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Project Result 5: Digital Course in Circular Agriculture

“SKILLS”

<https://www.euskills.info/home>

“Strengthening Key Competences in Agriculture
for Value Chain Knowledge”



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UNIVERSITETAS



Erasmus+



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Digital Course: Introduction to Circular Agriculture

Chapter 1 Introduction

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Foreword



The goal of this module is to explore an introduction to Circular agriculture (CA) at a HEI level. This digital course delves into the exciting and transformative world of Circular agriculture.

SKILLS course in CA inspires students and teachers to learn not only circular agro-economy principles but also a policy-making tool to help achieve sustainability.

Below we will explore our core points in CA and resources. It is important to familiarize yourself with each of these tools to better understand the thematic you will be working with.

Learning outcomes



By the end of this course, you will be able to:

- **Explain** why students and teachers should be educated about CA.
- **Describe** CA values for HEI.
- **Describe** CA core points and resources.
- **Identify** the key features of the CA

Target audience



Our target audience is educators and their students, with an added focus on higher university level.

We reach them using online resources, and we strive to have a meaningful and measurable impact.

With this introductory course we remain committed to serving university educators by offering a carefully selected collection of state-of-the-art resources.

Our goal is to have every teacher in at least the SKILLS partnership, but preferably beyond, to use one of our resources with this course.



Within this part we will embark on a journey through research papers, articles, and reports about Circular economy, circular economy society and circular agriculture.

The purpose for this review is to prove, that higher education students, academics, as well as agricultural producers and practitioners need green skills, which are relevant for circular economy society members and are represented in this learning material of digital course.

The circular economy is defined as an economic system based on business models that replace the concept of "end-of-life" by reducing, alternatively reusing, recycling and recovering materials in production and/or distribution and consumption processes, thereby affecting the micro (products, companies, consumers), meso (eco-industrial parks) and macro (city, region, country, etc.) sectors of the economy.

For the full list of literature review please consider the text file for the Introduction Chapter.

Concepts and state of the art



Key points:

Circular agriculture represents a transformative shift from the traditional linear agricultural model of 'take-produce-consume-discard' to a more sustainable and regenerative system. This approach prioritizes the avoidance of waste and losses, the reuse and recycling of by-products, and the efficient utilization of nutrients and biomass to feed humans.

Circular agriculture offers a compelling framework for transforming modern farming into a more sustainable and environmentally friendly practice. By moving away from the exploitative 'take-produce-consume-discard' model, circular agriculture promotes the efficient use of resources, minimizes waste, and fosters a regenerative approach to farming. This system not only enhances food security and reduces reliance on external inputs but also contributes significantly to the preservation of ecosystems and the mitigation of climate change.

Concepts and the state of the art



Definitions of circular agriculture	Key objects
Circular agriculture is a closed-loop system in which nothing is wasted (Toop et al., 2017).	a closed-loop system, nothing is wasted
Circular agriculture is known as closed-loop agriculture, a method of farming with nature, rather than against it (Schouten, 2020).	closed-loop agriculture, a method of farming with nature
Circular agriculture is defined as a facet of the circular economy that targets the challenges of the farm-based rural economy and environmental issues (Atinkut et al., 2020).	aspect of the circular economy, to solve economic and environmental problems
Circular agriculture is a shift away from the current exploitative ways of growing food that destroy soil fertility, contribute largely to greenhouse gas emissions and leave little space for wilderness to a model that regenerates and cares for nature (Marinova, Bugaeva 2020).	a model that regenerates and cares for nature
Circular agriculture is an effective approach for the management of soil organic inputs that improves soil fertility and cropping system sustainability (El Janati et al., 2021).	an effective approach, improves soil fertility and cropping system sustainability
Circular agriculture is a way to farm sustainably, while making use of scientific advances, innovations, and new technologies (Helgason, Iversen, Julca, 2021).	a way to farm sustainably, scientific advances, innovations, and new technologies
Circular agriculture contributes to a more robust and sustainable food system, benefiting both farmers and the environment. The adoption of circular practices enhances household food security, diminishes external input dependency, and fosters a self-sustaining and productive farming approach (Kansah-Dwamena, 2023).	more robust and sustainable food system, a self-sustaining and productive farming approach
Circular agriculture is to move from the current 'take-produce-consume-discard' model to one in which waste and losses are avoided, where by-products are reused and recycled and nutrients and biomass are used more efficiently to feed humans (Hoogstra et al., 2024).	waste and losses are avoided, products are reused and recycled, more efficiently

The need for CA in HEI



This Digital Course in Circular Agriculture equips higher education students, academics, as well as agricultural producers and practitioners with the green skills needed to thrive in a circular economy society.

The survey conducted in the partner countries of the project showed that their universities have curricula or at least separate courses that teach the basics of circular agriculture, and the educational materials and tasks created in this course can be easily integrated into existing courses.

This course is for circular society members who are passionate about circular agriculture – and provides the knowledge to transition towards a more sustainable future. Using innovative content and tailored materials, learners'll explore ways to enhance resource efficiency, profitability, and environmental responsibility in agricultural production, how to implement the principles of circular agriculture.

Furthermore, the course will catalyse innovation and collaboration across agricultural value chains, paving the way for a widespread adoption of circular economy principles in our food system.

Personal benefits



The need for professional circular economy specialists is based on the provisions of the 2030 Agenda for Sustainable Development (2015), adopted by the United Nations (UN), the European Union (EU) Growth Strategy “European Green Deal” and other strategies require a fair transition to national, regional and local public administration systems, focusing on the integrated/inclusive development of the territory, bringing together local resources without leaving anyone behind.

The SKILLS course in CA will help each user to :

- a) Develop skills
- b) Network
- c) Become informed

Develop an elevator pitch



SCENARIO: You are leading a lesson with your students around circular agriculture. You start to speak, remember key terms, and then pause. Where do you start?

MAKING A PITCH: An elevator pitch is a 20-30 second, compelling speech. You will use it to describe how you will hook students into understanding the importance of circular agriculture. It should be interesting and sound natural in conversation. The speech should be prepared in advance, so it is a clear and succinct explanation. In this activity, you will develop your own elevator pitch.

To do so, follow these steps:

a) *Identify your goal*

Describe the goal of circular agriculture – with a focus on how it relates to your students.

b) *Be engaging*

Communicate what you want your audience to remember most about you. A great pitch shows your enthusiasm and attracts your listener's attention.

c) *Communicate uniqueness*

Identify what makes circular agriculture a unique sector that is filled with potential.

Conclusions



This digital course analyses and introduces learners to topics relevant to the transition to circular farming:

1. Best practices implied in CA (including friendly innovative teaching methods and tools)
2. Objectives and potentials of CA
3. Sustainability of food security in CA
4. Value chain for minimizing waste resources in CA
5. Megatrends, concepts and factors of CA
6. Case studies of CA

References



The full list of References can be found at the bottom of the Introduction chapter text file.

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