resource management, business and legislation, to name just a few.

These part of the of the questionnaire offers a large range of content from which the respondent, chosen from agro-food branch as previous was mentioned, have to select the area and the specific competences needed to develop their activity towards circular economy in a sustainable way.

There are proposed five areas of specialisation, Circular Economy, Industrial Processes, Resource Management, Business and Legislation, for each of them a list of specific knowledge being suggested.





*Circular Economy area - knowledge of:*

- the regional supply chains of the local rural economy
- the methodologies to enhance the sustainable development of rural territories towards Circular Economy
- the mapping of the local potential actors and stakeholders for creating new collaborations (for example based on the by-product management).
- the communication techniques to facilitate project dissemination and the understanding of the system complexity
- the IT solutions for circular economy (block chain, resource mapping, etc.)
- the impact of economic decision on social sustainability
- others \_\_\_\_\_

*Industrial Processes area - knowledge of:*

- the processes for the higher valorisation of by-products resulting from primary processing processes
- the waste management in the local context
- the measurement of the environmental impact of industrial processes
- the technological innovation in circular economy
- others \_\_\_\_\_

*Resource Management area - knowledge of:*

- 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)
- other \_\_\_\_\_

*Business area - knowledge of:*

- the characteristics of business management in rural areas
- Business Management in the frame of circular economy
- the new circular business models in rural areas
- the business plan development
- the marketing plan design
- the opportunity investments for circular economy in rural areas
- others \_\_\_\_\_

*Legislation area - knowledge of:*

- norms and legislation for environmental protection
- norms and legislation for waste management
- the cost of meeting standards or regulations
- other \_\_\_\_\_



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

The quality of being a good entrepreneur requires, in addition to good professional competences, the ability to work with people. Personal qualities can transform a good professional into a leader who enlivens the team and causes them to get involved for the fulfilment of the common objective.

The Multitraces project wants to form those interpersonal qualities that can transform the students into future successful entrepreneurs, whether they develop their own business or are employed by another company.

- Managing an interdisciplinary team with different professionals and backgrounds on Circular Economy
- Working in a team with different competences in circular economy
- Mentoring / coaching skills for newcomers in the circular economy team
- Organizing activities and assigning tasks
- Negotiation and conflict resolution skills to deal with partners and stakeholders
- 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
- Dealing with changes in business activities
- Self-motivation in carrying out the tasks
- Ability to work under pressure and time management
- Ability to make quick and effective decisions.
- Flexibility in accepting and solving new tasks arising from the implementation of circular economy.
- Digital competences
- Other \_\_\_\_\_

The questionnaire for the associations and local regional authorities contain the same sections, adapted to their type of activity. So, the section concerning

All information collected in the feedback survey will be used to define the content of the course modules. The development of professional skills in the sphere of the circular economy applied to economic activities specific to the rural environment as well as the training of interpersonal skills, soft skills are necessary for students to perform as successful entrepreneurs.