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# Circular Economy Management Framework

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● consortium

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<b>Abstract</b>	The Circular Economy Management Framework takes into consideration the results of the report on the state of art and needs of Circular Economy Management in the 6 European Countries that are part of CEMforSMEs (Portugal, Italy, Spain, Greece, Cyprus and Belgium), analyzes them and matches them with the EU's EntreComp Framework. It defines required entrepreneurial skills for CEMs.
<b>Keywords</b>	Circular Economy, Manager, SMEs, Agrifood Sector, Competences, EntreComp, European Perspective

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## Index of Contents

Table of Abbreviations and Acronyms .....	5
1. Introduction .....	6
2. Background Information.....	7
2.1 The CEMforSMEs Project .....	7
2.2 The European Entrepreneurship Competence Framework (EntreComp).....	8
2.3 Results and conclusions of the need analysis report developed in the CEMforSMEs project.....	10
3. Connecting the Analysis Report with the EntreComp Model .....	12
3.1 Tips for application in practice.....	13
4. Additional information to keep in consideration for correct application of the framework .....	16
4.1 Overview of current legislative framework: Standard/institutional conditions for practicing the profession/specialty .....	16
4.2 Dynamics of the profession/specialty and growth trends/sectors in the labour market: 23 Type of business where the profession/ specialty profession appears .....	23
4.3 Current training opportunities and education level of the relevant professionals in the partner countries (NQF/EQF).....	29
5. References.....	35

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Updated	22/10/2023	Alexandros Koukovinis	Added Content
Final	10/06/2024	Federico Gaviano	Cut Content and updated format

## Table of Abbreviations and Acronyms

Abreivation	Meaning
<b>MEUS</b>	Markeut Skills SL
<b>IED</b>	Institute for Entrepreneurship Development
<b>CEMforSMEs</b>	Circular Economy Manager for SMEs active in the Agri-food sector
<b>CEM</b>	Circular Economy Manager
<b>SME</b>	Small and Medium Enterprise
<b>EntreComp Framework</b>	European Entrepreneurship Competence Framework
<b>NQF</b>	National Qualifications Framework
<b>EQF</b>	European Qualifications Framework

## 1. Introduction

The goal of the present document (named hereby after the “CEM Framework”) is to define the set of necessary entrepreneurial skills to become a Circular Economy Manager.

The concept is going to be developed further throughout the development of the Work Package 2 of the project, which aims to define a set profile and Curriculum for the CEM.

The background of the CEM framework is based upon two main references:

- The European Entrepreneurship Competence Framework (EntreComp)
- The results and the conclusions of the need analysis report developed in the previous phase of the CEMforSMEs project (Task A2.1 of the project)

The analysis will therefore start from these two main pillars in order to develop further from them.

## 2. Background Information

### 2.1 The CEMforSMEs Project

Every year the Global Footprint Network calculates Earth Overshoot Day – the day of the year on which we have used up all the resources the Earth can naturally provide in one year. Remarkably, in 2022, this day was July 28th, the earliest it has ever been. That means that we consume 4 months' worth of natural resources more than we should in a year.

The EU and many European countries have already prepared or are preparing a plan for the switch from a linear to a circular economy. The main argument for a circular economy is its power to decrease our depletion of raw materials and therefore lead to a more sustainable consumption rate. A Circular Economy is both an opportunity and a need for Europe. It can play a catalytic role for productive reconstruction and has a clear regional dimension. Circular Economy is a model that can lead to the social welfare of the people connected with it, as well as to society, through the various benefits that its implementation brings (e.g., less waste, more job positions, less use of plastic, etc.). Furthermore, it is predicted that in the EU alone, up to 18 million workers will need reskilling as we shift towards a low-carbon, circular economy ( EU Commission, 2017) and VET is still a highly applicable educational sector and can offer high-quality training and career guidance, meet the demand for multidisciplinary CE education and provide the opportunity to shape a new generation of employees with the knowledge and skills needed to kickstart a new economic model based on circular economy principles.

With this in mind, the CEMforSMEs project, financed by the Erasmus + programme under the VET sector, considers that even though the need for a circular economy is imminent, the world of businesses and SMEs lack the knowledge and the skills required in order to be an integral part of it. The project proposes the design of the Circular Economy Manager profile, which will contribute to the transition of SMEs from the linear to Circular Economy.

Even though the project's focus is on the Food and Agriculture sector, the objective is that the profile which will derive can be adapted and applied to a variety of sectors. The Circular Economy Manager profile is based on a needs analysis carried out by the partnership for the definition of the learning outcomes, and the EntreComp framework for the definition of the competencies needed to fit in the profile. Their combination will lead to the development of a specialized training curriculum, including modules for theoretical study and mobile applications for a gamified,

practical experience. Ultimately, the project certification process, after the piloting phase, will ensure that the CEM profile is recognized at the EU level.

## 2.2 The European Entrepreneurship Competence Framework (EntreComp)

The EntreComp model is the reference framework developed by the European Commission to explain what is meant by an Entrepreneurial Mindset.

It has been thought with the idea in mind that such a model is needed to impact the world of today making individuals, teams and organizations able to act upon opportunities and ideas, to work with others and to manage dynamic careers and shape the future for the common good.

This idea needs to be implemented in every field of life, positively affecting today's societies at different levels, and clearly represents a starting point for every person and/or organization that wants to act upon improving, managing and redesigning a specific area, such as the Agri-food sector where the CEMforSMEs project wants to have an impact.

For this reason, the EC has designed a common reference framework that identifies 15 competences in three key areas that describe what it means to be entrepreneurial, offering a comprehensive description of the knowledge, skills and attitudes that people need to be entrepreneurial and create financial, cultural or social value for others.

The Entrecomp defines entrepreneurship as the capacity to act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural or social.

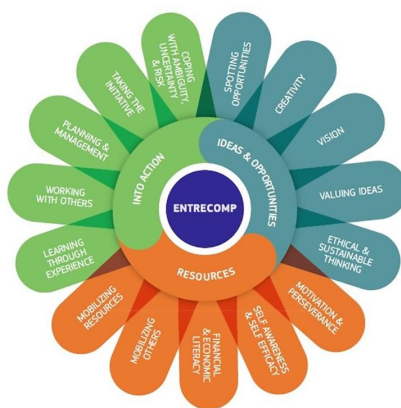


Figure 1: The Entrecomp Model

The three key areas are related to the initial setting of an entrepreneurial project or venture, the competences necessary to work effectively with oneself, other human beings and material resources, and the practical implementation of an entrepreneurial idea.

They are listed as follows:

- Ideas & Opportunities
- Resources
- Into Action



Each area contains a set of 5 related competences, making up the total of 15 which are creating, according to the model, an entrepreneurial mindset.

The competences are also further explored and divided in “threads” (60 in total), describing and explaining what the specific competence means in practice.

For example “Creativity” means being curious and open, developing ideas, defining problems, defining values and being innovative.

The complete list of the threads, along with further exploration, can be found in the EntreComp Into Action – User Guide.

Each competence can be mastered at 8 different progression levels, from Foundation to Expert, and the framework lists a total of 442 learning outcomes that can be reached in the areas relevant to entrepreneurial mindset.

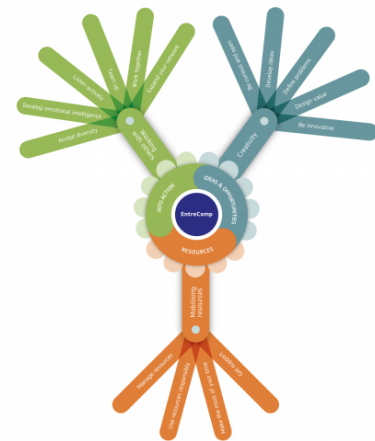


Figure 2: Competences and Threads

Further information about the EntreComp model can be found on the official website of the EC [here](#).

The use that the CEMforSMEs project can make of the EntreComp model is well aligned to the ones that are suggested by the framework, as it can support:

- understanding how existing activities contribute to entrepreneurial competences
- helping entrepreneurs (or managers, in our case, ndr) map their own entrepreneurial competences
- designing new training or activities to support business creation or business growth mapped to EntreComp competences.

After careful examination of the EntreComp and the needs analysis we came up with several skills and responsibilities, as well as training needs, that form the core of our project’s framework (that is analysed in details in the following chapter).

Therefore, we are now going to explore the results of the needs analysis report previously developed in the CEMforSMEs project, to be able to match it with the EntreComp.

## 2.3 Results and conclusions of the need analysis report developed in the CEMforSMEs project

The need analysis report conducted within the CEMforSMEs project combines national researches made in the 6 countries of the partnership, both with the methods of desk research and field interviews to relevant stakeholders.

The research focused on understanding the current situation related with the concept of circular economy especially in the Agri-Food sector, the existence of figures dedicated to managing these processes, and the views of the relevant stakeholders from the field about these concepts.

More in depth, the interviews conducted worked on assessing the needs of the sector to improve its circular economy management, current strengths and weaknesses of the system in their country, and necessary competences a person should possess in order to assume the role of CEM within an Agri-Food sector company.

According to the report, based on the work done in the different countries involved, the Circular Economy Manager should be a young and innovative entrepreneurial person with a sense of responsibility and environmental sensitivity, holding a combination of technical knowledge, business acumen and soft skills.

The main responsibilities identified for the role of a CEM can be listed as follows:

- Designing and implementing strategies and project to bring positive change in their company
- Analyze the impact done by the actions of the company and monitor it and evaluate it against the actions done to improve
- Reduce waste of resources and manage it where it still happens
- Research and find opportunities for improvement and new actions, partnerships and programs to improve the circular economy management of the company
- Keep relationships with different stakeholders such as supply chain, customers, business partners, authorities
- Deal with internal training of employees and staff to be informed about the topic of circular economy, the actions done and their role in them
- Comply with local and international relevant laws and regulations as well as general principles connected with Circular Economy
- Maintain the profit of the company and increase its competitiveness in broader markets and ensure the creation of more jobs

- Disseminate the results of the actions done with campaigns and other relevant actions to make the benefits known to a broader public

With this in mind, the set of **competences** that have been identified as fundamental for a Circular Economy Manager in the Agri-Food sector are:

- Analytical and problem solving skills
- Strategic Vision and Thinking
- Communication skills
- Teamwork
- Leadership and Human Resources Management
- Research, Innovation and Creativity
- Business awareness
- Environmental Awareness and Sustainability skills
- Project Management
- Facilitation and training skills
- Monitoring and Assessment skills

### 3. Connecting the Analysis Report with the EntreComp Model

When checking the analysis report, we can notice there are several competences which are in common with the EntreComp model. Using the framework created by the European Commission as a basis, therefore, we can say that the competences needed by the circular economy manager are the following ones, broken down also in the threads related to them following the EntreComp:

- IDEAS & OPPORTUNITIES
  - Spotting Opportunities
    - Identify, create and seize opportunities
    - Analyse the context
  - Creativity
    - Develop ideas
    - Define problems
    - Design value
    - Be innovative
  - Vision
    - Imagine
    - Think strategically
    - Guide action
  - Valuing Ideas
    - Share and protect ideas
  - Ethical and Sustainable Thinking
    - Think sustainably
    - Assess impact
    - Be accountable
- RESOURCES
  - Mobilising Resources
    - Manage resources (material and non material)
    - Use resources responsibly

- Get support
- Financial & Economic Literacy
  - Understand economic and financial concepts
  - Budget
  - Find Funding
- Mobilising Others
  - Inspire and get inspired
  - Persuade
  - Communicate effectively
  - Use media effectively
- INTO ACTION
  - Taking the Initiative
    - Take responsibility
    - Take action
  - Planning & Management
    - Plan and organize
    - Develop sustainable business plans
    - Monitor your progress
  - Working with others
    - Team up
    - Work together
    - Expand your network

This set of threads of the EntreComp represent the best connection for the set of entrepreneurial activities object of our project, identified directly by the consortium through their research as the main ones should reflect the needs of the local communities regarding the figure of the Circular Economy Manager.

### 3.1 Tips for application in practice

1. **Assessment and Gap Analysis:** Organizations can assess the skills and competencies of their current workforce to identify gaps in the CEM framework. This can be done through surveys, interviews, or self-assessments.

2. **Training and Development:** Once gaps are identified, organizations can design training programs or provide access to external courses and resources. The training should be tailored to individual needs and can cover areas like sustainability, circular economy principles, and advanced data analytics.
3. **On-the-Job Learning:** CEMs can learn by working on circular economy projects within the organization. They can start with smaller initiatives and gradually take on more significant responsibilities as they gain experience.
4. **Networking and Collaboration:** CEMs should actively participate in circular economy networks and collaborate with other organizations and professionals. This can help them stay updated on trends and share best practices.
5. **Reporting and Performance Evaluation:** Organizations should establish clear key performance indicators (KPIs) related to circular economy initiatives. CEMs should regularly report on progress and impact, using advanced reporting frameworks when applicable.
6. **Continuous Improvement:** The framework should be dynamic, and organizations should encourage CEMs to continuously develop their skills. Regular feedback, mentoring, and peer learning can support ongoing improvement.
7. **Measuring Impact:** Organizations should assess the impact of their circular economy initiatives, considering environmental, social, and economic factors. This data can guide future strategies and investments.
8. **Stakeholder Engagement:** CEMs should engage with a wide range of stakeholders, including suppliers, customers, regulatory bodies, and local communities. Building strong relationships can open up opportunities for collaboration and advocacy.
9. **Policy Influence:** Advanced CEMs should actively participate in shaping policies and regulations related to the circular economy. They can contribute with their expertise to influence favorable outcomes.
10. **Innovation and Experimentation:** CEMs should encourage innovation within their organizations, exploring new circular business models, technologies, and partnerships to drive sustainability and circularity.

In summary, the CEM framework provides a structured path for skill development and practical application. Organizations can use this framework to build a capable CEM team, and CEMs can



follow this path to enhance their expertise and contribute effectively to the circular economy transition. It's essential to recognize that the circular economy is an evolving field, and continuous learning and adaptation are key to success.

## 4. Additional information to keep in consideration for correct application of the framework

### 4.1 Overview of current legislative framework: Standard/institutional conditions for practicing the profession/specialty

#### *Portugal*

Portugal, like many other countries, has been increasingly focusing on the concept of the circular economy to promote sustainability and resource efficiency. Because circular economy managers are a relatively new and evolving role, the institutional conditions are a combination of different national laws and European Standards. The acknowledgment of professional credentials enabling the practice of regulated occupations by individuals holding qualifications acquired in different EU Member States adheres to the legal framework established under Law No. 9/2009, dated March 4, which, in its present form, has incorporated the provisions of Directive 2005/36/EC from the European Parliament and the Council, dated September 7, 2005, governing the recognition of professional qualifications, as modified by Directive 2013/55/EU from the European Parliament and the Council, dated November 20, 2013.

The Portuguese National Action Plan for the Circular Economy 2018–2020 (PAEC) was endorsed by the Portuguese Government in December 2017 (as per Resolution of the Council of Ministers No. 190-A/2017 on November 23), with subsequent modifications made through Resolution of the Council of Ministers No. 108/2019 on June 6. The PAEC, initially set for the 2018–2020 timeframe, has been in progress during recent years. Currently, preparations are underway to revise the plan to align it with the new challenges of the circular economy. The PAEC's vision for Portugal in 2050, was conceived to stimulate and advance the nation's growth.

While there may not be a specific degree dedicated to Circular Economy Management, a strong educational foundation in sustainability, environmental science, business management, or related fields can be beneficial.

Given the diverse set of skills and competencies required for a Circular Economy Manager in Portugal, there are a variety of training needs that they may have. The training needs of a Circular Economy Manager in Portugal will depend on their individual background, role, and organisation. However, a strong foundation in circular economy principles, sustainability, project management, and business acumen can provide a strong foundation for success. For being able to practise



agriculture, the law 102/2009 in agriculture applies to all branches of activity, in the private, cooperative and social sector.

Portuguese Association of Circular Economy (Associação da Economia Circular Portuguesa), can help to stay informed about the latest developments and connect with others in the field.

The general belief is that, in Portugal, CE managers may need further training on circular economy principles and practices, project management, data analysis, communication, and stakeholder management skills to be effective in their roles.

### *Spain*

A thorough understanding of Spain's circular economy landscape necessitates an understanding of the institutional and legal context.

As a member of the European Union (EU), the Kingdom of Spain functions in accordance with the rules and directives of the EU, which cover a range of topics related to the circular economy. Spain's national circular economy policies are heavily influenced by the EU Circular Economy Action Plan, which is a pillar of EU policy[1]. As a result, Spain must align its national laws with these EU-level initiatives in order to advance a circular and sustainable economic model.

Spain has created a strong legal system that addresses recycling, waste management, and environmental preservation[2]. This domestic legislation has a big impact on how the circular economy is portrayed in the nation. These legislative tools give institutions and companies that want to run their operations in accordance with the circular economy guidelines as well as requirements. E.g. BOE-A-2022-5809 Ley 7/2022, de 8 de abril, de residuos y suelos contaminados para una economía circular. (n.d.). <https://www.boe.es/buscar/doc.php?id=BOE-A-2022-5809>

Furthermore, it's critical to recognize the decentralized character of Spain's legal and regulatory system, which gives regional and local governments considerable discretion over a range of issues, including environmental regulations. Local CEMs operating in Spain must carefully consider regional nuances due to variations in local regulations and guidelines.

Because of Spain's aggressive efforts to transition to a circular economy, it is likely that the country will continue to create national policies, incentives, and initiatives that Circular Economy Managers will need to keep an eye on and support. Major funding for projects involving the circular economy has been committed by Spain. Over €400 million has been set aside by Spain's Ministry for the Ecological Transition and the Demographic Challenge for waste management and circular economy promotion projects as of 2022.

The position of Circular Economy Manager in Spain should not be sector-specific and could apply to various industries, including the crucial agri-food sector. In Spain, Circular Economy Managers would have the opportunity to work with private sector companies and public institutions, which often take the lead in promoting circular economy programmes.

Entities, organizations, and associations devoted to environmental sustainability, the advancement of the circular economy, and the conservation of natural resources comprise Spain's institutional landscape. These organizations function as information hubs, social media hubs, and archives of the best circular economy practices. Managers involved in the circular economy could benefit from these institutional resources to remain up to date on news, research, and developments that are unique to their industry.

Specialized courses and programs that emphasize environmental stewardship, sustainable practices, and the principles of the circular economy are offered by Spanish educational institutions and vocational training centres. Circular Economy Managers now have a structured way to advance their knowledge and skills thanks to these academic opportunities.

The Spanish government regularly offers grants, subsidies, and funding opportunities to support circular economy projects, often in collaboration with EU-funded initiatives. In 2021 the Spanish Ministry of Industry, Trade and Tourism set aside €53 million in 2021 to fund circular economy initiatives across the country. Circular economy managers should be proactive in seeking these financial incentives to support the implementation of their projects as stewards of sustainable practices. Spanish government funding for initiatives that promote the circular economy.

Building a network of stakeholders who are committed to advancing the goals of the circular economy and forming vital partnerships require cooperation with chambers of commerce, industry associations, and local and regional environmental agencies. These partnerships strengthen the framework of assistance that Circular Economy Managers have access to and help to further integrate circular principles into different economic sectors.

CEM should interact with customers, companies, and communities proactively. Through promoting the advantages of the circular economy, they can encourage engagement in sustainable practices and impact changes in behavior.

Spanish CEM ought to look into the possibility of earning accreditations or certifications related to the field. These certifications can boost their reputation in the workplace and give them recognition in the framework of Spain's circular economy.

## *Cyprus*

To successfully apply the Circular Economy Manager (CEM) framework in Cyprus, it is important to consider the existing legislative framework and any standard or institutional conditions that may apply to the practice of this profession. This information is crucial for ensuring that CEMs operate within the legal and regulatory boundaries of the country. Cyprus has a set of environmental regulations aimed at promoting sustainability and environmental protection. These regulations may impact various aspects of circular economy practices, such as waste management, resource optimization, and sustainability reporting. As Cyprus has specific laws governing waste management, CEMs should be aware of these laws to ensure proper waste reduction, recycling, and disposal practices. While there may not be specific legislation exclusively focused on circular economy management, various national and European initiatives promote circular practices. CEMs should stay informed about these initiatives to align their strategies with national and EU goals.

CEMs in Cyprus may benefit from joining professional associations or organisations related to sustainability, environmental management, or circular economy practices.

These associations often provide guidance, networking opportunities, and resources for professionals in the field. The field of circular economy is continuously evolving. CEMs should consider pursuing ongoing education and professional development opportunities to stay current with the latest trends, technologies, and best practices. This may include workshops, seminars, and certifications in related areas. Moreover, they should adhere to ethical business practices and principles of corporate social responsibility. These aspects are often emphasised by businesses and organisations committed to sustainability. Moreover, Cyprus has unique environmental and economic characteristics that may influence the practice of circular economy management. CEMs should be attuned to local and regional conditions and collaborate with local stakeholders.

In conclusion, for CEMs in Cyprus, a thorough understanding of the legislative framework, environmental regulations, and standard or institutional conditions is essential for the successful application of the CEM framework. Adhering to legal requirements and staying updated on industry-specific standards will ensure that CEMs contribute effectively to the transition towards a circular economy in Cyprus while maintaining compliance with local and international regulations. Additionally, ongoing professional development and a commitment to ethical and sustainable practices are crucial for CEMs to excel in their role.

## *Belgium*

Circular Economy Managers in Belgium must operate within the framework of existing environmental and sustainability regulations. The institutional and policy framework for waste management and the circular economy in Belgium is based on a combination of EU legislation,

national legislation, regional legislation, and voluntary agreements between industries and governments

In addition, Belgium has put in place ambitious plans and objectives for the circular economy, which have been linked to economic development plans in all three regions.

The New Circular Economy Action Plan is a progressive roll-out of a sustainable product policy framework, with actions on three main building blocks: (1) product design, (2) empowering consumers and public buyers, and (3) greater circularity in production processes.

On 10 March 2016, the Government of the Brussels-Capital Region adopted the Brussels Regional Program for a Circular Economy 2016 – 2020 (BRPCE), with a budget of €12.8 million for the year 2016. The (BRPCE) aims to identify and overcome legal and administrative barriers to boost the circular economy in Brussels through the smart and positive adaptation of relevant rules and models while maintaining the same level of protection. The program also aims to create new legal constraints and economic incentives that encourage re-utilization and recycling while discouraging incineration unless for residual fractions.

The 'New Circular Economy Action Plan, for a cleaner and more competitive Europe' was introduced on 11 March 2020, (building on the actions implemented from 2015 (with the introduction of the 1st Circular Economy Action Plan), it is based on the following main strands: the progressive roll-out of a sustainable product policy framework, with actions on three main building blocks: 1. product design 2. empowering consumers and public buyers and 3. greater circularity in production processes. The Commission aimed to propose a legislative initiative to widen the Ecodesign Directive beyond energy-related products, and to establish sustainability principles.

In May 2023, the Commission published a revised circular economy monitoring framework, aimed at better tracking progress in the transition to a circular economy in the EU.

In July 2023, the Commission put forward a proposal for a revision of the Waste Framework Directive about textile waste. In the same Directive, Member States would also have to ensure that by the end of 2030, food waste would be reduced by 10% in processing and manufacturing, and by 30% per capita, in retail, restaurants and food services, and in households (targets compared to 2020).

The federal government of Belgium and the three autonomous regions -Brussels-Capital, Wallonia and Flanders- are all aligned in this effort.

Belgium appears to have already met the 2020 recycling targets of the European Union (EU). Brussels-Capital and Flanders have been pioneers among OECD regions for their circular economy initiatives. Wallonia has addressed the circular economy in its recent waste and resources plan and other initiatives.

## *Greece*

The legislative framework and standard conditions for practising the profession of a circular economy manager in Greece are governed by a combination of national laws, European Union directives, and industry standards. The field of circular economy management has gained increasing importance in Greece, as the country, like many others globally, focuses on sustainable development and environmental conservation.

In Greece, the legislative framework for circular economy practices is primarily guided by European Union directives and regulations. The European Union has been at the forefront of promoting circular economy principles through various initiatives and policies. The Circular Economy Action Plan, adopted by the European Commission, outlines strategies to promote a circular economy, including sustainable product design, waste prevention, and recycling.

At the national level, Greece has incorporated EU directives into its legal framework. The country has laws and regulations related to waste management, environmental protection, and sustainable development. These laws set the groundwork for circular economy practices and provide a legal basis for professionals, including circular economy managers, to operate within the defined parameters of sustainability and environmental conservation.

The standard or institutional conditions for practising the profession of a circular economy manager in Greece are likely to include educational qualifications, professional certifications, and adherence to specific industry standards.

In conclusion, the profession of a circular economy manager in Greece operates within a well-defined legislative framework that aligns with European Union directives and national regulations related to environmental conservation and sustainable development. The standard or institutional conditions for practising this profession typically include educational qualifications, professional certifications, adherence to environmental regulations, practical experience, and a commitment to ethical practices. As the field of circular economy management continues to evolve, staying

informed about changes in legislation and industry standards is crucial for professionals working in this dynamic and impactful profession.

Italy

The definition of SMEs in Italy follows the European Recommendation n.2003/361/Ce setting the limits to be considered SMEs in 250 employees and an annual turnover not exceeding 50 million € or an annual balance sheet of maximum 43 million €.

Regarding Circular Economy, the Ministry for Business & Made in Italy together with the Ministry for Environment and Protection of Territory and Sea adopted in November 2017 the document “Verso un modello di Economia circolare in Italia” (Towards a model of Circular Economy in Italy). The document is the base to set up an action plan based on transition of enterprises (especially SMEs) to circular economy in Italy, concentrating on the technological innovation of the production systems, and the change of the actual governance model. In that sense, a revision of the Environment Codex (law decree 152/2006) to review the concept of “End of Waste” and the Extended Producer Responsibility.

With the Decreto MITE n.259 of 24/06/2022, the Italian Ministry for the Ecological Transition approved the “National Strategy for Circular Economy”, containing elements on Transformation of Productive models, Role of Consumers, Waste Management, Digitalization and Training necessary to work towards the reaching of the objectives of Climate Neutrality. The Ministry of Economic Development financed already funds for SMEs wanting to invest on research or development/improvement of products and services towards reduction of production of waste and circular use of the resources.

In this frame, it appears clear that there is a need for Italian SMEs to have a dedicated manager capable of dealing with all the related processes, with the necessary skills to be able to follow the ongoing transformations. However, there is no particular mention of it in the official strategies, nor there is any obligation for SMEs to indicate such figure, and the filling of a Balance of Environmental Sustainability is foreseen as obligatory by 2026 only for the enterprises with over 250 employees and a turnover of over 50 million €.

In order to act as a manager of a PMI there are no particular minimum education requirements stated by the Italian system. However, a number of Master degree curricula (even specialized in ecological transition or circular economy) are available in different universities and technical schools to provide the best fit for this position, which is considered to be in high request in the near future.

## 4.2 Dynamics of the profession/specialty and growth trends/sectors in the labour market:

### Type of business where the profession/ specialty profession appears

#### *Portugal*

As there is a shift in Portuguese enterprises that seek to adopt circular business models, the role of CE Managers is becoming increasingly important. CE Managers are responsible for leading the transition towards circular economy practices within organisations, promoting eco-design, minimising waste, and maximising the value of resources. Their primary task is to drive sustainable innovation, improve resource efficiency, and reduce environmental impacts, while creating economic value.

The Portuguese National Action Plan for the Circular Economy 2018–2020 (PAEC) operated at three distinct levels: the national level (macro), the sectoral level (meso), and the regional level (micro). At the national level, it was grounded in the key principles of the 2015 EU Circular Economy Action Plan and encompassed seven primary areas for policy direction: i) design and reusability; ii) market dynamics; iii) educational initiatives; iv) addressing food waste; v) management of waste and by-products; vi) responsible management of water and nutrients; and vii) the promotion of research and innovation. Each of these areas had specific objectives defined. On the sectoral level, the focus was directed towards industries that displayed either high resource consumption, such as the construction sector, or were heavily reliant on exports, for instance, textiles and tourism. Additionally, the sectoral level included domains with a significant influence on the domestic market, such as consumer goods and public procurement, as well as distribution and retail.

Lastly, the regional level was designed to complement national efforts by encouraging and guiding regional coordination and development commissions to establish their unique circular economy agendas. These agendas were rooted in the distinct regional, socio-economic context and environmental characteristics. Five regional agendas for the circular economy were devised under the umbrella of the PAEC, covering mainland Portugal (North, Central, Lisbon and Tagus Valley, Alentejo, and Algarve), along with a separate agenda for the Autonomous Region of Madeira. The primary objective of these agendas was to tailor the national objectives and measures to the specific context of each region, supported by comprehensive regional characterization studies that assessed economic circularity. Furthermore, these agendas aimed



to promote collaborative networks within each region, and the responsibility for developing them rested with regional authorities, who worked in coordination with the Portuguese government.

## Spain

In Spain's agri-food industry, the Circular Economy Manager (CEM) profile is very beneficial. Due to a number of factors, the Spanish market is currently in a crucial stage for the implementation of this profile. First off, the agri-food sector is becoming more conscious of the need to implement more environmentally friendly procedures and cut down on food waste. Professionals who can spearhead this shift are in greater demand as a result of the circular economy and waste reduction guidelines set by the European Union and Spanish legislation. Between 2020 and 2022, there was a 25% increase in job openings related to circular economy positions, according to Spain's Ministry of Labor and Social Economy. The data indicates an increasing need for experts in the field of circular economy.

Companies interested in incorporating CEM into their teams abound in the Spanish market. Agri-food companies recognize the benefits of adopting circular practices, such as reduced costs, increased resource efficiency and a more positive corporate image. Large companies, agricultural cooperatives and food producers are some examples of companies actively seeking CEM to guide their circular economy strategies. According to a 2021 study conducted by the Spanish Chamber of Commerce, 70% of small agri-food companies cited a lack of experience and understanding when it comes to implementing circular practices as the main barrier. This highlights how important CEMs are, especially for smaller companies. The same study showed the financial difficulties faced by SMEs, with more than 60% of them expressing concern about the initial investment required to move to circular practices.

In terms of roles that can lead to a Circular Economy Manager in the Agri-food sector, profiles such as Sustainability Manager, Quality Manager or Agricultural Engineer can evolve towards this function. These professionals already have a solid understanding of the sector and can learn about circular economy and sustainable resource management.

However, small and medium-sized enterprises (SMEs) in the Spanish market may face certain challenges in incorporating the CEM profile. One of the most significant drawbacks is the cost associated with hiring a professional specialized in circular economy. SMEs may have more limited budgets compared to large companies and often see the investment in a CEM as an additional expense.

Despite these challenges, SMEs in the Agri-food sector can benefit greatly from adopting the Circular Economy Manager. These benefits include increased efficiency in the use of resources, which can lead to reduced operating costs. In addition, the implementation of circular practices can open up new market opportunities and enhance the company's reputation, which could translate into increased demand for products and a competitive advantage in a market



increasingly focused on sustainability. A survey by the Spanish Circular Economy Association found that 87% of Agri-food companies implementing circular economy practices reported cost savings averaging 12% over a two-year period.

It can be stated that the Circular Economy Manager profile is highly valuable in the Agri-food sector in Spain, and the market is ripe for implementation. Numerous companies are interested in hiring these professionals, and although SMEs may face financial challenges, the long-term benefits of the circular economy are significant and can boost the competitiveness and sustainability of the sector.

### *Cyprus*

Cyprus, like other European Union (EU) member states, is actively incorporating EU directives and regulations related to the circular economy. The government has been introducing policies and initiatives that promote waste reduction, recycling, and sustainable resource management. CEMs are expected to play a crucial role in ensuring compliance with these regulations and implementing circular strategies. Many businesses in Cyprus, across various sectors, are recognizing the benefits of circular economy principles, such as cost savings, reduced environmental impact, and enhanced reputation. As a result, there is a growing demand for CEMs who can help organizations transition to circular practices. Circular economy practices often involve innovative technologies and solutions. CEMs are expected to stay updated on the latest advancements and integrate them into their strategies. This includes technologies for waste reduction, recycling, and resource optimization. While CEMs can be found in a variety of sectors, some industries in Cyprus show significant potential for circular economy growth. These sectors include agri-food, tourism, construction, and renewable energy.

As regards the types of Businesses where the Profession/Specialty Appears are: The agri-food sector is one of the primary areas where CEMs are increasingly in demand. Circular practices in agriculture and food production involve reducing waste, improving resource efficiency, and adopting sustainable farming and processing methods. Waste management companies and recycling facilities often employ CEMs to optimize their operations, reduce waste, and explore new recycling technologies. Companies involved in renewable energy, such as solar and wind power, employ CEMs to implement circular principles in energy production and distribution, including recycling of components and materials. The construction sector is exploring circular practices by reusing and recycling building materials, reducing construction waste, and designing sustainable buildings. CEMs play a role in these initiatives. Sustainable tourism is a growing trend in Cyprus, and CEMs are involved in implementing circular strategies in the hospitality sector, such as reducing water and energy consumption and promoting sustainable tourism practices. Government agencies and local authorities in Cyprus are incorporating circular economy principles into their policies and operations. CEMs may find opportunities to work in government

positions related to sustainability and environmental management. Environmental consulting firms and sustainability consultants often employ CEMs to advise clients on circular economy strategies and compliance with environmental regulations.

## *Belgium*

The profession of the Circular Economy Manager in Belgium is characterized by dynamic and evolving trends in the labor market.

Belgium has shown a great commitment to sustainability and circular economy principles and is a frontrunner concerning circular economy and a great supporter of the work of UNEP that provides them data and work together for the country's best strategy for circular economy.

Belgium's participation in international sustainability and circular economy initiatives (BRPCE) with partnerships with neighboring countries (BENELUX) and international organizations (UNEP), creates opportunities for Circular Economy Managers to engage on a national, transnational and global scale. Since the government promotes and provides funded project calls regarding circular economy (BRPCE and others), it's becoming evident that circular economy is a priority for businesses and organizations in Belgium.

Also, as sustainability and waste reduction objectives have an important position, there is a progressive growing demand for Circular Economy Managers who can lead and implement circular practices across various sectors, including agri-food, manufacturing and technology, to name but a few.

The Circular Economy Manager, because of it being recent in the employment sector, we observe that the CEMs in Belgium are not limited to a unique sector. Since they derive from various backgrounds, they find opportunities for employment and impact in diverse industries. In Belgium, this includes the agri-food sector, where the focus is on sustainable agriculture and food production, but also in manufacturing, retail, and technology sectors.

A fair number of companies in Belgium are launching sustainability initiatives regarding waste reduction, resource optimization, recycling, and sustainable sourcing, but there are also many circular startups and SMEs. This trend is contributing to the need for Circular Economy Managers who can lead and manage these projects effectively. To add to that, the circular economy works with a great variety of stakeholders from governmental agencies and research institutions to NGOs.

As far as business types are concerned, Circular Economy Managers can find employment in various domains in Belgium: to multinational companies, consulting firms, government agencies,

NGOs, research centers, startups, trade associations or SMEs that hire Circular Economy Managers to incorporate circular practices into their operations and supply chains.

## *Greece*

The profession of a circular economy manager in Greece has been experiencing significant growth and transformation in recent years, reflecting the global shift towards sustainable and environmentally responsible practices. This dynamic field has evolved in response to environmental challenges, regulatory changes, and increasing awareness about the importance of circular economy principles. In this text, we will explore the dynamics of the profession, growth trends, sectors in the labor market, and types of businesses where circular economy managers play a vital role in Greece.

The dynamics of the circular economy manager profession in Greece are characterized by continuous adaptation to evolving environmental policies and technological advancements. Circular economy managers are responsible for designing and implementing sustainable practices within businesses and organizations. This includes developing strategies to reduce waste, improve resource efficiency, and promote the reuse and recycling of materials. These professionals work closely with diverse stakeholders, including government agencies, businesses, non-profit organizations, and communities, to foster a circular economy ecosystem.

The profession of circular economy management in Greece has witnessed a notable growth trend in recent years. This growth is driven by several factors, including increased environmental awareness among consumers, stricter regulations on waste management and recycling, and a shift in corporate values towards sustainability. Businesses across various sectors are recognizing the importance of adopting circular economy principles to enhance their environmental credentials, reduce costs, and gain a competitive edge in the market.

Circular economy managers in Greece find employment opportunities in a wide range of sectors. One of the prominent sectors is the manufacturing industry, where companies are focusing on optimizing production processes, reducing material waste, and improving the recyclability of products. Additionally, the construction and real estate sector plays a significant role, with professionals working on sustainable building practices, recycling of construction materials, and implementing energy-efficient technologies.

Circular economy managers are employed by a diverse array of businesses in Greece. This includes large multinational corporations, small and medium-sized enterprises (SMEs), non-governmental organizations (NGOs), research institutions, and government agencies. Multinational corporations often hire circular economy managers to develop global sustainability strategies, aligning their operations with international environmental standards and best practices.

In summary, the profession of a circular economy manager in Greece is evolving in response to the increasing demand for sustainable practices across various sectors. The growth trends in this field reflect a broader societal shift towards environmental consciousness and responsible resource management. Circular economy managers are instrumental in guiding businesses, organizations, and industries towards a more sustainable future, ensuring that economic growth is achieved in harmony with environmental preservation. As Greece continues to embrace circular economy principles, the role of circular economy managers will become even more vital in shaping the country's sustainable development trajectory.

### *Italy*

The specialty profession of the Circular Economy Manager is considered in Italy to be a huge investment in the future. There are different interesting case studies of Circular Economy models applied by different companies, but they are still not structural or mainstream, and mostly coming from single enterprises decisions, even if Italy seems to be a driving force in Circular Economy, according to different studies. 44% of companies interviewed by the Energy & Strategy Group in their Report on Circular Economy state to have started at least one initiative of CE, but mostly they are at an initial stage and mostly concentrating on development of new products with a design which is less impactful for the environment or with higher possibility to be recycled.

However, in the PNRR (National plan for restarting and resilience) funds envisaged in 2022, 5.27 billions € are planned for the mission 2 for ecological transition. This makes clear the ongoing trend for companies and enterprises to look forward to a less impactful ecological footprint with their productions, and the necessity for figures able to lead this transition in the SMEs.

Due to the current frame and situation, the change to circular economy at management level appears still at the initial stages. Big companies are leaning more towards this approach though, due both to a higher availability of resources, a need for a cleaner reputation, and the obligation to have a circular economy manager by 2026, but for SMEs this is still in the very beginners stage. According to this idea, mentioned also in the book “Circular Economy Manager: a profession set to change the rules” (A.Geremicca & N.Tagliaferro), the figure of Circular Economy Manager

might not be the specific role of a single person in an SME at this stage: however, the COO, CEO or another managerial figure within the enterprise might cover this role too.

Moreover, due to the difficulty of an “old” entrepreneur to get the set of knowledge and skills necessary to productively drive circular economy practices in their work, there are different companies offering to start-up this managerial system, train managers in the topic, or provide softwares able to monitor and manage the overall process.

Examples of management of an SMEs in Italy dealing with circular economy can be found in several fields, from energy productions, to packaging systems, food industry, special machineries production, and more.

### 4.3 Current training opportunities and education level of the relevant professionals in the partner countries (NQF/EQF).

#### *Portugal*

To acquire all the knowledge, skills, and competencies to become a certified Circular Economy Manager, you need a combination of formal education, relevant work experience, and ongoing professional development. The educational path for this role can vary, but here are some common educational paths and degrees that can help prepare individuals for a career as a Circular Economy Manager:

1. A bachelor's degree in a related field can be the starting point.

Some examples of relevant majors include:

- Environmental Science or Environmental Studies
- Sustainability studies
- Business Management or Sustainable Business
- Supply Chain Management
- Industrial Ecology
- Agriculture Sciences or Agribusiness

2. Master's degree provides advanced knowledge and skills in sustainability and circular economy concepts.

- Relevant master's programs include:

- Master of sustainability management
- Master in Circular Economy
- Master I Environmental Management
- Master of Business Administration (MBA) with a focus on sustainability or environmental management

3. Certifications and Training can be highly valuable. They can come in completion of the bachelor's and master's degrees to offer specialized knowledge.

Some examples include:

- Certified Sustainability Practitioner (CSP)
- LEED Green Associate or LEED Accredited Professional (for green building and sustainable design)
- ISO14001 Lead Auditor (for environmental management systems)

4. Ph.D. in Sustainability is optional, but definitely give a high-level position or research-based careers.

According to the European Qualifications Framework (EQF) the cross-European reference framework that connects various national qualification systems and frameworks, to become a Circular Economy Manager in Portugal, it is needed Level 7 of EQF.

### *Spain*

Although the exact educational requirements for a Circular Economy Manager position in Spain may vary, you should aim for level 7, or master's degree, of the European Qualifications Framework (EQF). Since the circular economy is dynamic, training and continuing education are a must. In addition, it is essential to follow best practices in this fast-changing field and to be aware of the specific laws and regulations that apply in Spain.

A European standard for comprehending and contrasting credentials at various educational and training levels is offered by the EQF, or European Qualifications Framework. The significance of formal education and technical training for the development of circular economy professionals in Spain is emphasized by these training opportunities and educational levels. Uniformity and comparability of qualifications throughout the European Union are guaranteed by alignment with European qualification frameworks.

A possible career path that a circular economy manager could follow would have to have at least some of the following academic and professional requirements:

**Degree in a Related Field (Level 6-EQF/NQF):** Obtaining a bachelor's degree in a discipline linked to the circular economy is typically the first step in the pathway. Degree programs in environmental science, sustainability studies, supply chain management, industrial ecology, business administration with a focus on sustainability, and agricultural science or agribusiness for example.

**Master's Degree in Circular Economy (Level 7 - EQF/NQF):** Following graduation from a bachelor's program, it is recommended that students seek a master's degree in environmental science and technology, sustainable development, environmental management, or sustainability and corporate responsibility.

**Certifications and Continuing Education:** In addition to formal education, seeking specific certifications related to the circular economy can provide additional value. These certifications may include Certified Circular Economy Manager (CCEM)[1], Certified Sustainability Practitioner (CSP), and ISO 14001 Environmental Management Systems Certification.

## *Cyprus*

In Cyprus, training opportunities and education levels for professionals, including Circular Economy Managers (CEMs), are evolving to meet the increasing demand for expertise in sustainability and circular economy practices. The education and qualification framework in Cyprus is aligned with the European Qualifications Framework (EQF) and the National Qualifications Framework (NQF). Here is an overview of the current training opportunities and education levels:

- **Bachelor's Degrees (Level 6 - EQF/NQF):** Several universities and higher education institutions in Cyprus offer bachelor's degree programs in environmental science, sustainability, and related fields. These programs provide a strong foundation for individuals interested in pursuing a career in circular economy management.
- **Master's Degrees (Level 7 - EQF/NQF):** Some universities offer master's degree programs in fields like environmental management, sustainable development, or circular economy. These programs provide more



specialized knowledge and skills for professionals looking to advance in their careers.

- **Technical and Vocational Training (Level 4-5 - EQF/NQF):** Vocational schools and technical training centers provide training in areas related to circular economy practices, such as waste management, renewable energy technologies, and sustainable agriculture. These programs offer practical skills for individuals seeking hands-on experience.

### *Belgium*

In Belgium, Circular Economy Managers typically hold at least a bachelor's degree (EQF Level 6) in fields like project management or environmental sciences/ sustainability. There are no full three-year bachelor degree programs in Belgium.

Most CEMs pursue master's degrees (EQF Level 7) to gain an expertise in circular economy or related fields.

Short courses (online or in present), workshops, and certifications offered by universities, research institutions, and training centers provide additional training in circular economy (they are more common than official programs in Universities) (EQF Level 4/5).

For those interested in further research, doctoral programs (EQF Level 8) in sustainability or circular economy are available, (but we should keep in mind that the subject of somebody's thesis is always in accordance with the professor/mentor and the doctorate student.)

On-the-job training and practical experience play an important role in developing skills. The always developing profession of the circular economy field emphasizes the need for ongoing professional development to stay updated on evolving practices and regulations.

### *Greece*

In Greece, becoming a Circular Economy Manager in the agri-food sector requires a combination of formal education, practical experience, and specialized training. The educational paths, European Qualifications Framework (EQF) levels, and accreditation requirements for this role can vary, but generally, individuals pursuing this career path should consider the following options:

Concerning the academic education a Bachelor's Degree (EQF Level 6) is needed: A bachelor's degree in fields such as Environmental Science, Agricultural Engineering, Sustainability Studies, or Business Management can provide a solid foundation. Many universities and technical institutions in Greece offer relevant undergraduate programs. Also a Master's Degree (EQF Level 7) is needed : Pursuing a master's degree in Circular Economy, Environmental Management,



Sustainable Development, or a related field can enhance expertise. Master's programs often delve into advanced topics and offer specialisation options, providing a deeper understanding of circular economy principles.

### *Italy*

First of all it is important to notice the following elements about the situation in Italy regarding the implementation of NQF and EQF:

- The comprehensive NQF in Italy was adopted by inter-ministerial decree in 2018, supporting the link between the national repository and the EQF.
- The national repository is a comprehensive collection of all existing national, regional and sectorial repertoires.
- Significant part of educational certifications, qualifications and professional requirements are part of separated regional systems
- Competences acquired through non formal and informal learning are yet to be included in a comprehensive system (especially at National Level)

The Italian NQF is considered to be still at the activation stage. With this in mind, although there are not specific requirements to practise the profession, most of the educational offers for CEMs in Italy are second or third cycle level qualification (EQF 7 or 8), so-called highly specialized Master Degrees.

Examples are:

- the brand new paths by the LUISS university,
- the Master in Sustainable Management & Entrepreneurship and the Master in Trasformative Leadership for Sustainable Business;
- the Politecnico di Milano and Bocconi Universities launched since one academic year the Master in Transformative Sustainability;
- the Master in Management and Control of the Environment proposed by the Sant'Anna University.

Universities and external educational providers also offer high quality specific courses.

Several online and in-person courses are also available to develop the skills of a CSR manager, Environmental Manager or Circular Economy Manager, but their compliance with EQF is not

specified, therefore they seem mostly like ways to try to fill the existing gaps for a rising demand without having any certain qualification.

Federmanager (association of managers in Italy) together with the company specialized in training RINA, through their specialized course BeManager, are certifying the competences of managers, including the ones necessary for the figure of Sustainability Manager.

Several independent projects ran by companies, training institutions, NGOs and trade unions are ran to provide or certify competences for managers, including the ones needed to manage green transition, but they are mostly limited in time and number of people that can get access to the offer. However, it is a great opportunity for SMEs, that have a more limited amount of resources, to get access to the skills needed to have a certified Sustainability Manager among them. An example is the project “Managers Culture and passing competences” done by Assolombarda and Ecole in the Region of Lombardia, providing the above mentioned competences to 20 SMEs in the region. Federmanager, very aware of the upcoming transformation in the managers’ profession, in the needs of the enterprises to make a turn towards a more ecological approach, and in the requirements and opportunities offered by the EU, is struggling to propose a more solidified and structured training system for Sustainability Managers, especially in the SMEs.

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