



TRAINERS' MANUAL

UPGRADING FACILITATOR FOR CIRCULAR ECONOMY



Co-funded by the
Erasmus+ Programme
of the European Union



Upskilling for more creative circular economy (U-Eco)
2019-1-SE01-KA204-060530

PROJECT PARTNERS

Swide^os

BIOAZUL
WATER • ENERGY • ENVIRONMENT

Defoin



Co-funded by the
Erasmus+ Programme
of the European Union

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

Introduction

If you have come across this document, you may have already heard about the concept of a “circular economy”. But even though the concept is becoming well-known in different sectors, you still may wonder what it is exactly. You may also wonder how you could become an actor in supporting the transition towards a circular economy in your own sector and daily life.

If these thoughts have crossed your mind, then you are in the right place!

The U-Eco partnership has developed this resourceful and insightful manual aimed at those of you who want to learn about the circular economy and be the change in your own life. And it is also intended for those of you who want to gain skills to drive and inspire change in others around you.

The U-Eco partnership hopes our project can be the bridge between what you want to do, and the skills and knowledge that you might be missing to get there. For this reason, in this manual's pages, you will be introduced to different concepts, aspects, and the state of affairs surrounding circular economy topics, as well as to training methodologies, methods, and exercises that can inspire you in your own activities.

Join us in this innovative project, and in changing our world to a restorative and harmonious place!



Table of Contents

INTRODUCTION	I
UNDERSTANDING THE ISSUE	II
U-ECO EXPLAINED – HOW WE GOT HERE	IV
OVERVIEW OF THE MANUAL	V
DATA COLLECTION	V
FRAMEWORK.....	1
A WAY OUT OF IT?	2
WHAT IS A CIRCULAR ECONOMY?.....	2
CIRCULAR PRINCIPLES.....	3
CIRCULAR PRACTICES	4
THE CIRCULAR ECONOMY IN PRACTICE	5
WHAT ARE THE MAIN CHALLENGES AND OPPORTUNITIES?	6
WHAT ARE THE MAIN BENEFITS?	7
SETTING UP A CIRCULAR BUSINESS.....	9
THE OPPORTUNITIES OF CIRCULAR ECONOMY FOR SMALL AND MEDIUM ENTERPRISES (SMEs)	10
WHAT ARE THE AVAILABLE SUPPORT AND INCENTIVES?	11
WHAT IS THE ROLE OF ENTREPRENEURSHIP IN THIS CONTEXT?	13
WHAT CIRCULAR INITIATIVES ALREADY EXIST?.....	15
BUILDING YOUR LEARNING ACTIVITY	18
TRAINING METHODOLOGIES.....	19
TRAINING METHODS.....	19
A STEP OUTSIDE THE LECTURE ENVIRONMENT: WORKSHOPS.....	35
TIPS FOR YOUR TRAINING ACTIVITY	38
SUGGESTIONS OF EXERCISES	42
INTRODUCTION	43
CARBON FOOTPRINT TEST.....	43
CIRCULAR ECONOMY IN MOBILE PHONES	44
WHAT IS YOUR FOOD WASTE?	45
DEVELOPING A GROUP PROJECT.....	46
ANOTHER WAY TO TRANSFER KNOWLEDGE: MENTORSHIP PROGRAMS	48
REFERENCES	53



Understanding the Issue

First of all, to start understanding the circular economy (CE), why it is important, and why there is a growing incentive for promoting it and developing businesses that work in accordance with it, it is necessary to understand what the problem with our current linear economic and production system is. Here we have provided summarised information to help you understand the linear economy. For more details, please check the [training modules](#) previously developed by the project.

Why is there a need for change?

Put simply, because our current economic model, which is based on a linear economy and production model, is triggering negative environmental effects by polluting water and ecosystems, depleting natural resources and causing biodiversity loss. It is also responsible for high greenhouse gas emissions and is negatively affecting human health (World Economic Forum, 2019).

But what is a linear economy and production model?

Fundamentally, it is based on an unlimited exponential growth approach and on the belief that the planet has infinite resources. That is why its motto and pattern is the “**take-make-dispose**” principle: companies harvest, and extract materials needed to manufacture products which are sold to customers and kept until they are no longer needed, when they are then disposed of (Ellen MacArthur Foundation, 2013).

However, in reality, our planet's resources are not infinite.

As a consequence, the linear economy and production model leads to unnecessary resource loss, as well as to other negative effects, such as the following:

- ▶ Overproduction
- ▶ Reduced life cycles of products
- ▶ Accumulation of waste
- ▶ Depletion and over-exploitation of natural resources, leading to the increased cost of said resources

That is why this model is unsustainable in its core and incoherent with the planetary boundaries.

Apart from the environmental aspect, from an economic perspective, the linear economy causes significant economic uncertainty due to both increasing prices and elevated price volatility for natural resources, therefore putting at risk the stability of the world's economic health (*ibid*).

As a consequence, human actions have placed a great degree of pressure and stress on natural systems. Now, facing increasing population growth – 9.7 billion people are projected to live on the Earth by 2050 (United Nations, 2019) – and the expansion of the global products' demand and consumption, **there is an urgent need to rethink the way we operate and conceive of our lifestyles.**



Where to Start?

A **circular economy** offers a valuable alternative to the linear economic model and the consequent “urgent need for a new paradigm that integrates the continued development of human societies and the maintenance of the Earth system in a resilient and accommodating state” (Steffen et al., 2015).

It entails an innovative economic system that minimises environmental impacts without compromising economic development by reducing waste disposal and optimising resource use through a circular rather than linear approach.

However, in order to implement the transition towards a circular economy, innovation and creative thinking are crucial to change our working, production and consumption patterns.

Along these lines, as entrepreneurs have the great power to create and to develop, entrepreneurship is key in a transition towards circular practices and to a circular economy, for “small businesses and entrepreneurships are considered major drivers of economic growth, of breakthrough innovations and job creation” (Heshmati, 2015).



U-Eco Explained – How we got here

What?

[Upskilling for more creative circular economy \(U-Eco\)](#) is a KA2 Strategic Partnership co-funded by the Erasmus+ programme of the European Union with a duration of two years (October 2019 - September 2021).

Who?

The project is implemented in the following countries through the indicated organisations:

- ▶ Sweden – SwIdeas AB
- ▶ Belgium – European Association of Development Agencies – EURADA
- ▶ Spain – Bioazul & Training Development and Integration – DEFOIN
- ▶ Romania – Center for Promoting Lifelong Learning – CPIP
- ▶ Poland – Association for the Regional Initiatives Development - ARID.

How?

The project targets entrepreneurs interested in establishing businesses in a CE context, and professionals interested in learning about circular business models.

U-Eco focuses on the process of transition towards a circular economy and has completed the following:

- ▶ Identification of entrepreneurship opportunities and of five main areas with [entrepreneurship potential](#)
- ▶ Elaboration of an [e-catalogue of 15 job profiles](#) demanded in the Circular Economy context and required set of key skills and competences
- ▶ Development of [training modalities](#) in digital format to empower entrepreneurs with knowledge of barriers and opportunities
- ▶ Development of customised [case studies](#), good practices and mentor's advice for training purposes
- ▶ Finally, the present manual brings all of this together, seeking to empower trainers to utilise the U-Eco material.

Why?

U-Eco aims to support individuals in acquiring and developing the right skills and competences to meet the growing demands from the labour market. It prioritises the goal of boosting self-employment in a circular economy context by supporting the setting up of and access to key upskilling pathways.



Overview of the Manual

At U-Eco's core is the development of circular economy training materials to boost employability and self-employment, as well as to meet the growing labour market demand for individuals with knowledge of circular economy and businesses that emphasise circular principles. For this purpose, it is crucial to empower trainers to utilise U-Eco's material and methodology while working independently and effectively in order to boost the transition towards a circular economy.

This manual is therefore a key aspect of the project, as it seeks to empower trainers with the necessary knowledge and skills to implement trainings and workshops focused on circularity deploying the material previously developed within the project.

Along these lines, the information contained in it is organised so as to provide: 1) a theoretical introduction to the context in which the concept of a circular economy arises and its key aspects, challenges and opportunities; 2) practical guidelines to making use of U-Eco's material and methodology.

Finally, the findings of the U-Eco research and its methodology have been compiled in a comprehensive manner in the different parts of the manual.

The manual is therefore composed of the following sections:

- ▶ Framework – An Overview of the Circular Economy
- ▶ The Circular Economy in Practice – What is it, and What are its Benefits?
- ▶ Setting up a Circular Business – Opportunities, Support, and Inspiration
- ▶ Building your Learning Activity – Training Methodologies, Methods and Tips
- ▶ Suggestions of Exercises – From Theory to Practice

Data Collection

The manual includes material developed throughout the duration of the project, which has been fruit of an extensive research carried out by the consortium. Specifically, the data contained in the materials developed in the first and second intellectual outputs of U-Eco has been gathered through quantitative and qualitative data collection methods. In relation to the former method, surveys were shared with the project's target group, as well as with other relevant individuals, in order to gather insights and feedback. On the other hand, qualitative data collection methods included desk-based research of academic and scientific articles and of existing initiatives utilising circular approaches in the partner countries.





U-Eco



Co-funded by the
Erasmus+ Programme
of the European Union

TRAINERS' MANUAL

Framework



A Way out of it?

Now that you understand what the problem with our current linear economic and production system is, it is time to find out about what could provide a way out of it: a circular economy. Here we have provided summarised information to help you understand what a circular economy is, its main challenges and opportunities, the incentives and support already available, and its basic principles and practices. For more details, check out the training modules previously developed as part of U-Eco.

What is a Circular Economy?

The innovative character of this economic system lies within its main features that allow to operate and produce things in a sustainable and regenerative manner. Indeed, a circular economy “[...] is restorative by intention; aims to rely on renewable energy; minimises, tracks, and eliminates the use of toxic chemicals; and eradicates waste through careful design” (Ellen MacArthur Foundation, 2013). Therefore, the objective of a circular economy “is to maximize value at each point in a product’s life” (Stahel, 2016).

Along these lines, what makes it unique is that a circular economy is “based on business models which replace the ‘end-of-life’ concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes” (Kirchherr, Reike and Hekkert, 2017).

“The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended.” (European Parliament, 2018)

An example of a circular business model in real life can be demonstrated by the case of the Circos, an online shop that offers a “rental subscription service for children’s and maternity wear” (Circos, n.d.). The business idea has been inspired by the interest in prolonging the life of clothing items that are usually only used for a short period of time. It is estimated that an average child needs around 280 pieces of clothing which are only used for around 2-3 months of their lives, a large amount of them then ending up in landfills, their value lost (Ellen MacArthur Foundation, n.d.). Against this picture, Circos proposes to grant members access to a range of high-quality clothing (Circos, n.d.) through their monthly subscription service. This allows members to share the product’s footprint while saving money, and it is predicted that “between 8 and 10 families will share and enjoy the same piece of clothing” (Circos, n.d.). As a result, “the environmental impact and resource use associated with clothing young children is reduced. Clothes businesses are incentivised to make higher quality, more durable clothing, as more revenue can be made through multiple cycles of reuse” (Ellen MacArthur Foundation, n.d.).









Circular Principles

The Ellen MacArthur Foundation (2015) pinpoints the following as the key principles that a circular economy rests on:

- ▶ “Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows”;
- ▶ “Optimise resource yields by circulating products, components, and materials at the highest utility at all times in both technical and biological cycles”;
- ▶ “Foster system effectiveness by revealing and designing out negative externalities”.

But, how to apply and implement these theoretical principles in real life? The **ReSOLVE** framework elaborated by the Ellen MacArthur Foundation (2015) can facilitate the transition from theory to practice by providing businesses and countries with circular business actions.

- 
REGENERATE
 - Shift to renewable energy and materials
 - Reclaim, retain, and restore health of ecosystems
 - Return recovered biological resources to the biosphere
- 
SHARE
 - Share assets (e.g. cars, rooms, appliances)
 - Reuse/secondhand
 - Prolong life through maintenance, design for durability, upgradability, etc.
- 
OPTIMISE
 - Increase performance/efficiency of product
 - Remove waste in production and supply chain
 - Leverage big data, automation, remote sensing and steering
- 
LOOP
 - Remanufacture products or components
 - Recycle materials
 - Digest anaerobically
 - Extract biochemicals from organic waste
- 
VIRTUALISE
 - Dematerialise directly (e.g. books, CDs, DVDs, travel)
 - Dematerialise indirectly (e.g. online shopping)
- 
EXCHANGE
 - Replace old with advanced non-renewable materials
 - Apply new technologies (e.g. 3D printing)
 - Choose new product/service (e.g. multimodal transport)

Note: The content has been unaltered from Ellen MacArthur Foundation (2015) and adapted to the present manual.



Circular Practices

Actual practices help theoretical principles to be put into practice. The aforementioned principles can therefore find their effective and concrete dimension through the following circular practices which belong to so-called 9R framework, namely the most elaborated and comprehensive among the existing R-frameworks. Those were originally developed with the aim “to achieve less resource and material consumption in product chains and make the economy more circular” (Potting, Hekkert, Worrell and Hanemaaijer, 2017). The following practices range from the ones with **low** circularity to the ones with **high** circularity (ibid):

01. **RECOVER**

“Incineration of materials with energy recovery”.

02. **RECYCLE**

“Process materials to obtain the same (high grade) or lower (low grade) quality”.

03. **REPURPOSE**

“Use discarded product or its parts in a new product with a different function”.

04. **REMANUFACTURE**

“Use parts of discarded product in a new product with the same function”.

05. **REFURBISH**

“Restore an old product and bring it up to date”.

06. **REPAIR**

“Repair and maintenance of defective product so it can be used with its original function”.

07. **RE-USE**

“Re-use by another consumer of discarded product which is still in good condition and fulfils its original function”.

08. **REDUCE**

“Increase efficiency in product manufacture or use by consuming fewer natural resources and materials”.

09. **RETHINK**

“Make product use more intensive (.e.g through sharing products, or by putting multi-functional products on the market)”.

10. **REFUSE**

“Make product redundant by abandoning its function or by offering the same function with a radically different product”.

Note: The content has been unaltered from Potting, Hekkert, Worrell and Hanemaaijer (2017) and adapted to the present manual.

Keep in mind: understanding the basic principles and practices of a circular economy is key for your learners to know how to direct their energy into the right skills and objectives for achieving their own goals. It is also key to being able to incorporate a circular economy approach into their business plans. For instance, do they want to have a business that will promote the reuse of products? Do they want to know how they could rethink their working patterns to be consume and produce more efficiently?





TRAINERS' MANUAL

The Circular Economy in Practice



What are the Main Challenges and Opportunities?

When presenting the circular economy to your learners, it is important to fully understand the main challenges and opportunities it can offer to them either in their personal daily lives, their professional development, or in adventuring into new businesses. Here we have listed some points both in general and in particular in relation to SMEs. For more details, check the training modules previously developed for U-Eco.

Challenges

First and foremost, a circular economy entails a disruption of the current economic model. This for sure does not come without its challenges.

For one, given its innovative character, for a circular economy model to be possible, innovation, research, and digitalisation are necessary. Therefore, this new system demands new specialised professional people, with a whole set of new skills.

This is particularly true when it comes to the need to prioritise ecological design that will better enable increased reuse and recycling of products, thereby reducing the amount of waste disposal (Green Alliance, 2015).

A circular economy model also needs to be versatile and able to adapt to changes to build up resilience through diversified means and sources of production as well as through creativity, especially in a world of increasing resource demand.

Opportunities

Challenges aside, the opportunities that a circular economy could bring about are likely to exceed the initial challenges that must be overcome to enable it. Indeed, it is worth noting the environmental, social, and also economic benefits it is likely to promote.



What are the Main Benefits?

Environmental benefits

When talking about a circular economy, one is likely to conclude that important positive environmental effects will emerge. Indeed, a circular economy is conceptualised in order to allow human production and consumption patterns to better respect the planetary boundaries and to operate within the limits of resource availability and regeneration time. It thereby promotes sustainable behaviour and prompts a harmonious relationship between humans and the environment.

Practically speaking, a circular economy is likely to result in **decreased greenhouse gas emissions and resource use**, which would help in meeting the goals set by the 2015 UN Paris Agreement on climate. This would be promoted through the investment in renewable energy and energy-efficiency measures; through the reuse and recycling of materials, which would reduce resource demand and the emissions derived from their production; and through regenerative systems, especially in agriculture, which would reduce waste and promote carbon sequestration.

A circular economy will also tend to promote and support:

- ▶ Land productivity and soil health
- ▶ Conservation of soil and lands
- ▶ Decreased dependency on and use of supplementary nutrients, such as fertilisers.

Social Benefits

Regarding the social benefits, it is worth noting that, with improved environmental conditions, social benefits are likely to follow. Indeed, having access to basic environmental services such as potable water availability and air quality are a fundamental part of basic human rights.

“All human beings depend on the environment in which we live. A safe, clean, healthy and sustainable environment is integral to the full enjoyment of a wide range of human rights, including the rights to life, health, food, water and sanitation. Without a healthy environment, we are unable to fulfil our aspirations. We may not have access to even the minimum standards of human dignity.” (OHCHR, n.d.)

It is also noteworthy that reduced greenhouse gas emissions are likely to improve health conditions triggered by air pollution, such as “bronchitis and asthma attacks in children, chronic bronchitis and work lost days in adults, and other illnesses that affect a person's normal daily routine (in other words, restricted activity days), or



worse yet may require hospital admission because of cardiopulmonary system complications” (World Health Organization, 2018).

Finally, the economic benefits that will be discussed below also trigger important social benefits, especially the reduced costs associated with products that break more often and the creation of jobs at all skills levels on the labour market such as in the process of reuse and remanufacture.

Keep in mind: In reuse and remanufacture processes, “high value is retained by keeping the original design and function of products”. In recycling processes, “moderate value is retained by recapturing raw materials to make new products”. Finally, when a product is thrown away, its value is completely lost. The first process has therefore bigger potential to employ people (Green Alliance, 2015).

Economic Benefits

For starters, a study from Ellen MacArthur Foundation, SUN and McKinsey Center for Business and Environment (2015) shows that a circular economy “allows Europe to: Grow resource productivity by up to 3 percent annually; generate a primary resource benefit of as much as €0.6 trillion per year by 2030 to Europe’s economies; generate €1.2 trillion in non-resource and externality benefits, bringing the annual total benefits to around €1.8 trillion versus today.”. All this would be translated into a **7% GDP increase** (ibid). In addition to that, other economic benefits include:

- ▶ **Economic Growth:** In developing a circular economy, it is estimated that European GDP, for instance, can grow up to 11% by 2030, and up to 27% by 2050, when compared to the respective percentages of 4% and 15% that will be achieved if the current development scenario is maintained.
- ▶ **Job creation:** A circular economy is expected to create around 700 000 new jobs by 2030, especially in the areas of innovative design and business models, research, recycling, re-manufacturing and product development (Cambridge Econometrics, Directorate-General for Environment (European Commission), ICF and Trinomics, 2018).
- ▶ **Increased resource productivity:** A circular economy is expected to increase resource productivity, namely “a measure of the total amount of materials directly used by an economy (measured as domestic material consumption (DMC)) in relation to GDP” (Glossary:Resource productivity, 2016).
- ▶ **Technological innovations:** A circular economy is particularly entwined with innovation and research, which are key to facilitate this transition. Hence, a circular economy would also contribute and lead to progressive technological innovations (The Circular Economy in Detail, n.d.).



TRAINERS' MANUAL



Setting up a Circular Business



The opportunities of Circular Economy for Small and Medium Enterprises (SMEs)

- ▶ **The European Commission** offers **funding, advisory, and help services** for SMEs operating within the CE framework. For example, the following EU funding programmes are provided for circular projects and businesses (European Commission, n.d.):
 - Competitiveness for small and medium enterprises (COSME) – The programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises is improving access to finance for SMEs through two financial instruments: the Loan Guarantee Facility, and the Equity Facility for Growth (European Circular Economy Stakeholder Platform, n.d.)
 - Regional policy support for the circular economy – These investments can contribute to more recycling, improved waste management, resource and energy efficiency, strengthening the bio-economy, novel solutions in product design, new business models and the creation of green jobs (*ibid*).
 - Eurostars – This is a funding and support programme, aimed at R&D-performing SMEs that wish to exploit the benefits that come with international collaboration (European Commission, n.d.).
- ▶ **Public Aid and Tax Incentives** for circular goods and services.
- ▶ **Reduced Environmental Pressures and Impacts:** once companies adopt the strategies and practices of the circular economy, they can reduce the environmental footprint of their products and services, and thereby differentiate themselves from their competitors.
- ▶ **Profitability:** circularity can also offer new profit opportunities by lowering costs, increasing the security of raw materials supplies and enabling robust supply chains.
- ▶ **Optimised Customer Relations:** the circular economy offers new business models and opportunities to retain customers.
- ▶ **Value Creation/ Innovation:** the circular model presents a mechanism to rethink the current development model, which has proven to be a robust driving framework capable of generating creative, innovative, and sustainable solutions.
- ▶ **Stabilize and Improve Supply Chain Security:** the circular economy works towards ensuring that companies use fewer new raw materials and depend more on recycled raw materials. It also guarantees that the value of raw materials is maximized over their entire life cycle.
- ▶ **Potential Employment Benefits:** new production models, especially those that use advanced technologies, digitalisation, and automation, are destined to generate highly specialised jobs.



The barriers for companies to overcome within a Circular Economy framework

The European Commission monitors and assesses the performance of SMEs annually. According to the publication, “SMEs, resource efficiency and green markets”, SMEs that have taken at least one resource efficiency action were asked about the barriers they had to overcome to become more resource efficient, which included:

- ▶ Complex administrative and legal procedures
- ▶ Cost of environmental actions
- ▶ Difficulties in adopting environmental legislation in their companies
- ▶ Lack of specific environmental expertise
- ▶ Technical requirements of legislations were not updated
- ▶ Difficulty choosing the right resource efficiency actions
- ▶ Lack of demand for resource-efficient products or services
- ▶ Lack of supply of required materials, parts, products, or services

SMEs face other barriers, including:

- ▶ Consumer Behaviour
- ▶ Lack of Harmonisation in the Implementation of the Various Policy Frameworks and Taxation Systems
- ▶ Lack of adequate infrastructure and support of supplier's networks, which are not involved in sustainable activities
- ▶ Innovation Policies do not always create opportunities to implement sustainable business models, that are as circular or green
- ▶ High Initial Transformation Costs
- ▶ Lack of a Secondary Supporting Raw Material Market
- ▶ Lack of Information and awareness
- ▶ Inadequate Technical Expertise and Standards that generate problems such as those caused by the lack of certificates of recognition and product harmonisation

What are the available support and incentives?

The political sphere can work both as a great barrier to or as a great incentive for the transition to a circular economy. Indeed, the political sphere is key in supporting the changes of mindsets and the disruption of naturalised unsustainable practices, for it has the power to place incentives in the necessary places. Therefore, understanding the available support and incentives to a circular economy can be very helpful for your learners, especially when it comes to their investment in new businesses or in the development of their skills. Here we have listed some incentives and support in the international and European levels. For more details, check the training modules previously developed on the U-Eco project.



International initiatives and policies that encourage a transition towards a circular economy

- ▶ **Seventh Environment Action Program (VII WFP)** to convert the EU into a low carbon economy, with efficient use of resources, ecological as well as competitiveness
- ▶ **Paris Agreement on Climate Change (COP 21. 2015)**
- ▶ **The 2030 Agenda for Sustainable Development (2015)** - the 17 Sustainable Development Goals (SDGs)
- ▶ **The New World Urban Agenda (UN-Habitat 2016)**

European policies for circular economy

- ▶ **Circular Economy Action Plan (2015)**
 - Break policy silos and expand circular economy principles across policy areas
 - Revise legislative framework on waste (Rizos, 2019)
 - Adoption of a Circular Economy Monitoring Framework “to measure progress towards a circular economy at EU and national level” (SB Insight, 2019)
- ▶ **European Green Deal (2019)**
 - Main goal is to make the EU climate neutral by 2050
 - Focuses on the financing tools which are available, and on what investments are needed for this transition to happen (European Commission, 2020c)
 - Provides a roadmap with actions “to boost the efficient use of resources by moving to a clean, circular economy and stop climate change, revert biodiversity loss and cut pollution” (European Commission, 2020d)
 - Overall budget of at least €100 billion over the period 2021-2027
- ▶ **Circular Economy Action Plan (2020)**
 - Active involvement of citizens
 - Empowers consumers while producing more sustainably
 - Target: resource-demanding sectors such as electronics, packaging, plastics, construction, textiles, construction, food and water and nutrients
 - Promotes the circularity of the entire life cycle of products (European Commission, 2020b)
 - Seeks to ensure that “the resources used are kept in the EU economy for as long as possible” (ibid)

In addition to those, at the country level, some of the main regulations regarding Circular Economy have also been identified. The U-Eco consortium concluded that although the level of engagement varies from country to country, all the EU member states are setting more ambitious goals towards circular economy in the next years.



What is the role of entrepreneurship in this context?

Entrepreneurship has considerable potential within a circular economy, as it can make a positive use of and contribute to its implementation, with its great power to create and develop. As entrepreneurs themselves, as individuals interested in the circular economy, or as professionals who want to develop their knowledge and skills to be better qualified to work in a circular economy context, it is important for your learners to know the role entrepreneurship can play in this context. For more information, check the [training modules](#) previously developed by U-Eco.

Entrepreneurship plays a significant role in our societies as one of the “major drivers of economic growth, of breakthrough innovations and job creation” (Heshmati, 2015).

Circular economy business models are rapidly growing, and they range from completely new business models to circular approaches in traditional business, covering a wide range of solutions. It is important to highlight that the transition to a Circular Economy will catalyse changes in businesses at very different levels, and so we need to use systems thinking to understand the transition.

What are the areas with biggest entrepreneurship potential?

Through the research and analysis conducted within U-Eco, five main areas with entrepreneurship potential have been identified. For more details, check out the [U-Eco catalogue](#) on skills and job profiles within a circular economy context.

The main identified areas have been the following:

- ▶ Food and biomass (agriculture, forest, food, energy)
- ▶ Plastics, secondary materials, and innovation
- ▶ Digitalisation, sharing platforms, and services
- ▶ Water treatment and reuse
- ▶ Construction and demolition

A circular economy will mean an unprecedented paradigm change, and new opportunities will appear. It will therefore be necessary for employers and employees to adopt new perspectives and skills. Some of the opportunities in the labour market found in the [U-Eco research](#) are summarised below, divided by areas and highlighting the roles and skills that are likely to be demanded:

Recycling, repair and up-cycling, waste management.

- ▶ Processes such as reverse logistics, resource and waste sorting, the cleaning of components, and the refurbishment of products; Repairing; Drivers; Managerial roles.
- ▶ The jobs in this area require: hard skills such as organisation and understanding the use of machinery, which come from practical experience and training;



Technical skills (e.g., when repairing/upcycling depending on the materials or products); soft skills, such as teamwork abilities; organisational skills; management and leadership skills; and interpersonal skills.

Design, engineering, and architecture.

- ▶ This includes some of the Key Product Value Chains (European Commission, 2020a): packaging, plastics, textiles, and buildings. It also includes jobs such as environmentally conscious designers or “green” engineers and architects.
- ▶ It mostly requires hard skills,. However, creativity also plays an essential role, as well as communication skills. For designers, it is important to have a strong foundation of training and to provide innovative solutions. For engineers/architects: hard skills are the most important ones, since it is a more technologically driven job and that requires advanced complex-problem-solving skills.

Resources, food, and water management.

- ▶ It entails the following roles for instance: process operators: circular and sustainable management of water as a resource, and food production (as well as for food for livestock); agronomic advisors: support healthy soil nourishment with organic fertiliser from composted manure and crop remnants. They combine strong interpersonal skills with ecological knowledge.
- ▶ It mostly requires hard skills such as specific technical knowledge. It also requires, soft skills to interact with the involved entities/individuals, and to solve complex problems/to find innovative solutions.

IT and digitalisation.

- ▶ Building information managers: integration and interpretation of virtual information management systems; data analysts. Software developers: software for the tracking, supervision, and support; Repairing roles for electronic devices.
- ▶ Hard skills are primarily needed, such as: mechanical skills; cloud computing; Scientific computing; database management. For managerial roles, soft skills are also fundamental → essential good communication and organisation skills.

Management and public sector.

- ▶ Decision-making roles: negotiations and organisation of the CE transition; public workers who must negotiate, bring dialogue with the citizens, and organise calls to find opportunities, e.g. managers, public procurers, civil servants, regional and national practitioners, advisors, and demand planners.
- ▶ Soft skills are important, such as communication skills; leadership and managerial skills; ability to work in teams; interpersonal skills.

Find out more about the opportunities for SMEs, entrepreneurship, and the available incentives and challenges in a CE context from our [research](#), also available on the [EPALE platform](#) on summarised format, and on our [training modules](#).



What circular initiatives already exist?

In order to help shedding light on what can be done and how one can do it, the U-Eco consortium has selected twelve case studies and good practices to address the previously identified fields with the highest growth potential, both in the European and international scene. The case studies are summarised below. They exemplify initiatives that can be furthered in a circular economy context. For more details, check out the [U-Eco Case Studies](#).

Construcia (Spain) - <https://www.construcia.com/>

Construction and Demolition

The main value of this construction company is the reuse of waste material from the construction sector, turning them into new materials that can be reused indefinitely and safely for people and the environment.

Atelier1 (Romania) - <http://atelier1.ro/contact>

Construction and Demolition

The Atelier1 passive house combines a high level of thermal comfort with minimum energy consumption. The energy consumption for heating a passive house is at least 75% lower than the energy consumption for heating a conventional building.

Margent Farm (UK) - <https://www.margentfarm.com/>

Construction and Demolition

This is a unique project as it was approached from the perspective of using the raw material that was grown on the farm and demonstrating how hemp-based products can be used as more sustainable building materials.

Bio&Co (Romania) - <http://www.bio-co.ro>

Food and Biomass (Agriculture, Forest, Food and Energy)

Bio&Co collects food waste and uses it together with crop residues to make compost that will be used as fertiliser in organic farming. It also supports solidarity for a sustainable development, through social insertion while combining the production of organic vegetables and the reduction of waste and pollution.

Municipal Waste Management Program in Krakow (Poland) - www.old.ekospalarnia.krakow.pl/1,Kontakt.html

Food and Biomass (Agriculture, Forest, Food and Energy)

The program uses the thermal waste conversion method to hygienically dispose of waste and extract clean energy from the process of disposal. The residual heat from the process converts water passing through the boiler into steam. that propels a turbine, producing electricity that then powers the waste management plant, and



excess energy enters the GPZ Wanda station and provides a source of municipal energy.

Lufa Farms (Canada) - <https://montreal.lufa.com/>

Food and Biomass (Agriculture, Forest, Food and Energy)

Lufa Farms produce farms on rooftops which are perfect for rainwater irrigation as well as benefiting from free energy from the sun and residual heat rising from the buildings below. They use a hydroponic system rather than soil farming, allowing 100% recirculation of nutrient-rich irrigation water.

SIPTex (Sweden) - <https://www.sysav.se/en/siptex/>

Plastics, Secondary Materials, and Innovation

SIPTex offers an innovative bridge between waste textiles and high-quality recycled products, contributing “to increased circularity in the textile value chain” and strengthening “Sweden's position as a pioneer in innovation and circular economy”.

Recupel (Belgium) - <https://www.recupel.be/en>

Plastics, Secondary Materials, and Innovation

Recupel works across Belgium to collect e-waste for various purposes. Recupel then either sends items to “reuse centres” to be put back into use, if still functional, or dismantles them to extract the raw materials for reprocessing and reuse if the device is no longer usable.

Circle Center (Sweden) - <https://www.circlecentrelund.org>

Digitalisation, Sharing Platforms, and Services

Circle Centre indeed created a “library of goods”, where items can be borrowed instead of being bought. Furthermore, Circle Centre offers a workplace for personal projects and a space for educational events and hands-on workshops/initiatives.

Ecocheques (Belgium) – <https://www.vlaanderen.be/ecocheques>

Digitalisation, Sharing Platforms, and Services

“Ecocheques” are a popular initiative of the Belgian Labour Council which provides Belgian private-sector employers with the opportunity of paying their employees partially by means of what are essentially vouchers which can only be used on eco-friendly products and services.

Proeko: industrial water filters (Poland) – www.proekojp.pl

Water Treatment and Reuse

Proeko addresses the need to treat heavy-metal-rich wastewater in such a way as to recover chemical compounds from the water, demineralise water, and also reduce the water used by technological processes.



In such a way, it endeavours to recover the chemical compounds within the water.

Water2Return (Spain) - <https://water2return.eu/es/>

Water Treatment and Reuse

Water2REturn proposes to use a Circular Economy approach to turn wastewater treatment facilities in slaughterhouses into "bio-refineries". In the process the nutrients recovered can be injected back into the economy as new raw materials, becoming a resource instead of a waste product.

Note: The content related to these case studies has been identified from public information which is published by the owners of the content.





TRAINERS' MANUAL



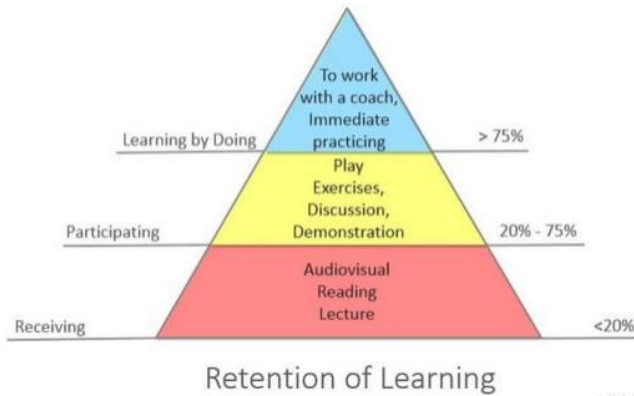
Co-funded by the
Erasmus+ Programme
of the European Union

Building your Learning Activity



Training methodologies

Inspiring circular thinking in people and motivating them to adopt more circular practices can be tricky. When learning about the circular economy, people should be inspired and have their worldviews shaped by more holistic, less wasteful perspectives. For this reason, transferring knowledge about the circular economy should not be restricted to textbooks, nor to traditional lecture formats, as if it were knowledge to be memorised and forgotten after the lecture. Rather, reflective, more practical and interactive approaches, combined with informative content, should be emphasised (Ellen MacArthur Foundation, 2020).



Be sure of one thing: memorised information is forgotten information. Imposed information is resented information. But information that is *learned from reflection and facts-based data* is information that can actually lead to *consistent behavioural changes* that is triggered by a person's *own choices*.

But what are training methodologies?

“The training methodology deals with the methods aimed to design and implement training” (Serintel, n.d.). It is therefore different from the “methods” because it can be understood as a way to understand and implement the methods that will be used.

Training Methods

With this in mind, the U-Eco partnership has selected a number of training methods that are consistent with a participatory, interactive, reflective methodology and can therefore be useful for conducting training on the topic of circular economy. Focusing on the learner, the goal is to increase awareness and knowledge; to build skills and provide tools for the learner to apply the knowledge to their own lives; and build their capacity and desire to share this among their peers and in their contexts.

Drawing on the knowledge previously shared here about circular economy, these methods are useful for transferring information in an interactive yet efficient manner, inviting the participants of the training activity to reflect while absorbing new information. Each training method introduced below has been presented in a way that allows it to be adaptable to a circular economy context, and suitable to transferring knowledge and information about it.



1. Presenting and Explaining new Concepts

What is a concept?

Before learning how to introduce new concepts, knowing what a concept is can be helpful. According to the Cambridge English Dictionary, a concept is “a principle or idea” (2020). This means that a concept is something intrinsically abstract, definitely intangible which at times can be difficult to explain (Explaining a Concept, 2020). Here we present some steps that might help the trainer to explain a concept.

Introduction of the concept (Explaining a Concept, 2020)

- ▶ Definition of the concept: What is it?
- ▶ Determine the criteria to define the concept by using narratives, descriptions, show the concept in action to let know how it works.
- ▶ Generalise: how is the concept important in people's life?

Development

After having the definition clear, and the concept in its context, we can support the explanation through other methods (Explaining a Concept, 2020):

- ▶ Classification/Division: try to fit the concept in a particular category. Divide it into parts that make it easier to understand.
- ▶ Comparison/Contrast: putting together two or more concepts can facilitate its comprehension.
- ▶ Describing a process: deconstructing how the concept works step by step.
- ▶ Illustrating: using examples, experiences, anecdotes, or even images or physical objects that support the understanding of the concept.
- ▶ Analysing causes/effects of the concept

How to use it in the Circular Economy Context?

Explaining concepts is crucial when it comes to innovative ideas, trends, and processes. That is the case of the circular economy. For this reason, in any learning activity it is important for trainers to be able to introduce and explain the concept of a circular economy. As an example, try to explain the Circular Economy through this concept available at the Ellen MacArthur Foundation's website (2017):

Introduction: Origins of the circular economy concept

The notion of circularity has deep historical and philosophical origins. The idea of feedback, of cycles in real-world systems, is ancient and has echoes in various schools of philosophy. It enjoyed a revival in industrialised countries after World War II when the advent of computer-based studies of non-linear systems unambiguously revealed the complex, interrelated, and therefore unpredictable nature of the world we live in – more akin to a metabolism than a machine. With current advances, digital technology has the power to support



the transition to a circular economy by radically increasing virtualisation, dematerialisation, transparency, and feedback-driven intelligence.

The concept of a circular economy

In a circular economy, economic activity builds and rebuilds overall system health. The concept recognises the importance of the economy needing to work effectively at all scales – for large and small businesses, for organisations and individuals, globally and locally.

Transitioning to a circular economy does not only amount to adjustments aimed at reducing the negative impacts of the linear economy. Rather, it represents a systemic shift that builds long-term resilience, generates business and economic opportunities, and provides environmental and societal benefits.

It is based on three principles:

- Design out waste and pollution
- Keep products and materials in use
- Regenerate natural systems

Note: The information has been taken unaltered from the Ellen MacArthur Foundation's website.

For more information to help you introducing and describing the circular economy, check the chapter "[Framework](#)" and our [U-Eco training methodologies](#). To support the explanation through presentation of practical examples, please check our [U-Eco Case Studies](#) and the section "[What circular initiatives already exist?](#)" of this manual.

2. From a theory to practice: case studies

What is a Case study?

The method of using case studies is very common and widely used in different subject of research within social, political, organisational, or economic contexts, and even circular economy. A case study is a description of something that really happened, and it is used to increase the participants understanding and as a resource for training activities.

According to PressAcademia "A case study is a research strategy and an empirical inquiry that investigates a phenomenon within its real-life context" (PressAcademia, 2018). This technique (case study) allows participants to practice their analytical, synthetic, and decision-making skills, by examining a problem or a situation from all angles.

"The purpose of the case method is to make participants apply what they know, develop new ideas to manage a situation or solve a problem. The focus is more on the approach the participants uses rather than on the solution" (Nandavanam, Shivakumar K, 2012)



How to use it in the context of circular economy?

In the CE context, a case study might be a descriptive and exploratory analysis of a practice, a business activity, or an event.

Within the particularity of the circular economy topics, the case study method represents a good way of demonstrating how the circular economy is being applied in different projects or businesses. It can be a deep investigation through which entrepreneurs interested in circular economy or other stakeholders might gain a broader understanding of why that particular topic is investigated and what the general framework is.

The research can be into a company, allowing participants/trainees to examine key results, either positive or negative, and to go into details, thereby enabling them to gain new knowledge from the information presented.

Additionally, the case study method represents a good way of disseminating good business practices and ideas, as well as for the exchange of experiences and learning among countries. Finally, the case studies create awareness and allow people to see the benefits of the implementation of CE models and are a way of fostering trust in the circular economy. You can access the circular initiatives that already exist in [p 16](#).

Advantages and disadvantages of the case study method

Limitations

- ▶ Being very general, causing participants not to focus on details
- ▶ “Lacking scientific rigour and providing little basis for generalization of results to the wider population. The volume of data, together with the time restrictions in place, impacted on the depth of analysis that was possible within the available resources” (simplypsychology.org, 2019)
- ▶ Being potentially influenced by the researchers' own subjective feelings (researcher bias)
- ▶ Being time-consuming and expensive

Strengths

- ▶ Providing detailed (rich qualitative) information
- ▶ Providing insight for further research
- ▶ Considering problems based on real-life situations
- ▶ Identifying possible solutions
- ▶ Teaching new skills
- ▶ Engaging for participants
- ▶ Being usually based on real-life experiences and presenting a situation for a group to analyse and solve
- ▶ Being good for large and small group discussions
- ▶ Encouraging explanatory questions: what happened, how, and why?



3. Inviting Reflection: Brainstorming

What is brainstorming?

Brainstorming is necessary for achieving any project idea within a community. It is the process of a group searching for a solution together. The entities involved in this search come together in some way (physically, via electronic means, or even correspondence; there are many ways) to plot and formulate a solution for a problem.

How to use it?

What is key to the effective use of brainstorming strategies is to approach the process logically. A strategy should be formed which takes the group from pre-solution to solution in an efficient way. Brainstorming entails recognising the problem, determining a goal, understanding the means, and recognising the constraints. By logically and comprehensively approaching the brainstorming process, a precise strategy can be formed to meet a group's needs and improve the chances of reaching the end goal.

How to: Brainstorming

“Brainstorming” itself is part of a greater process, called “design thinking”, which is the process of development and refinement “to understand and address rapid changes in users’ environments.” (Interaction design foundation, n.d.). Before embarking on the brainstorming process, it is necessary for the group to establish:

- ▶ The problem: this is the effective **starting point**. The problem brings the group together in the first place. Recognition of the problem inspired the brainstorming process itself and will encourage it to move forward.
- ▶ The goal: this is the most important point. This determines **why** we are here and **what** we are doing. The entire brainstorming process can be vastly expedited by determining a precise goal, as, once all members of the brainstorming team have a clear idea of what conclusion is needed, they can concentrate their thinking in that direction.
- ▶ The means: what are the **available tools** that can be used to reach the goal? Beginning the brainstorming process with an understanding of what is available to move the team from brainstorming to the goal allows the team to pursue the goals in a manner which compliments the members’ capabilities and assets.
- ▶ Constraints: every brainstorming journey should begin with, and continue to consider, the constraints which the project faces. Constraints may include the time limit (when the project should be finished), the available budget and tools, and communication. Communication is key to a project’s success and can be one of the most lethal killers of a project. Good communication can speed a project along towards achieving its goal. Poor communication can put a stop to it before it finishes the brainstorming phase.



How to use it in the context of a Circular Economy?

In a CE context, brainstorming can be an asset for reflecting on the challenges posed by the linear model and thinking about possible solutions. This can be key to encouraging creativity and to innovatively develop businesses ideas and solutions that address economic goals, social values, and environmental benefits at the same time. Keep in mind that having guidelines and parameters in this kind of exercise can also help to ensure that the brainstorm focuses on the topic at hand (Konietzko, Bocken & Hultink, 2020).

One idea is to brainstorm about business models to “turn your product into a service for lifetime and sharing”. This kind of exercise is suggested by VentureWell (n.d.). the step by step is described below, as well as on their website:

Step 1: Brainstorm business models to turn your product into a service for lifetime and sharing.

Start a brainstorm session to generate ideas for changing the business model from a one-time purchase to a service for lifetime and sharing, where your company somehow stays involved in the life cycle of the product. This can be achieved by listing some ideas and the associated added value for the customer that will use the service as well as the added value for the business itself.

Step 2: Narrow down your brainstorm options to 3–4 winning ideas.

Use whatever tools you think are suitable to narrow down the brainstormed list to around three or four ideas. These can be selected based on criteria such as material reduction per functional unit of service, cost, or usability.

Step 3: For each winning idea, sketch and estimate the material reduction of that option.

For each of your winning ideas, draw a quick sketch or storyboard of how the customer uses the product and service and estimate the idea's percent reduction in material use per functional unit of service compared to the original product. For example, if one idea shares the product between two people but only lasts half as long, it does not save any material per functional unit. Something shared between two people and lasting twice as long would use just 1/4 the material per functional unit, a huge improvement. Show the math for how you got the estimated percent reduction for each idea.

Step 4: Choose one winning idea and illustrate it.

Choose one winning idea (or combination of ideas), based on the results of the percent reduction in material intensity. Create a high-quality image of the winning idea, either by hand or digitally, to clearly convey how the idea is different from the current product, and why it's a compelling design.

Step 5: Document your decision and brainstorm.



Create a PDF with the winning redesign (or the top few), and the reasons why it is the best option.

Self-Assessment can be based on a:

1. List of new ideas
2. List of each new idea's value to the customer
3. List of each new idea's value to the business
4. List of (or show labelled sketches of) top 3–4 ideas
5. List of the percent reduction in material use for each of these designs and show the math
6. Illustration of the winning design
7. Description of the winning design
8. Brief description of a convincing business case for the final design choice

Expected outcomes

By logically and comprehensively approaching the brainstorming process, a strategy can be formed and tailored to meet a group's needs and improve the chances of reaching the end goal. Brainstorming does not mean the goal will always be successful. However, by maintaining the problem and the goal as the focus throughout the brainstorming process, the group keeps their focus and reduces deviation which can unnecessarily disrupt the process or throw-off the project's timeline. Acknowledging the means makes the approach realistic. Recognising constraints ensures the approach will stay within the group's reach. Brainstorming does not ensure that a project will be completely effective all the time. It does, however, increase the chance that it will be efficacious.

4. Inviting interactive reflection and involvement: Storytelling

What is Storytelling?

Storytelling is an action, as well as a tool, which can be used in a process as a means of realising a goal. Through storytelling, an action or goal can be explained as necessary and demonstrated. It informs the listeners of the history, nature, and reality of a particular issue and builds a relationship between the listeners and issuers. Through storytelling, a sympathetic, emotional tie can be formed which invests the listeners in the issue. Storytelling unites people with projects and moves both along towards their goals (Merla, E. 2009).

Although it may not be viewed as the only solution or most effective solution, storytelling may be understood as a tool which builds connections in the hearts and minds of listeners and convinces them to become invested in working towards a goal. Storytelling builds a tangible connection between people, projects, and goals and brings them together in pursuit of something better.



Main Aspects

- ▶ **People:** these are both the listeners and the speakers in a story-telling scenario. Each person has their own particular ideas, interests, and values. Taking into consideration each of these points improves the chances of the message conveyed by the story being thoroughly and positively received by the listener. Therefore, storytelling must be tailored by the speakers to reach the targeted listeners. This is not to say that the listeners will not otherwise appreciate the message, but it increases the likelihood of the message being positively received and its goals being achieved. A well-told story motivates listeners to action. Storytelling plants the seeds for sympathy and fosters their growth.
- ▶ **Projects:** a well-ordered project increases the chances of a story convincing its listeners of a particular point. Storytelling can build the steps of a project and relate the project to its participants and target audience. Sympathy and an emotional connection with the project can be fostered through storytelling. The overt and underlying meanings of the project can be defined artistically or concisely, depending on the style chosen. Once defined, the meanings can be projected to the audience and their importance highlighted.
- ▶ **Goals:** the goals of any specific project are the main point of storytelling. They are the point of the efforts themselves. Storytelling highlights the predominant importance of goals and reminds the audience why a particular project is worth pursuing. It informs listeners of the current situation, the possible outcomes, and the ways in which those outcomes may be reached.

How to: Storytelling

Storytelling targets people. It comes to them in their environment and speaks to them directly. It emotionally involves them with a project and makes the end goal their goal. Projects, although standing on their own, are furthered by storytelling. Their purpose is captured by storytelling and projected to a wider audience. Every story has an ending; this is the goal. Storytelling reminds the audience of that goal and maintains determination to reach that goal.

Steps to Storytelling (Becka, 2016):

1. **Know your audience:** This is crucial to determine how long the story should be and what language you should be using.
2. **Make them care:** Make it clear why your audience should be interested in your story, and why is this relevant for them. Make them care, either emotionally, intellectually, or aesthetically. Tip: write it on a post-it note and stick it on your desk to remind yourself why this story matters.
3. **Set the scene:** Engage your audience's senses. Set the scene and provide your audience with context for the story.
4. **Be creative with chronology:** You can choose how you want to tell your story (e.g., start right into the action, at the end of the story, etc.).
5. **Know your punchline:** What is the purpose of telling the story? Be creative, but don't forget to always make it relevant and interesting.



6. **Engage your audience:** Use question to engage your audience and erase the boundary between them and your story.
7. **Use tension:** Be descriptive and expressive; get excited when telling the climatic moments in your story
8. **End with a grand finale:** There should always be closure in the story. You can, however, end with a "big question" to create suspense and a sense of awe.
9. **Don't be limited by words:** Use different assets such as pictures, videos, hashtags, and anything else you find effective, even physical objects.
10. **Enjoy the process:** You should also enjoy reliving the experience in your stories.

How to use it in the circular economy context?

Storytelling is particularly important when it comes to encouraging and promoting the circular economy. That is because storytelling plays a role in challenging naturalised narratives and creating new ones that are more sustainable and in line with the planetary boundaries.

"We've reached a point where we need a complete reset of how we design, construct, operate and dismantle our systems. We can't build new models for change on the back of a broken foundation. We need a new story that works for all". (GreenBiz, 2020).

As such, using storytelling to share stories that are based on facts and that support the transition to a circular economy can represent a crucial step in this process.

Expected Outcomes

Storytelling is not the only tool which can be used to achieve a project. Yet it is an important tool and one that, if utilised properly, can make great things happen.

Storytelling is valuable tool which builds a tangible connection between people, their projects, and the goals which those projects hope to achieve. It unites these three components together in pursuit of something better.

5. Drawing from own experiences and raising reflections: sharing, then analysing

How to: sharing experience, then analysing literature

Before the session

In this kind of methodology, we suggest that the trainer asks for the learners to read a selected bibliography before the session. This bibliography can be larger or shorter, but it is suggested to provide the students/learners with different fragments taken



from different books, preferably representing different approaches of the topic. Articles or websites can be also included if the trainers consider it convenient.

Good to know: The trainer can deliver a specific number of texts, which will ease the next session so as to make working groups.

During the session

The trainer will ask the students/learners to team up according to the article they previously read at home.

Every group will choose a speaker, who will present a case related to the topic of the session. After every intervention, the whole classroom will discuss in a debate, linking the specific case to the different approaches reflected on the articles read, offering proper argumentations on which approach is better connected to the presented case. All the groups will intervene following the same dynamic.

After all the groups have presented specific cases and had the corresponding discussion, the trainer will make all the bibliography available to all the students/learners for further reading.

How to use it in a CE context?

Similar to storytelling, this method can be useful for supporting reflection and analysis that, whilst challenging naturalised narratives rooted in the linear module perspective, has the potential to support the transition towards a circular economy.

6. Drawing from own experiences and raising reflections: Group discussions

The purpose of any discussion is to bring out at the same table diverse point of view, in order to develop a better perspective on the discussed topic.

We get a better picture of the problem and are able to grasp it if we share different perspectives on a topic. We are better prepared to deal with the issue through learning. This is exactly the main aim of a discussion.

What are Group Discussions?

“Group discussion may refer to a communicative situation that allows its participants to express views and opinions and share with other participants. It is a systematic oral exchange of information, views and opinions about a topic, issue, problem or situation among members of a group who share certain common objectives” (ctb.ku.edu)



How to use it in the circular economy context?

In a circular economy context, it allows participants interested in different CE topics to clarify some aspects related to the topic, to have a better understanding of it, and to become more actively involved, reinforcing the opportunity to express their views and have their doubts clarified.

Strengths

Group discussions are a good method of:

- ▶ Imparting and sharing knowledge
- ▶ Exploring opinions and attitudes on a topic
- ▶ Involving participants
- ▶ Helping to solve problems and make decisions

In addition, discussions are very effective when used after any session as a reflection. Small-group discussion allows participants who are uncomfortable in a large-group setting to express themselves, while also preventing the trainer from dominating the conversation.

Another strength is that group discussions may occur in small groups, whole groups and can be trainer-led or participant-led. The discussions can be more formal or informal and might involve discussion of a written text, though debate or also can be focused on a problem, issue, or topic that someone brought into discussion.

Generally, a group of two or three does not need a leader to have a successful conversation, but a leader or facilitator may also be useful if the number reaches five or six.

Aspects of a Group Discussion

According to Community Toolbox, an online community-building resource, an effective group discussion generally has a number of elements:

- ▶ All group members have an opportunity to talk, to openly share their own thoughts and feelings, and to pursue and finish their thoughts.
- ▶ All members of the group can hear others' ideas and feelings stated openly.
- ▶ Group members can safely test concepts that have not been completely established yet.
- ▶ Feedback, either positive or negative, is considered a constructive method of improvements and is encouraged among participants. This should be expressed in an honest and respectful manner.
- ▶ A variety of points of view are put forward and discussed.
- ▶ The discussion should not be dominated by any one participant.
- ▶ Arguments are based on the content of ideas and opinions, not on the people expressing them.
- ▶ There is an assumption that the participants work together to settle a conflict, solve an issue, develop a strategy, make a decision, find values on which



everyone can agree, or come to a conclusion from which it can move on to further debate.

How to run a group discussion

Here are some of the common tips to consider when you lead a group discussion (ctb.ku.edu, 2015).

- ▶ Choose the space (online/face to face).
- ▶ Bring materials to help the discussion along.
- ▶ Become familiar with the purpose and content of the discussion.
- ▶ Make sure everyone gets any necessary information, readings, or other material beforehand.
- ▶ Help the group establish ground rules.
- ▶ Think about leadership style and learning style.
- ▶ Generate an agenda or goals for the session.
- ▶ Lead discussions and provide a follow up (summary notes, recording etc).

7. Absorbing the information: Exercising

What are Exercises?

Exercises involve the audience and encourage them to be connected with the goal. It is also a dynamic method of education. There is no set way of designing an exercise, but there are a few ways to make sure the exercises are relatable for the audience. Relatability, in turn, builds resolution.

These activities are intended to be just basic ideas to start brainstorming other activities which may promote innovative ideas and thinking. They are designed to put the individual or group of individuals in proximity to the topic at hand and gain knowledge through experience of how it works.

Possible formats – How to run an Exercise

Exercises can occur in the following forms:

- ▶ **Individual.** Present the individual with three proposals on notecards regarding the project. Two are true and one is false. The individual should be asked to indicate which proposals is false. After finding it, they should be asked why it is false and to consider how they could amend the proposal to be true.
- ▶ **Group.** The group should be presented with pictures from projects in action. They should be asked to describe what they see, and from descriptions form conclusions about what they think the point of those projects are. After all projects have been described and explained, the group should be asked which they consider the most and least valuable. After explaining their answers, they should be given a sheet of paper and asked to consider how they might improve the least valuable project.



- ▶ **Interactive.** This is a type of “field trip”. A destination should be selected for the group. Before going to the destination, they should first be shown something like materials; for example, plastic recyclables in a dump. Going from this idea, the group or individual should be taken to a location that promotes processing of these materials. There, they will be able to see first-hand the work of circular economy. This allows a particular “hands-on” learning that inspires the individual or group with first-hand knowledge. First-hand knowledge is often inspirational to individuals, as they feel emotionally associated with the object of their experience. With this inspiration, they may be more likely to proliferate the circular economy experience.

How to use it in the circular economy context?

Doing exercises can be useful for put the reflections and inspiration learnt from theory into practice. This is an important step to realising that the circular economy is not only possible, but also offers a number of new possibilities, including business opportunities. As such, the three methods of running exercises can be explored. Individual and group exercises are important reflection and analysis methods, while interactive exercises can support activities to show learners the real benefits and applicability of the circular economy.

Expected Outcomes

These activities are by no means a guarantee of drive people to pursue lifestyles that are different from the norm, such as the circular economy. Rather, they hope to inspire people, as inspiration can be contagious and grow into something which makes a true and deep difference.

8. Absorbing the information: Learning by doing

What is “Learning by doing”?

This training method focuses on “making, producing, practicing, and observing” through direct experience of carrying out a task.

The goal of practicing leaning by doing is to engage participants into different practical activities through which they can learn how to solve problems, gain skills, and transfer information into real life situations.

It is a practical learning approach developed by John Dewey, which aims to create learning situations for participants to interact with the environment to adapt and learn

Aspects of learning by doing

This method uses real life situations as a key point for learning and it can be developed and practice “as embed learning within real world contexts, including laboratory,



workshop or studio work; apprenticeship; problem-based learning; case-based learning; project-based learning; inquiry-based learning; cooperative (work- or community-based) learning” (Bates, A.W. (Tony), (2019),

How to use it in the circular economy context

Learning by doing is an active learning method for teaching circular economy.

In the context of learning about circular economy topics, this method can be used in the process of better understanding how the transition from linear economy to CE and adopting of this approach can lead to production and efficiency in a company, firm/industry.

Through the learning by doing method, a trainer can bring into the world the CE concepts, meaning:

- ▶ to give participants hands-on experiencing the new model business model (the interaction between products and services)
- ▶ to develop new skills for example in preparing organic composting, design products, repair, and upgrade products
- ▶ to give participants an understanding of the advantages and limitations of different CE practices (repair, reuse, recycle)
- ▶ to enable participants to see the above practice into action’.

Within the circular economy context, this method can guide participants in various learning experience and in this way to expand their understanding of the circular economy and learn how the concept can be applied to different parts of the economy. As for example, the participants can explore how CE principles can be applied in different industries such as fashion industry, product design, etc.

How to facilitate learning by doing

The learning by doing path can be design by a trainer in 3 simple steps as following:

1. Share with your participants the theoretical concepts related with the CE concepts (use different methods to engage with your participants: audio-visual, written text, demonstration, group discussions)
2. Offer to the participants the space to apply in real-life situations what they have learned in the course. For instance, you can foster their understanding of the micro-level (product level) of the circular economy with a trip to a manufacturing company producing circular products.
 - a. Additionally, they can be encouraged to develop policy instruments to accelerate the transition towards a circular economy or to participate in “tear-down-labs (asking participants to take apart items, e.g. cell phones, to start thinking more deeply about repairability, disassembly, etc.)” (Kirchherr, J and Piscicelli, L, 2019)
3. Offer the participants space for reflection to understand and store information effectively. If the experience is new, give them time to think, reflect, revise and integrate the new skills, knowledge, and experience.



What about Proper lectures?

Lectures can be considered the epitome of traditional education: an expert talking about a topic in front of a listening audience. It can be both inspiring or boring depending in several aspects: the interest of the audience in the topic itself, the communication style of the lecturer, the display through which the lecture is given (face-to-face, streaming, on-line recording...), and the characteristics of the audience itself (number of attendees, cohesion of the group, if the attendance is voluntary or mandatory, etc.). Hence, when discussing innovative concepts in a more traditional context, it is important to have the right skills to achieve an effective and successful lecture.

Preparation

Know the material

The lecturer must know which kind of material is going to be used and be able to easily manage it. For instance, if it's going to be a specific bibliography, short clips or a slide presentation, the expert has to know which kind of resources best support his/her lecture in order to transmit the knowledge or skills that he/she is about to transfer to the audience.

Know the audience

Is it the same to give a lecture to a group of engineers and to a group of doctors? The lecturer has to know his/her public and adapt the contents and its delivery, in order to appropriately connect with them with success.

Know the room

If it is going to be a face-to-face session, the lecturer should know the features of the room: size, audio quality, electronic devices available. Even the number of sockets available can make the difference between a proper lecture and a poor one.

Delivery

Know your objective

A lecturer should be able to sum up the key message of his/her lecture in one sentence. A good development strategy is to set up an initial question and answer it during the course of the session.

Work on the narrative of your lecture

See if your lecture has a clear structure of a beginning, a middle, and an end and make sure you cover the Who, What, Why and How of your topic (Kahle, 2020). A lecture will have a stronger impact on the audience if they are interested in the development or "what comes after". Maintain their motivation. If you want to go further, connect your story to the audience's personal lives: nothing works better than having them identified with your speech.



Engage your audience

The success of a lecture highly depends on the flow created between the lecturer and the audience. It is more likely to connect with them by adapting the language and gestures to their way of communication, than by expecting them to adapt to you.

Do not forget that the participation of your listeners is key: make questions, establish a conversation between you and them. Empower them, learn from them (Kahle, 2020).

Control the interactive possibilities

Power Point is ok, but have you got the skills to also make it attractive? Have you dived into other possibilities? Audio, video, video-calls, streaming, gaming... In the era of technology, do not let the listener's mobile phones grab their attention from you! Involve their mobile phones instead to support your lecture. Involve other tech resources and interactive tools to make it attractive: the sky is the limit.

Evaluation

It is fundamental to know from your audience how the lecture went. Sometimes, the general atmosphere will tell you a lot, but it never hurts to use a quick evaluation form to measure your audience success – or any other feedback technique.



A step outside the Lecture Environment: Workshops

Running a workshop is a teaching technique that is very different from other kinds of approaches. It is different from traditional lectures because workshops are **eminently practical**. While lectures are more based on theory and on the presentation of contents, workshops focus more on the development of skills and competencies.

Normally, the features of workshops differ from lectures: the number of participants is smaller than in traditional lessons in order to favour their active participation during the session and guarantee their successful performance according to the goals of the workshop.

Here we want to propose to you is how to set up workshops under an even more practical approach: the flipped classroom.

The flipped classroom approach to workshops

The flipped classroom is a pedagogical approach in which direct learning takes place outside the classroom, in which class time is used to do activities that involve the development of more complex cognitive processes, for which the teacher's experience is necessary (Kit De Pedagogía Y Tic, 2020).

Its main objective is to improve the teaching-learning process by doing simple learning activities outside the classroom (like observing, memorizing, summarizing, etc.) or in the classroom. More complex activities (such as reasoning, examination, analysis, etc.) that require peer interaction and the teacher's facilitation can also be done in the classroom (Kit De Pedagogía Y Tic, 2020).

Its main features are active learning, change of the traditional teacher-learner role, individualised learning, ICT, inclusivity, and continuous assessment.

Outside the classroom

Teacher / trainer

- ▶ Plan and design the contents of the workshop to be developed in the classroom, caring about the whole learning-teaching process. Consider the approaches you would like to involve (Project-Based Learning, cooperative learning...)
- ▶ Plan and design those activities to be done autonomously by the students/learners outside the classroom: watching videos, reading, answering a quiz...
- ▶ Include technology to promote active learning
- ▶ Design assessment activities that promote students/learners' learning

Learners

Students/learners should be proactive and complete the suggested activities before class, in order to make the most of each session.



In the classroom

Teacher / trainer

- ▶ Guide and facilitates the learners, watching their special needs as well as their rhythm as a group
- ▶ Provides continuous feedback to the group
- ▶ Creates spaces for assessment and self-assessment

Learners

The students/learners should commit to carrying out the activities and considering the trainer's feedback.

Advantages of the flipped classroom approach

- ▶ Enhances the learners' commitment towards their own learning process
- ▶ Involves technological resources that improve 2.0 interaction and proactivity
- ▶ Allows students to learn at their own pace
- ▶ Optimises the time shared in the classroom
- ▶ Offers a more individualised teaching approach
- ▶ Improves learners' and teachers' motivation

Setting up a flipped workshop – a Suggestion

The Kahoot method

- ▶ Before the class

The trainer provides the students/learners with the learning materials. The materials can be from more theoretical to more practical, depending on the objective of the session.

Some ideas can be text reading, video watching, participating in a forum, practicing exercises, etc.

The students/learners have to go through them before the lesson.

- ▶ During the class

At the beginning of the lesson, the trainer will send a Kahoot quiz to his/her students/learners. This quiz will contain questions about key topics of the session. The results of the quiz will reveal both the content which the students/learners have a clearer understanding of and the content which they need special support with during the lesson.

This technique will help the learners to know better which parts they need to work harder on and which are their strengths as individuals and as a group. On the other hand, this approach will help the trainer to deeply understand the rhythm of the group and which the aspects that need to be reinforced in the face-to-face sessions are.



How to: Circular Economy Workshops

Now that you understand what workshops are, and how they can be run, we will look into some ideas for using workshops to introduce the circular economy, its concepts, and inspire circular practices and thinking.

When searching online for workshops to join and learn about the circular economy, you will find they can have various shapes and formats. It can be an informative workshop, a reflective workshop, or even a practical one, in which the participants work hands-on on some kind of product to apply the practices and principles of the circular economy.

For instance, a circular economy workshop can be an upcycling activity, in which the participants can improve one product to allow it to be reused instead of disposed of. This however requires some handicraft skills from the facilitator, or from the participants who can aid themselves.

Workshops are therefore a type of activity that allow you to embrace the methods previously presented in different forms and combinations – you can choose the ones that are most suited to the topic at hand and to the objectives you have.

Whatever shape your workshop has, it is important to consider that, in order to promote the transition towards a circular economy, it is crucial to raise reflections and to have a real impact on the learners' thinking and practices.

Thus, there are key aspects to consider in a workshop targeting the circular economy:

- ▶ Define the goal of the workshop: what is the key information you want your learners to be aware of by the end of the activity?
- ▶ Start with relevant information regarding the goal you have defined: it can be a case study, an article or other learning materials, pictures, or even a video showing information and data about issues of the linear economy, for instance.
- ▶ Zoom-in – Give time for the learners to reflect and interact in some kind of activity, preferably in small groups: this can be the development of a diagram, a brainstorm activity, a storytelling activity, an exercise, or a game of some sort (such as card games with pictures, or an interactive activity that gets the participants reflecting on the linear vs the circular system, etc.), the drafting of recommendations, the exchange of ideas among them, etc.
- ▶ Zoom-out – Group discussion: after the activity is completed in the smaller groups, go back to the larger group and have them discuss their experience. This is likely to raise important reflections, such as: have the groups done anything differently? Have they achieved different outcomes? Have they perceived things differently? **IMPORTANT:** while this is happening, be sure to write down key topics and words that can be useful in the next step, when you will draw conclusions from these reflections.
- ▶ Wrap-up – Drawing on the points raised in the group discussion, have the learners draw their own conclusions? What is the issue with the topic presented? What needs to be changed? Why is it important for it to change? How can they play a part in the process of making this change happen?



It is easy to see here that the key to any activity related to the circular economy is to get the learners thinking, reflecting, and drawing their own conclusions. This is crucial for them to make their own choices and think about how changes can be implemented in their lives in a tangible manner. Thus, in a circular economy workshop, be sure not to only present information – raise the information. Encourage the learners to get there themselves. Make them feel like they can actually be a part of the process.

Tips for your Training Activity

How to conduct an effective training?

Do you want to develop a new skill, learn something useful, or just upskill your new knowledge, training is essential? How can you create an effective training programme, in order to create impact?

First of all, in order to meet the participants' objectives in an enjoyable and engaging way for everyone involved, you should follow a systematic approach.

Here are some specific tips and techniques to help any trainer to develop an effective training course:

- ▶ **Assessing training needs is a good way to develop a training programme:** It is important before starting any training programme to use a training needs assessment in order to identify what the training needs of the participants are. In this way, the trainer acquires have an overview of what the participants' needs and knowledge gaps are.
- ▶ **Set organisational training objectives:** These previously identified needs and gaps should be evaluated, prioritised and converted into the training priorities of the company.
- ▶ **Create a training action plan:** The next step for any trainer is to detail how is going to create and deliver the training course. In this phase the trainer will create and detailed a comprehensive action plan that includes learning theories, guidelines, materials, resources etc. The trainer will consider participants needs, learning style, expectations, and resources.
- ▶ **Implement the training:** In the implementation step, the training programme created comes to life. Within this step the programme is promoted, launched, and implemented. This part is very important for analysing the feedback of participants, making adjustments if needed, and seeing if the programme runs effectively.
- ▶ **Evaluate & revise training:** The last step is dedicated to evaluation and revision. The scope of this part is to see if the training programme met the training objectives. Feedback should be requested from the participants and evaluated, with an action plan being revised accordingly.



Tips for delivering the training

- ▶ Be precise from the beginning of the class (communicate clearly the learning objectives, what you are going to cover, explain key points, and relate to any other information that the participants/learners need to know).
- ▶ Conclude each meeting session with a summary of what you have discussed. Use repetition to help participants to understand and retain information.
- ▶ Create a better learning environment by guiding participants through the materials or multimedia content, explaining to them what to look for and what to remember. „Explaining the purpose of the multimedia ensures an effective reception for its information” (simplifytraining.com).
- ▶ Involve participants in the learning topic and ask them to share their experiences, since they might have valuable information to contribute with. By listening to different voices and experiences, the participants can get more on the subject than listening just the trainer.
- ▶ Take time to analyse what works and what doesn't work. Use various technique or methods that click with the group.
- ▶ Keep track of time, start on time and finish at the promised schedule. Don't wait for late arrivals to hold up the class. Run the class according to the timetable and don't get off track too far.
- ▶ “Put yourself in their shoes—or seats. Give frequent breaks, especially for half-day or all-day sessions” (Source: simplifytraining.com).
- ▶ Seek input on the training session. If a trainee volunteers to share his or her opinions in person, reviews work better when they are written and anonymous. Input from trainees is crucial for making the next session and the overall training program more relevant.

Other tips that give to participants opportunities to practice as they learn throughout the training.

- ▶ Tell interesting stories
- ▶ Ask thought-provoking questions
- ▶ Show video clip and engage learners by discussing what they watched
- ▶ Use pictures to explain a process or unfamiliar concept
- ▶ Use scenarios to help participant imagine how they might apply what they are learning
- ▶ Give them hands-on exercises so they can practice what they are learning.
- ▶ Run non-competitive quizzes
- ▶ Make technology, such as mobile devices, part of the learning experience (e.g., use an audience responses system or ask participant to look up an answer online or research information)” (cdc.gov, 2018)

Things to consider before and during an online training

- ▶ Check the devices (sounds and visibility)
- ▶ Use different tools as Kahoot, or breakout rooms to develop practical exercises and engage participants



- ▶ Ask questions to engage participants, motivate them to contribute, and capture their interest and attention
- ▶ Keep track of time and understand that your participants have also other responsibilities
- ▶ Share the materials in advance
- ▶ Choose a trainer who is visible and active, empathic and has the skills to teach online
- ▶ Be clear on your goals and use evaluation forms

List of common mistakes and suggested solutions

Common Mistakes

1. **Avoid mass training:** The idea of creating a training that suits all participants is not a productive option. Rather, customising the training to individuals' needs might be helpful as concerns establishing a clear role and expectations while opening up for further discussions.
2. **Avoid unclear goals and objectives:** If a trainer does not have clearly in mind what the objectives of the training programme are and is not able to share them with the participants, it can create confusion. Thus, it is important to know your goals and the steps to get there, by using your objectives. Use SMART objectives, be precise, and take specific actions and measurable steps to make sure that you reach your goals.
3. **Avoid spending time creating a plan that is not feasible:** There is no point in designing a strategy that is not realistic. Think about the time frame, budget, and tools available to you and then determine what can be done.
4. **Avoid overloading the participants with materials or tasks:** This common mistake can make participants lose their initial enthusiasm or engagement. It has a negative effect, especially for the participants who take a specific training during their free moments, during their commute or between meetings. An efficient solution would be to break the content into small pieces that can be handled easier.
5. **Avoid boring content:** One of the common training mistakes is to deliver a boring content. No training participant will be excited to get engaged in or pay attention to the training if the content is delivered in a boring manner. Talking about business and CE topics can be fun and entertaining too!

Solutions: Open the training course with an attention-getter (Source: cdc.gov (2018):

- ▶ Tell them a surprising fact or statistic, or an interesting story.
- ▶ Ask a thought-provoking question.
- ▶ Ask them to share what they hope to get from the training.



Another common mistake: Missing the point

Having relevant content connected to the reality context is vital for any adult participant in a training activity. Anything that is too academic, theoretic, or does not help with the company's bottom line should not be part of the curriculum. And what is left should also be simplified, distilled, and re-written so that it fits an audience of professional corporate employees trying to get better at their jobs" (Andriotis, N., 2017).

Solution: Describe an activity that you can use to inspire learners to apply the new content.

- ▶ **Ideas:** Use role-playing, conversation in small groups, or questions to find the responses that trigger critical thought or study.





TRAINERS' MANUAL

Suggestions of Exercises



Introduction

Exercises are the basis for practical learning. They are fundamental to cementing the theoretical knowledge acquired in training and they put into practice all the skills developed. Exercises need to have objectives and ensure the learners' progress throughout their development. It is expected that after having accomplished them, the learners will have achieved the objectives set or identified their main difficulties or those areas they wish to improve in.

Undoubtedly, teachers and trainers play a key role in the design, development, implementation, and evaluation of the exercises to be done inside or outside the classroom. Eventually, they are the ones who can identify and tackle the strengths and weaknesses of their group of learners.

Next, we suggest some exercises that can orient and help the trainers' development and be used as a reference. For more exercise-related inspiration, please access our [training modules](#).

Carbon footprint test

Objective:

To find out the carbon footprint of each learner based on day-by-day life habits. Discuss possible measures to diminish the footprint at individual level.

Before going deep in the subject, it is suggested to conduct a short test to discover each learner's carbon footprint. By answering several questions related to every-day life habits, each learner can discover what his/her carbon footprint is, measured in kilogrammes per year. The carbon footprint test classifies the carbon footprint according to different areas of life, such as food, transportation, living and shopping habits. It can give specific tips in each area on how to diminish their impact. Hence, every learner will be able to find out in which areas they have the least impact and in which they still have room for improvement. These kinds of tests are available and free online.

Leading the activity

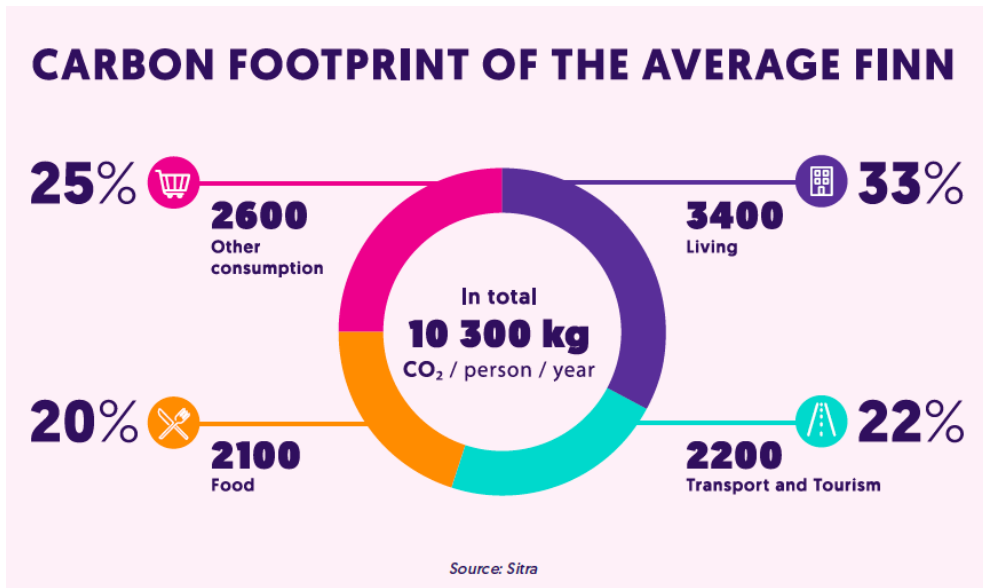
A suggestion for this exercise is be the following (From a waste economy to a circular economy, n.d.):

- ▶ Learners do the carbon footprint test individually
- ▶ Learners pair up to compare the results of their respective tests
- ▶ Each member of the pair identifies those areas they could improve in and gives specific advice to his/her partner on how to reduce his/her carbon footprint.
- ▶ Discussion as a group of the main findings, solutions found, and conclusions.



Some carbon footprint tests are the following:

- ▶ <https://lifestyletest.sitra.fi/>
- ▶ <https://footprint.wwf.org.uk/#/>



(From a waste economy to a circular economy, n.d.)

Circular economy in mobile phones

Objective:

To identify features of circular economy in a specific product by comparing and discussing.

Leading the activity

The facilitator will instruct the participants to watch the following videos and compare how one product is more circular than the other.

Fairphone 3 launch
(August 2019)
(Fairphone, 2019)



iPhone 11 launch
(September 2019)
(Youtube commercials, 2019)



Then, the facilitator will ask the participants to answer the following questions:

- ▶ What kind of products are these advertisements showing?
- ▶ What are the similarities between both products? What about the differences?
- ▶ What is the value proposition of each of them?
- ▶ Could you identify features of circular economy in any of them? Which features do you identify?
- ▶ Could you suggest ideas to promote circular economy in the production and consumption of this kind of product?

What is your Food waste?

Objective:

Leading the activity

The trainer will ask the learners to take pictures of the waste food they dispose of over the course of seven days. As waste food, we understand all those fresh products or non-perishable food, cooked or raw, which were edible but were not eaten.

The facilitator instructs the participants to share their pictures with the group and discuss the following after the seven days period (From a waste economy to a circular economy, n.d.):

- ▶ How much food is there?
- ▶ What does all the food waste have in common?
- ▶ Estimate the monthly financial impact of the food loss
- ▶ How could we prevent the food waste? Do you know any community initiative to prevent it?

Good to know - For the trainer

Data from the FAO reveals that:

“Approximately 14 percent of the food produced for consumption globally each year is lost between harvest and the wholesale market. 38 percent of total energy consumption in the global food system is utilised to produce food that is either lost or wasted”. (FAO, 2015a).

“Food redistribution activities can address food insecurity and prevent the wastage of food surpluses, ensuring economic, environmental, and social benefits. Reducing food waste at the consumer level can save money.” (Stop food loss and waste. For the people. For the planet., 2020)



What should we do as consumers?

“Consumers must stock and store their food properly in the household and pay attention to date marking to reduce food waste. Consumers, where possible, must donate unwanted, unopened and intact food to charities that can redistribute the food to those in need.” (Stop food loss and waste. For the people. For the planet. 2020)

Developing a Group Project

Preparation

Before the project is carried out, some preparational work must be done. Participants must be found in accordance with the activity's goal. As this activity generally looks at improving knowledge, it is not necessary to find participants with an extensive knowledge of the circular economy.

Material

- ▶ Various pictures related to the circular economy topic (circular economy in action or graphics): these must be pre-selected and printed so that they can be handed out to the group.
- ▶ Small Post-its
- ▶ Pens

How to

Time and Duration

The number of pictures should roughly correspond to the amount of time for discussion: For instance, 2 minutes should be given for each person to make a description and another 2 minutes for them to make conclusions about the projects from the pictures. In total, five minutes (adding an additional minute in case it is necessary) should be needed per person to describe each picture. If time allows, it is possible that each person can describe two pictures. This is for the facilitator to decide.

Step-by-step

- ▶ Stage I – Introduction

A group of participants will be invited to a setting where there is sufficient available seating for all members to be seated comfortably. Seating should be arranged so that all participants can see each other.



Keep in mind: Introductions should be conducted in order for all participants to feel acquainted and comfortable. This is important, as the exercise works most optimally when there is a baseline of trust among members and participants feel comfortable speaking in front of each other.

► Stage II – Understanding the “ground-zero”

After introductions, the activity facilitator should introduce the idea of circular economy and explain the most important take-aways. Each group member should be asked about their knowledge of the circular economy. This knowledge is the “ground-zero” from which the activity will endeavour to build a greater understanding.

► Stage III – Participants' understandings

Each person should be given one (at the minimum) picture expressing some aspect of the circular economy.

After looking at the picture, each person should be asked by the activity facilitator to express to the group their impressions of the picture and describe what they see.

They should be asked, based on this, to make conclusions about each project's purpose. As the project progresses, individuals may find they are beginning to adjust their thinking and perceptions as other possibilities are named.

► Stage IV – Feedback by Facilitator

After each person describes their impressions, the facilitator may ask them to place their pictures on the ground so that all group members may see the pictures. The facilitator should review each picture very briefly, highlighting what makes each picture representative of “circular practices/the circular economy”.

► Stage V – Group Discussion

A group discussion should then be conducted, with the topic of which project the group feels is most valuable and which is the least valuable. The least valuable project should then be written on a board or large piece of paper.

The facilitator should distribute small “post-it” pads, along with pens, and ask group members to write ideas for how the idea could be improved to spread the idea of the circular economy more effectively.

► Stage VI – Wrapping up

After all members have put their suggestions on the board or on a piece of paper, the group should be asked to vote by a show of hands on the three suggestions they feel are the most valuable.

A final discussion will briefly discuss why these suggestions are the best and how they will help in promoting a circular economy.



After the discussion concludes, the meeting may be adjourned. Or, if there is a general sense of agreement from group members, there may be a brief discussion about how their ideas and perceptions of the circular economy changed after the exercised.

Another way to transfer knowledge: Mentorship programs

Introduction

As the Cambridge Dictionary of English defines it, mentorship is “the activity of giving a younger or less experienced person help and advice over a period of time, especially at work or school” (MENTORSHIP | meaning in the Cambridge English Dictionary, 2020).

Mentoring is a relationship between two counterparts: mentor and mentee. The mentor is the more experienced party, giving support and offering knowledge, while the mentee is the one seeking guidance. For this relationship to work, constructive feedback and trust are needed so that the mentee can further their learning and reach important decisions.

A mentorship program is thus an initiative to help newcomers to adapt themselves faster and better to a given field, professional in this case, and to learn from those with more experience in order to grow in a given field or situation. It is an effort to organise resources and personnel to support capacity-building within an organisation or in the context of self-employment.

How mentorship can be valuable for those you train

One of the primary values of mentorship as opposed to a training session or course is its timeframe. While the latter may be short and last only some days, mentorship may last over a much longer time period, entailing short but regular mentoring sessions.

Mentorship is a useful tool for both experienced workers and newcomers. For the former, it is a way of ensuring capacity-building and good results over time, and for the latter, it will help them prepare for working in a new job post or managing their own business initiative. It is a solution for both of their interests: capacity building and learning, to give a better performance learning from first-hand experiences.

Parties in a mentorship

The Planning Institute of Australia regularly updates a *Mentoring Program Handbook* where they explain their internal mentoring program and explain the roles, responsibilities and opportunities of each party (MENTORING PROGRAM HANDBOOK FOR MENTEES AND MENTORS, 2019):



- ▶ **Mentors:** “they contribute to the development of the future of the planning profession, improve management, expand professional networks, transfer and recognition of skills and knowledge,”
- ▶ **Mentees:** “develop communication skills and knowledge, build professional networks and a support system, increase confidence and self-esteem, discuss and learn theoretical and practical issues with a planner, a confidential opportunity to discuss workplace issues, receive support and guidance to achieve career goals”,
- ▶ **Employer of mentor/mentee (the mentor can also be the employer):** “increase productivity of both mentor and mentee, improve management and technical skills, discovery of latent talent, re-motivation of senior staff (mentors), improved retention of skilled staff.”

Considerations when mentoring

Types of mentorship

There exist multiple different types of mentoring. Out of these, those most likely to be relevant to U-Eco are traditional **one-on-one mentoring** (broadly what is discussed here) and **distance mentoring** (due to possible social distancing requirements).

Other types of mentoring, however, may be applicable in other situations. Where the pool or mentees is large, one or even multiple mentors can work with them in a large gathering, or **group mentoring**. Similarly, **speed mentoring** sees one mentee receive guidance from multiple mentors, but at different times, cycling through them. **Peer mentoring** is more of an egalitarian form where people with similar experience support each other mutually. **Reverse mentoring**, meanwhile, sees a less experienced person mentor someone with more experience, perhaps to guide them in a specific new, developing area of their field. (What is Mentoring? 2020)



Chemistry between mentor and mentee

It is important for mentors and mentees to have a good relationship. The *Mentoring Program Handbook* of the Planning Institute of Australia, which is focused on larger organisations, recommends carrying out a matching procedure (*Mentoring Program Handbook for Mentees and Mentors*). In the context of an organisation with more than one possible mentor, it would be advisable to conduct a questionnaire to match mentors and mentees based on their backgrounds and interests.

It is also highly recommended for the relationship between mentor and a mentee to be rather informal. Mentoring is not training or coaching; it is also a professional relationship but one which is also quite personal, since motivations and achievements are at stake. Maintaining a less formal interaction may benefit the personal chemistry between the two.

Setting objectives

Before the mentorship program, both mentor and mentee should determine where the programme is going and what the expectations of it are. Given the objectives and the confidence between mentor and mentee, the latter should be able to share with the former their ideas, needs, and expectations. The mentee ought to have a clear idea of these and let their mentor know so that the mentoring can be as useful and as targeted to their individual case as possible.

The mentor will not have all the answers but has experience in and knowledge of the given subject. Given this, they can make their recommendations, advice, and even the questions they ask tailored and realistic.

Feedback

During the mentorship, mentees will continue their attempt to move into circular economy employment, with more or less guidance from their mentors. This will not be a learning process until the mentor gives them feedback on their efforts.

It is necessary to keep mentees updated on their strengths and weaknesses, on what they do properly, and on what they could do better, always in a constructive manner. It is important not only to mention what is improvable, but also what is done correctly and when there are positive developments.

On the other hand, mentees have to be open to criticism. Mentorship is for mentees to improve their capabilities and skills, so it is very important for them to have an open mind and to be ready to learn, also from their mistakes.

Offering subtle guidance

The sole idea of mentorship is not for the mentee to follow the guidance of the mentor step by step. The mentor's task is not solving the problems of the mentees, but to help them finding the solution by themselves.

At the end of the mentorship program, mentees should find it easier to make decisions of their own and to reflect on their opinions and thoughts.



Mentorship with the U-Eco materials

The previously developed [U-Eco training modules](#) are aimed at professionals interested in broadening their knowledge of circular economy and, in particular, individuals interested in engaging with entrepreneurship in a circular economy context. Thus, a mentorship program for your target learners may consist of a more experienced professional circular economy practitioner offering feedback to and discussing ideas with a less experienced one.

While utilising the training modules of U-Eco in a mentorship format, some activities are helpful to support the transferring of knowledge and the effective learning of the participants. Read through them and pick one, some or even all to implement in your training:

SWOT Analysis

This activity is particularly relevant when adventuring in the circular economy context. It is important for new entrepreneurs to be aware of the risks and challenges they might have to overcome and to be able to contrast them with the opportunities in order to be able to profit as much as possible and effectively direct their energies and efforts in their new endeavours.

A SWOT analysis entails the mapping of the strengths, weaknesses, opportunities and threats of the idea the person has. In relation to the U-Eco material and within the circular economy context, encourage your mentees to include there the factors that are related to the things they have learnt so far: What are the opportunities the political framework offers, that they could benefit from? What are the challenges? What are the aspects of a circular economy that could be explored in their business idea? How could they use it to promote their business and attract the target audience?

Based on that, help them to create an action plan: How can they use their strengths to ward off the threats? How can they use their options to overcome the weaknesses?

Keep in mind: Strengths and weaknesses are internal factors to the idea, while opportunities and threats are external.

INTERNAL:	STRENGTHS	WEAKNESSES
EXTERNAL:	OPPORTUNITIES	THREATS

Portrait

This activity is relevant in particular for individuals who want to develop their skills and knowledge and further improve their ability to work in a circular economy context. Use this activity to help your mentees to map their strengths and weaknesses with the help of the information they have seen so far.



	STRENGTHS	WEAKNESSES
EDUCATION		
EXPERIENCE		
INDUSTRY KNOWLEDGE		
NETWORK		

List of Knowledge and its Future Applications

This activity is mainly meant to test if your mentees have learnt the basic principles of a circular economy, the importance of it, how to support the transition towards a circular economy, and how to use its principles and practices to promote their businesses and professional goals. Help them to fill out the table with the information learnt so far!

What circular economy principle/practice can I use/support/benefit from?	How can I use/support/benefit from it?	Why should I use this principle/practice in my professional goals/business?

Evaluate the Mentorship

Evaluating what you have learnt in the mentorship activity is done for several reasons. It is a way to map the mentorship results and the experiences that have been made, which are good for improving future activities. Asking what went well and what could be done better makes the results clearer and strengthens mentorship skills. Use the questions below to communicate with your mentees and gather feedback. And don't forget to include your own reflections and experience as well!

- ▶ **What went well?**
- ▶ **What went less well?**
- ▶ **What would you do differently?**
- ▶ **What would your mentees wish that you had done differently?**
- ▶ **What happens now?**
- ▶ **What have you learned?**
- ▶ **What have your mentees learned?**



References

Fairphone, 2019. The Phone That Cares For People And Planet | Fairphone 3 | Fairphone. [video] Available at: <<https://www.youtube.com/watch?v=S0fbZerTUjY>> [Accessed 10 December 2020].

From A Waste Economy To A Circular Economy, n.d. [ebook] Helsinki: Bisneskurssit. Available at: <<https://bisneskurssit.fi/kiertotalous/>> [Accessed 10 December 2020].

Stop Food Loss And Waste. For The People. For The Planet. 2020. [ebook] Food and Agriculture Organization for the United Nations, pp.3, 4. Available at: <<http://www.fao.org/3/cb0641en/CB0641EN.pdf>> [Accessed 10 December 2020].

Youtube commercials, 2019. Introducing Iphone 11 — Apple. [video] Available at: <<https://www.youtube.com/watch?v=IPvSAtAsMM4>> [Accessed 10 December 2020].

Dictionary.cambridge.org. 2020. CONCEPT | Significado, Definición En El Cambridge English Dictionary. [online] Available at: <<https://dictionary.cambridge.org/es-LA/dictionary/english/concept>> [Accessed 25 November 2020].

Kahle, C., 2020. 5 Key Steps To Structuring An Effective Lecture | Zeetings. [online] Zeetings.com. Available at: <<https://www.zeetings.com/blog/5-key-steps-to-structuring-an-effective-lecture/>> [Accessed 25 November 2020].

Writing Lab, 2020. Explaining A Concept. [online] Available at: <<https://blogs.wp.missouristate.edu/writinglab/rhetoric/explaining-a-concept/>> [Accessed 25 November 2020].

Kit de Pedagogía y TIC, 2020. Aprendizaje Invertido (Flipped Classroom). [online] Available at: <<http://www3.gobiernodecanarias.org/medusa/ecoescuela/pedagogic/aprendizaje-invertido-flipped-classroom/>> [Accessed 26 November 2020].

Dictionary.cambridge.org. 2020. MENTORSHIP | Meaning In The Cambridge English Dictionary. [online] Available at: <<https://dictionary.cambridge.org/dictionary/english/mentorship>> [Accessed 30 November 2020].

MENTORING PROGRAM HANDBOOK FOR MENTEES AND MENTORS, 2019. [ebook] Barton: Planning Institute Australia. Available at: <<https://www.planning.org.au/documents/item/10725>> [Accessed 1 December 2020].

What Is Mentoring? 2020 [online] Available at: <<https://www.td.org/what-is-mentoring>> [Accessed 3 December 2020].



U-ECO TRAINERS' MANUAL – REFERENCES

cdc.gov, 2018. How to Captivate and Motivate Adult Learners: A Guide for Instructors Providing In-Person Public Health Training. Atlanta, GA: CDC, 2018, pg.12.[pdf], Available at: https://www.cdc.gov/trainingdevelopment/pdf/AdultLearningGuide_508.pdf, Accessed: December 2020

Eoghan,Q, 2018). 10 Common Training Mistakes to Avoid [Online], Available at: <https://www.learnupon.com/blog/10-common-training-mistakes/>, Accessed: December 2020

simplifytraining.com, How to Conduct an Effective Training Session [Online], Available at: <https://simplifytraining.com/article/how-to-conduct-an-effective-training-session/>, Accessed: December 2020

Andriotis, N, 2017. The 6 common enterprise training mistakes and how to avoid them [Online], Available at: <https://www.efrontlearning.com/blog/2018/01/enterprise-training-mistakes-avoid.html>, Accessed: December 2020

Nandavanam, Shivakumar K, 2012. The Case Study Method in Training and Management Education, [Online], Available at: https://www.researchgate.net/publication/256038678_The_Case_Study_Method_in_Training_and_Management_Education, Accessed: December 2020

pressacademia.org, 2018. Definition of case study, [Online], Available, at:<https://www.pressacademia.org>, Accessed: December 2020

simplypsychology.org, 2019. Case study method [Online], Available at: <https://www.simplypsychology.org/case-study.html>

ctb.ku.edu, 2015. Community tool box, Techniques for leading group discussions[Online], Available at: <https://ctb.ku.edu/en/table-of-contents/leadership/group-facilitation/group-discussions/main>, Accessed: December 2020

Bates, A.W. (Tony), 2019. Guidelines for designing teaching and learning, [Online], Available at: <https://opentextbc.ca/teachinginadigitalage/chapter/4-4-models-for-teaching-by-doing/>, Accessed: December 2020

Kirchherr, J and Piscicelli, L, 2019. Towards an Education for the Circular Economy (ECE): Five Teaching Principles and a Case Study [pdf], Available at: <https://www.sciencedirect.com/science/article/pii/S0921344919303015>, Accessed : December 2020

Ellen MacArthur Foundation, 2020. Higher Education Resources. Available at: <https://www.ellenmacarthurfoundation.org/assets/downloads/Higher-Education-Resource.pdf>

Ellen MacArthur Foundation, 2017. Concept. Available at: <https://www.ellenmacarthurfoundation.org/circular-economy/concept>



U-ECO TRAINERS' MANUAL – REFERENCES

Serintel, n.d. Training Methodology Available at: <https://serintel.org/training-methodology/>

Green Alliance, 2015. *The social benefits of a circular economy: lessons from the UK*. Available at: <https://www.green-alliance.org.uk/resources/The%20social%20benefits%20of%20a%20circular%20economy.pdf>

OHCHR, n.d. *About human rights and the environment* Available at: <https://www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/AboutHRandEnvironment.aspx#:~:text=All%20human%20beings%20depend%20on,unable%20to%20fulfil%20our%20aspirations.>

World Health Organization, 2018. Achieving Health Benefits From Carbon Reductions. Available at: https://www.euro.who.int/_data/assets/pdf_file/0004/386923/health-carbon-reductions-eng.pdf

Van Loenhoud, Steiger & Lauenroth, 2017. “The Goal is to Solve the Problem”. *Requirements for Engineering Magazine*. Available at: <https://requirements.ireb.org/articles/the-goal-is-to-solve-the-problem>

Kolk, Melinda, 2017. “What is Project-Based Learning (PLB) and Why Use It?”. *Tech4Learning*. Available at <https://web.tech4learning.com/what-is-project-based-learning-and-why-use-it>

Merla, E. 2009. Storytelling is for kids— and project managers. Paper presented at PMI® Global Congress 2009—Asia Pacific, Kuala Lumpur, Malaysia. Newtown Square, PA: Project Management Institute.

Riike Friis Dam & Teo Yu Siang, 2019. “Stage 3 in the Design Thinking Process: Ideate”. *Interaction Design Foundation*. Available at <https://www.interaction-design.org/literature/article/stage-3-in-the-design-thinking-process-ideate>

Adams, Susan, 2013. “4 Steps to Successful Brainstorming”. *Forbes*. Available at <https://www.forbes.com/sites/susanadams/2013/03/05/4-steps-to-successful-brainstorming/>

Interaction Design Foundation, n.d. “Design Thinking”. Available at <https://www.interaction-design.org/literature/topics/design-thinking>

Becka, Vitezslav, 2016. 10 steps to mastering the art of storytelling. *Trekk Soft*. Available at <https://www.trekksoft.com/en/blog/10-steps-to-mastering-the-art-of-storytelling>

Circos, n.d. *About Circos*. Available at <https://circos.co/about/>

Ellen MacArthur Foundation, n.d. *Case Studies - Increasing clothing use through subscription*. Available at <https://www.ellenmacarthurfoundation.org/case-studies/why-buy-when-you-can-borrow>



U-ECO TRAINERS' MANUAL – REFERENCES

Horizon 2020 - European Commission. n.d. *The Eurostars programme - Horizon 2020 - European Commission*. [online] Available at: <<https://ec.europa.eu/programmes/horizon2020/en/h2020-section/eurostars-programme>> [Accessed 25 February 2021].

Circulareconomy.europa.eu. n.d. *Financing the circular economy | European Circular Economy Stakeholder Platform*. [online] Available at: <<https://circulareconomy.europa.eu/platform/en/financing-circular-economy>> [Accessed 25 February 2021].

VentureWell, n.d. *Circular Economy*. Available at: https://venturewell.org/tools_for_design/design-lifetime-sharing/design-lifetime-sharing-exercise/

Konietzko, J., Bocken, N. & Hultink, E.J., 2020. A Tool to Analyze, Ideate and Develop Circular Innovation Ecosystems. *Sustainability*, 12(1), p.417. Available at: <http://dx.doi.org/10.3390/su12010417>.

GreenBiz, 2020. *Why storytelling is important for the circular economy*. Available at <https://www.greenbiz.com/article/why-storytelling-important-circular-economy>

Cambridge Econometrics, Directorate-General for Environment (European Commission), ICF and Trinomics, 2018. *Impacts Of Circular Economy Policies On The Labour Market*. [online] Available at: <<https://op.europa.eu/en/publication-detail/-/publication/fc373862-704d-11e8-9483-01aa75ed71a1/language-en>> [Accessed 25 May 2020].

Ellen MacArthur Foundation, 2013. *Towards The Circular Economy Vol. 1: An Economic And Business Rationale For An Accelerated Transition*. [ebook] Available at: <<https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>> [Accessed 11 May 2020].

Ellen MacArthur Foundation, 2015. *Delivering The Circular Economy: A Toolkit For Policymakers*. [online] pp.21, 22. Available at: <https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation_PolicymakerToolkit.pdf> [Accessed 3 December 2020].

Ellen MacArthur Foundation, 2015. *Towards A Circular Economy: Business Rationale For An Accelerated Transition*. [online] pp.5-7. Available at: <https://www.ellenmacarthurfoundation.org/assets/downloads/publications/TCE_Ellen-MacArthur-Foundation_26-Nov-2015.pdf> [Accessed 3 December 2020].

Heshmati, A., 2015. *A Review Of The Circular Economy And Its Implementation*. [ebook] Entreprenörskapsforum. Available at: <https://entreprenorskapsforum.se/wp-content/uploads/2015/12/CircularEconomy_webb.pdf> [Accessed 12 May 2020].



U-ECO TRAINERS' MANUAL – REFERENCES

Kirchherr, J., Reike, D. and Hekkert, M., 2017. Conceptualizing the circular economy: An analysis of 114 definitions. *Resources, Conservation and Recycling*, 127, pp.221-232.

Potting, J., Hekkert, M., Worrell, E. and Hanemaaijer, A., 2017. Circular Economy: Measuring Innovation In The Product Chain. [online] pp.14-15. The Hague: PBL Netherlands Environmental Assessment Agency. Available at: <<https://www.pbl.nl/sites/default/files/downloads/pbl-2016-circular-economy-measuring-innovation-in-product-chains-2544.pdf>> [Accessed 3 December 2020].

SB Insight, 2019. The Nordic Market For Circular Economy 2019. [online] Available at: <<https://www.sb-insight.com/sb-reports>> [Accessed 26 May 2020].

Steffen, W., Richardson, K., Rockstrom, J., Cornell, S., Fetzer, I., Bennett, E., Biggs, R., Carpenter, S., de Vries, W., de Wit, C., Folke, C., Gerten, D., Heinke, J., Mace, G., Persson, L., Ramanathan, V., Reyers, B. and Sorlin, S., 2015. Planetary boundaries: Guiding human development on a changing planet. *Science*, 347(6223), pp.1259855-1259855.

United Nations, Department of Economic and Social Affairs, Population Division, 2019. World Population Prospects 2019: Highlights (ST/ESA/SER.A/423). [online] New York, p.5. Available at: <https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf> [Accessed 10 November 2020].

World Economic Forum, 2019. The Next Frontier: Natural Resource Targets Shaping A Competitive Circular Economy Within Planetary Boundaries. [ebook] World Economic Forum. Available at: <http://www3.weforum.org/docs/WEF_The_Next_Frontier_Natural_Resource_Targets_Report.pdf> [Accessed 11 May 2020].

