

SEN4CE Module 2

This handbook contains valuable information, some of which is exclusively accessible through the SEN4CE digital environment. To fully benefit from the complete content and interactive features, readers are encouraged to access the online platform. The digital environment offers additional resources and updates that may not be reflected in the printed version. Access to the SEN4CE digital environment may require an active internet connection and compliance with platform-specific terms and conditions.

Table of contents

SEN4CE Module 2.....	1
Introduction SEN4CE.....	1
Welcome page.....	1
Project partners.....	1
Preamble of Module 2.....	2
Overview of the SEN4CE Modules.....	2
Module 3 Overview.....	3
Glossary.....	3
1. Lesson 1 – Circular Economy vs. Linear Economy.....	4
1.1 Lesson 1 - Learning objectives.....	4
1.2 Introduction.....	4
1.3 Linear economy and its impact (1).....	5
1.4 Linear economy and its impact (2).....	5
Earth Overshoot Day (Slide layer).....	6
1.5 Planetary boundaries (1).....	6
Planetary boundaries (Slide layer).....	7
1.6 Planetary boundaries (2).....	7
1.7 Whats next? (1).....	8
1.8 Whats next? (2).....	8
1.9 From linear to circular.....	9
1.10 Sustainable development goals.....	9

1.11 Doughnut Economy (1)	10
1.12 Doughnut Economy (2)	10
1.13 Definition of Circular Economy	11
Definition of Circular Economy (Slide layer)	11
1.14 Summary (1)	12
How to explain DOUGHNUT ECONOMICS in simple words (Slide layer)	12
How to explain Circular Economy in simple words (Slide layer)	13
Recap (Slide layer)	13
1.15 Summary (2)	14
2. Lesson 2 – What is Circular Economy?	15
2.1 Lesson 2 - Learning objectives	15
2.2 Lesson 2 Introduction	15
2.3 Three principles	16
Design out waste and pollution (Slide layer)	16
Maintaining material & resource value (Slide layer)	17
Regenerative growth (Slide layer)	17
2.4 7 pillars	18
Pillar 1 (Slide layer)	18
Pillar 2 (Slide layer)	19
Pillar 3 (Slide layer)	19
Pillar 4 (Slide layer)	20
Pillar 5 (Slide layer)	20
Pillar 6 (Slide layer)	21
Pillar 7 (Slide layer)	21
2.5 10R Framework (1)	22
10 R's (Slide layer)	22
2.6 10R Framework (2)	23
2.7 10R Framework (3)	23
2.8 10R Framework (4)	24
2.9 Summary (1)	24
2.9 Summary (Slide layer)	25
2.10 Summary (2)	25
3. Lesson 3– Benefits and Barriers of Circular Economy?	26

3.1 Lesson 3 - Learning objectives	26
3.2 Benefits of CE.....	26
Benefits of CE (Slide layer)	27
3.3 Barriers to CE.....	27
Regulatory barriers (Slide layer)	28
Cultural barriers (Slide layer)	28
Technological barriers (Slide layer)	29
Market barrier (Slide layer)	29
3.4 What the EU is doing (1).....	30
3.5 What the EU is doing (2)	30
3.6 Summary (1)	31
3.7 Summary (2).....	31
4. Lesson 4 – How to develop a Circular mind set?	32
4.1 Lesson 4 - Learning objectives	32
4.2 What is a mindset?	32
4.3 Dilts Pyramid (1).....	33
Dilts pyramid (Slide layer)	33
4.4 Dilts Pyramid (2)	34
Aim and purpose (Slide layer).....	34
Identity/Self-image (Slide layer)	35
Values and beliefs (Slide layer)	35
Skills (Slide layer)	36
Behaviour (Slide layer).....	36
Environment (Slide layer)	37
4.5 Dilts Pyramid (3).....	37
Aim and purpose (Slide layer).....	38
Identity (Slide layer)	38
Values (Slide layer)	39
4.6 Concrete Actions to make a Contribution	39
4.7 Summary (1)	40
4.8 Summary (2)	40
5. Lesson 5– How to deal with resentment.....	41
5.1 Lesson 5 - Learning objectives	41

5.2 Climate anxiety (1)	41
Climate anxiety (Slide layer)	42
5.3 Climate anxiety (2).....	42
5.4 Role and responsibility of the media	43
Role and responsibility of the media (Slide layer).....	43
5.5 Psychological reaction - coping mechanisms	44
5.6 Facets of Defense (1)	44
5.7 Facets of Defense (2)	45
5.8 Facets of Defense (3)	45
5.9 Cognitive Distortions.....	46
What is a cognitive bias? (1) (Slide layer)	46
What is a cognitive bias? (2) (Slide layer).....	47
Optimistic bias (Slide layer).....	47
Confirmation bias (Slide layer)	48
Single action bias (Slide layer).....	48
Present bias (Slide layer).....	49
5.10 Excuses.....	49
5.11 Awareness and involvement (1)	50
5.12 Awareness and involvement (2).....	50
5.13 Risk perception (1).....	51
5.14 Risk perception (2)	51
5.15 How to motivate people to action (1).....	52
5.16 How to motivate people to action (2)	52
How to motivate people to action (Slide layer)	53
5.17 How to motivate people to action (3).....	53
5.18 How to motivate people to action (3)	54
How to motivate people to action (Slide layer)	54
5.19 How to motivate people to action (4)	55
5.20 Communication (1).....	55
5.21 Communication (2)	56
5.22 Communication (3)	56
6. Scenarios of How to Explain Circular Economy to Seniors	57
6.1 Scenarios of How to Explain Circular Economy to Seniors	57

6.2 Scenario Setting 1.....	58
6.3 Scenario Question 1.....	58
6.4 Scenario Setting 2.....	59
6.5 Scenario Question 2.....	59
6.6 Scenario Setting 3.....	60
6.7 Scenario Question 3.....	60
6.8 Scenario Setting 4.....	61
6.9 Scenario Question 4.....	61
6.10 Scenario Setting 5.....	62
6.11 Scenario Question 5.....	62
6.12 Scenario (Quiz results).....	63
6.13 Scenario (SEN4CE Tree).....	63

Introduction SEN4CE

Welcome page

Welcome to SEN4CE

Empowering Seniors in Circular Economy

An Erasmus+ Funded Project for Lifelong Learning & Sustainable Societies

We're on a mission to empower seniors (60+) with digital education on Circular Economy. Be part of the green transition, connect with younger generations, and extend your lifelong learning journey. Ideal for seniors and caretakers alike.



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/).



**Co-funded by
the European Union**



SEN4CE

Seniors for Circular Economy

Project n. ° 2021-2-AT01-KA220-ADU-000048101

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Project partners

Meet our Project Partners

Empowering Seniors Through Collective Expertise

Our project is enriched by a diverse set of partners.

[Bit-Management Beratung \(AT\) \(Project Lead\)](#)



[Asociación Empresarial de Investigación Centro Tecnológico del Mueble y la Madera de la Región de Murcia \(ES\)](#)



[E-Seniors Association \(FR\)](#)



[Future Balloons \(PT\)](#)



[Johanniter-Unfall-Hilfe \(DE\)](#)



JOHANNITER
Akademie Mitteledeutschland

Here you can visit our SEN4CE website:
<https://sen4ce.eu/partners/>

Preamble of Module 2

Preamble of Module 2

Welcome to this Train-the-Trainer course on Circular Economy (later CE) as topic for adult education with seniors 60+. The course is for you, if:

- You have some experience in interacting with seniors 60+ through either your professional or volunteer work context
- You wish to enlarge your adult education portfolio with content about Circular Economy
- You have no knowledge about Circular Economy so far or don't know, how to convey it to seniors 60+

In this course you will learn the basic knowledge that you need to educate seniors on Circular Economy and how they can contribute to a better now and future. After taking the Train-the-trainer course you will know:

- What Circular Economy is (in contrast to Linear Economy)
- Why we need it
- How each citizen can contribute to moving towards a Circular Economy
- Where to find further information on CE


Overview of the SEN4CE Modules

Course Structure of SEN4CE

Glossary

Circular Economy for caretakers and trainers in care and retirement sector

Module 3 Overview



Course Structure of Module 2

- Lesson 1 – Circular Economy vs. Linear Economy
- Lesson 2 – What is Circular Economy?
- Lesson 3 – Benefits and Barriers of Circular Economy?
- Lesson 4 – How to develop a Circular mind set?
- Lesson 5 – How to deal with resentment
- Scenarios of How to Explain Circular Economy to Seniors

[Back to Module Overview](#)

Glossary

Glossary

As you journey through the SEN4CE course on Circular Economy, you may come across terms or concepts that are unfamiliar. To support your learning and ensure a clear understanding, we've created a comprehensive glossary tailored just for you. Access the Glossary: The glossary is readily available on our website for your convenience.

Simply click on the link provided below: [\[Link\]](#)

How to Use:

- Keep the glossary open alongside the course for quick references.
- Prefer a physical copy? Feel free to print the glossary to have it at hand.

Remember, the goal is to make your learning experience as smooth and informative as possible. Happy learning!

[Back to Module Overview](#)

1. Lesson 1 – Circular Economy vs. Linear Economy

1.1 Lesson 1 - Learning objectives

Lesson 1 - Circular Economy vs. Linear Economy

1.1 Learning objectives

After going through lesson 1 you should be able to:

- Explain our current economic model and how it has resulted in humanity living an unsustainable lifestyle.
- Explain the role the Sustainable Development Goals play in shaping a better future for all.
- Explain the core idea behind Doughnut Economics and the big picture it gives us for the future.
- Explain the basic strategy behind the Circular Economy.

[Back to Menu](#)

1.2 Introduction

1.2 Introduction

Moving from a Linear to a Circular Economy pays tribute to the realisation, that we are living on a planet of finite resources. Already in 1972 the Club of Rome* published a study called "The limits of growth". The central conclusions of the report were:

"If current increases in world population, industrialisation, pollution, food production and exploitation of natural resources continue unabated, the absolute limits to growth on Earth will be reached over the next hundred years."

Unfortunately, it took mankind another 50 years to accept the fact and the evidence that we cannot exploit the planet at the acceleration level we are used to and that we have to dramatically change our unsustainable lifestyle.

Nowadays, the Circular Economy is promoted worldwide and strives to optimise material resource flows, minimise waste, and regenerate natural resources. CE approaches concentrate on transforming the way we design, produce and use goods. In a CE the demands for natural resources as primary input are minimised, resources are used more efficiently and kept in the cycle of usage for as long as possible.

1.3 Linear economy and its impact (1)

1.3 Linear economy and its impact

The current Linear Economic model is a human-centred approach that sees natural resources as existing for human consumption and naively as abundant and infinite. We take from the earth to make products for our personal convenience and when they are no longer desirable or functional, we throw them away. This is where the name **Linear Economy** stems from.

TAKE -> MAKE -> CONSUME -> THROW AWAY -> POLLUTE



1.4 Linear economy and its impact (2)

1.3 Linear economy and its impact

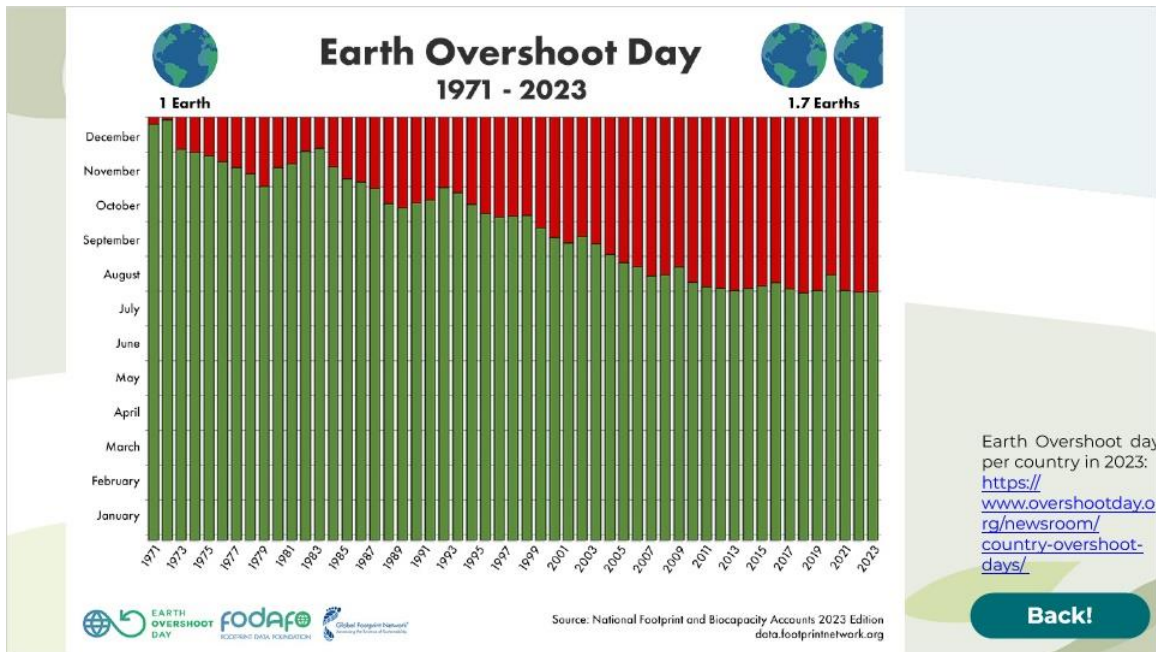
A Linear Economy is unconcerned with the end life of products and their effect on the environment. "Value", in the form of money, is created by the production and sale of as many products as possible.

It is inherent to capitalism and has led to humankind recklessly using up natural resources faster than they can recover.

A very good visual representation of this fact is the following graphic of the Earth Overshoot Day 2023 per country, which marks the day when humanity or in this case the population of a country has used up all the natural resources that the Earth can provide within a year.

[Click to see the overview!](#)

Earth Overshoot Day (Slide layer)



1.5 Planetary boundaries (1)

Planetary boundaries

The concept of planetary boundaries goes back to a team of around thirty international scientists from the Stockholm Resilience Centre led by resilience researcher Johan Rockström. In their specialist article "A safe operating space for humanity" from 2009 and a further development from 2015, the scientists developed a detailed model of the planetary load limits and their exhaustion. [More information.](#)

All these problems affect society, including seniors who have seen how, year after year, resources have deteriorated. In this globalized world, seniors can also do their bit for the responsible use of resources, and in lesson 4 we show different applications and sustainable and circular platforms related to the responsible use of resources.

[Click to see the overview!](#)

Planetary boundaries (Slide layer)



1.6 Planetary boundaries (2)

Planetary boundaries

You can see the data for different countries. You can select a country to view its performance relative to the Doughnut of social and planetary boundaries and see how it compares with other countries. Dark green circles show the social foundation and ecological ceiling. Blue wedges show social performance relative to a threshold associated with meeting basic needs. Green wedges show resource use relative to a biophysical boundary associated with sustainability. Red wedges show shortfalls below the social threshold or overshoot beyond the biophysical boundary, while grey wedges show indicators with missing data. Wedges with a dashed edge extend beyond the chart area. Ideally a country would have blue wedges that reach the social foundation and green wedges within the ecological ceiling.

Find out more information on that website: <https://goodlife.leeds.ac.uk/national-snapshots/countries/>countries/> <<https://goodlife.leeds.ac.uk/national-snapshots/countries/>

Click to see the overview!

1.7 Whats next? (1)

What's next?

Fact is, we cannot continue the linear way of consumption. We need to change our ways of living now. One could ask, why are humans so thoughtless to destroy their home planet and how did we get there in the first place?

One explanation, that also holds a solution, is that during the (ironically) enlightenment, the great „age of reason“ beginning in the late 17th century the human mind and rational thinking became predominant values. Accompanied by the thinking that humans are above all other living beings and have the right to take what they want from earth. The world view developed to humans being the dominant species, above and outside natural systems, deliberately alienated from and opposite to nature. This led to reckless exploitation of natural resources, animals and even humans by humans. Over time the emerging capitalist economic system developed into robber capitalism fostering greed, ruthlessness, and egoism. Humans alienated from their livelihood to a point where „saving the environment“ became something that was mocked as a hippie hobby.

1.8 Whats next? (2)

What's next?

Only slowly the realization comes back that humans, like it or not, are inevitably a part of nature and „the environment“ is not something out there that we can take care of or not, but that we are highly dependent on. You might have heard of the saying:

Only after the last tree has been cut down /
Only after the last river has been poisoned /
Only after the last fish has been caught /
Then you will find that money cannot be eaten.

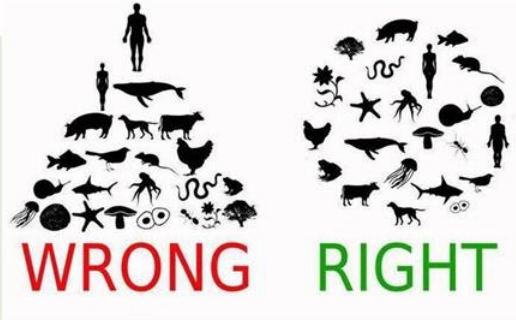


1.9 From linear to circular

1.4 From linear to circular

So what to do in the light of all the ecological and climate crises on this planet?

Well, first we have to accept the fact that we are an interdependent part of the ecosystem of planet Earth and our survival as a species depends on us learning to live within the planetary boundaries. We are fundamentally connected to nature. If we hurt nature, we eventually hurt ourselves. Once we have accepted that worldwide, we have to use all our human capacities to think and create to find a way of living that is sustainable over time and repairs the damage we have done, for our own sake.



Humans are part of the ecosystem, not above it.

1.10 Sustainable development goals

Sustainable Development Goals (SDGs)

The good news is many government bodies and companies have realised this necessity and taken some action already. The 2030 Agenda for Sustainable Development, crafted in 2015 by the United Nations, and its corresponding [Sustainable Development Goals](#) provide a structure for the change we need. The outlined seventeen goals give us concrete, attainable milestones to work toward to achieve economic, social, and environmental sustainability until 2030. The agenda acknowledges the interrelated nature of global issues and insists that solving them must be a collaborative partnership among all stakeholders.



Figure: SDGs according to impact level: <https://www.stockholmresilience.org/research/research-news/2016-06-14-the-sdgs-wedding-cake.html>

1.11 Doughnut Economy (1)

Doughnut Economy

Another helpful concept is Doughnut Economics, an alternative economic framework developed by Kate Raworth to address the challenge of meeting humanity's needs while simultaneously respecting the Earth's limitations. It is an economic mindset to facilitate regenerative and distributive dynamics. It does not focus on specific policies or regulations, but rather on teaching decision-makers to think in a way that brings the world's economies into a safe and just space. It shifts the goal from endless growth to sustained thriving within the doughnut. To achieve this, we have to recognise that economies are embedded within, and dependent upon, society and the living world. We must aim for systemic change through nurturing human behaviour to be caring and cooperative, rather than competitive and individualistic.

[Here](#) is a good overview of how different countries perform relative to the Doughnut of social and planetary boundaries.

1.12 Doughnut Economy (2)

Doughnut Economy

Dark green circles show the social foundation and ecological ceiling. Blue wedges show social performance relative to a threshold associated with meeting basic needs. Green wedges show resource use relative to a biophysical boundary associated with sustainability. Red wedges show shortfalls below the social threshold or overshoot beyond the biophysical boundary, while grey wedges show indicators with missing data. Wedges with a dashed edge extend beyond the chart area. Ideally a country would have blue wedges that reach the social foundation and green wedges within the ecological ceiling.



© Wikipedia | Bild: Doughnut Economy | CC BY-SA 4.0

1.13 Definition of Circular Economy

1.5 Definition of Circular Economy

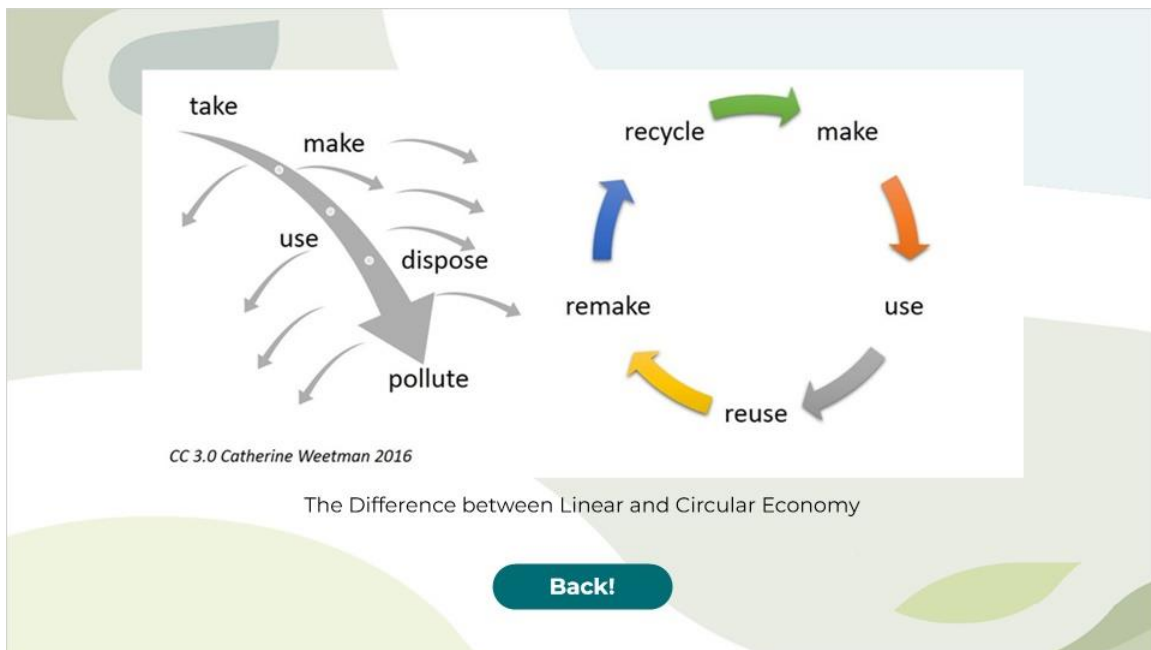
There are many slightly varying definitions of Circular Economy. Here we introduce to you the one used by the European Union's [Action plan for the Circular Economy](#) and that of the [OECD](#).

EU: "In a **Circular Economy** the value of products and materials is maintained for as long as possible; waste and resource use are minimised, and resources are kept within the economy when a product has reached the end of its life, to be used again and again to create further value."

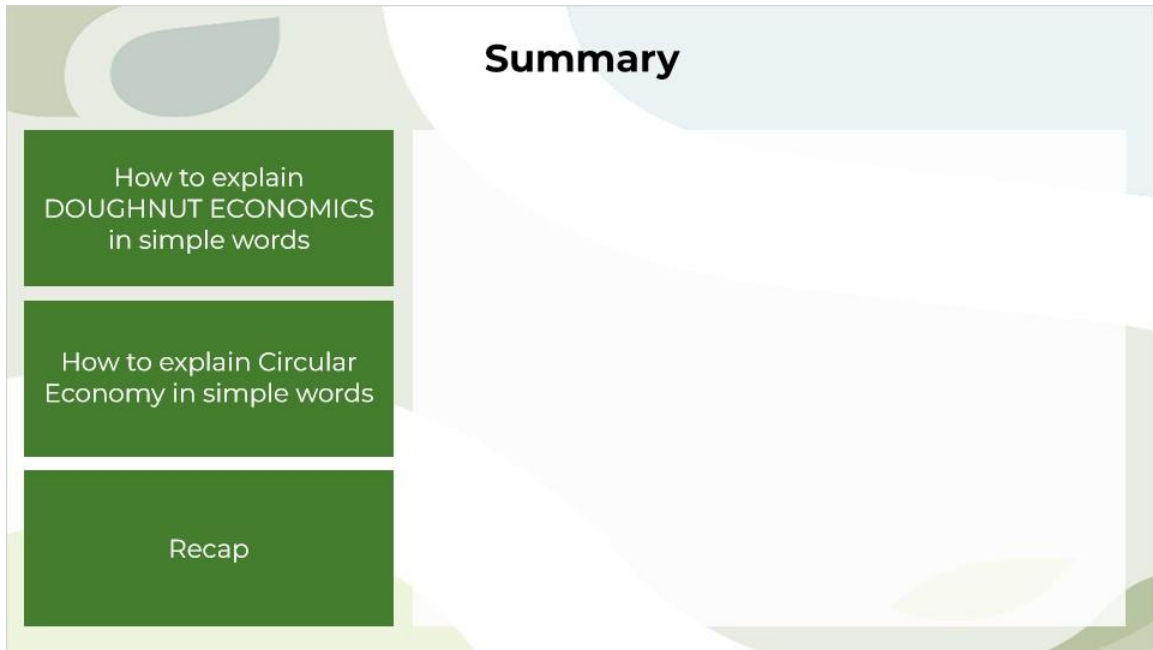
OECD: "The Circular Economy is about economics, innovation and competitiveness. As such, it goes beyond waste management and recycling and implies changes in production and consumption models, eco-design and integrated planning."

[Click to see the difference!](#)

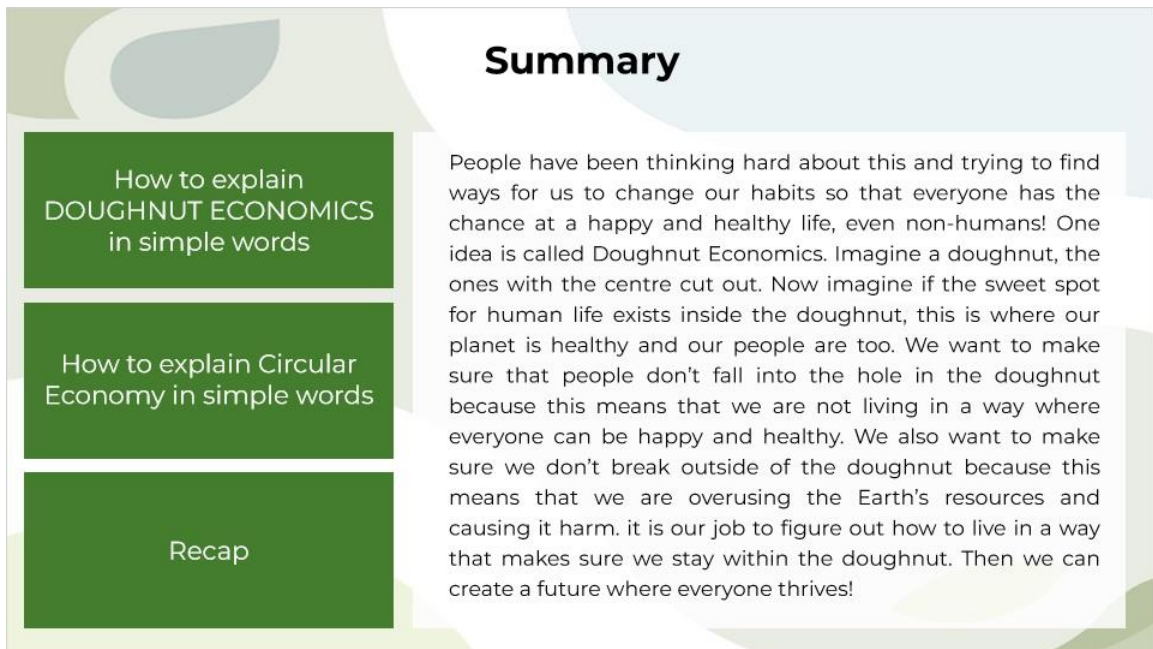
Definition of Circular Economy (Slide layer)



1.14 Summary (1)



How to explain DOUGHNUT ECONOMICS in simple words (Slide layer)



How to explain Circular Economy in simple words (Slide layer)

Summary

How to explain DOUGHNUT ECONOMICS in simple words

How to explain Circular Economy in simple words

Recap

Remember when I told you about our Linear Economy? Well, people have also been working on changing it to a model that is better for our planet. This new model is called Circular Economy. It is called this because its main idea is that everything we do should follow the cycles of nature. For example, a seed is planted and grows into a berry bush. Animals eat the berries to gain energy then poop out the seeds. The poop then fertilises the ground so that more plants can grow and the cycle starts back over again. We want to make cycles like this for humans too so that we can live in rhythm with nature. Isn't that great?

Recap (Slide layer)

Summary

How to explain DOUGHNUT ECONOMICS in simple words

How to explain Circular Economy in simple words

Recap

Circular Economy offers us a strategy for reaching the future outlined by Doughnut Economics and the SDGs. It provides the practical measures to implement the big picture painted by Doughnut Economics and the SDGs. The Circular Economy is an economic model which is based on the cycles observed in nature. It is a regenerative system that brings humanity back into rhythm with natural entities while simultaneously returning natural systems to their healthy state. And even if true Circular Economy is about designing and producing sustainable, re-usable, cradle-to-cradle products (and services) and it takes time until the global economy has entirely shifted to a Circular Economy, we as citizens (and we deliberately not use the term consumer here) can have an impact and make a difference right now!

1.15 Summary (2)

1.6 Summary

- The predominant current **Linear Economic model** is based on a take-make-waste system that is not sustainable. Its negative effects hurt the environment, non-human entities, and humans alike.
- The **Sustainable Development Goals** outline 17 concrete, achievable goals to direct our common efforts toward an inclusive, sustainable future. The goals require partnership among all stakeholders to solve global interdependent and overlapping issues in a way that supports peace and well-being for all.
- **Circular Economy** is a strategy for achieving the SDGs and realising the vision of Doughnut Economics. It mimics the Earth's natural cycles to bring humanity back into harmony with all other inhabitants of planet Earth.
- **Doughnut Economics** offers us a big-picture perspective for an alternative future where humans thrive within the doughnut, not overshooting planetary boundaries or falling below the social boundaries. This visionary outlook calls us to action and shifts the focus from growth to thriving.

[Continue with Lesson 2](#)

[Back to menu](#)

2. Lesson 2 – What is Circular Economy?

2.1 Lesson 2 - Learning objectives

Lesson 2 - What is Circular Economy?

2.1 Learning objectives

After going through lesson 2 you should be able to:

- Explain the definition of the Circular Economy and its important elements including the R-Frameworks, waste hierarchy, and systems perspective.
- Explain the three principles on which the Circular Economy is based; design out waste and pollution, keep products and materials in use, and regenerate natural systems.

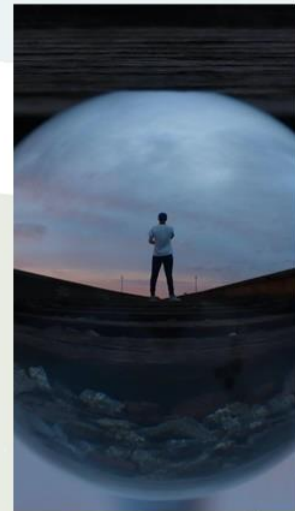
[Back to main menu](#)

2.2 Lesson 2 Introduction

2.2 Systemic perspective

As we already said in lesson 1, shifting to a Circular Economy involves and needs a shift in perspective and the world view. We are not apart from but part of nature. Nature is a system, so we need to see human society as a system as well. A system within a system, interconnected with other systems. This encompasses a different approach to change. We don't need to change something outside of us. Something or someone other.

Humans as parts of the system are also part of what needs to be changed. Instead of looking for one leverage point to change we need to look for an array of approaches that mutually reinforce each other and reflect on the interactions that will help facilitate change in our system. We don't need power, structures and processes but relationships and ideas to realise sustainable change. And we can change every system we are connected to instead of only attempting to change things we have the power to control.



2.3 Three principles

2.3 The Three principles of Circular Economy

Circular Economy is based on decades of developing theories, ideas and concepts. It is still evolving as we make experiences and learn with its implementation. It is not a finite system. But it is one that makes sense, since it mimics nature's cyclical patterns. It is thus based on three guiding principles. These are:

- Design out waste and pollution
- Maintaining material & resource value
- Regenerative growth

Design out waste and pollution (Slide layer)

2.3 The Three principles of Circular Economy

Circular Economy is based on decades of developing theories, ideas and concepts. It is still evolving as we make experiences and learn with its implementation. It is not a finite system. But it is one that makes sense, since it mimics nature's cyclical patterns. It is thus based on three guiding principles. These are:

- Design out waste and pollution
- Maintaining material & resource value
- Regenerative growth

A Circular Economy identifies and removes already at the design phase any negative impacts of economic activity that could cause damage to human health or to natural systems, such as waste and pollution. This may refer to preventing the release of greenhouse gases, of hazardous substances, or of other forms of pollution, e.g. on air, land, or water. Appropriate design is meant to reduce both consumption footprint and waste. This principle is important to keep resource consumption within planetary boundaries.

Maintaining material & resource value (Slide layer)

2.3 The Three principles of Circular Economy

Circular Economy is based on decades of developing theories, ideas and concepts. It is still evolving as we make experiences and learn with its implementation. It is not a finite system. But it is one that makes sense, since it mimics nature's cyclical patterns. It is thus based on three guiding principles. These are:

- Design out waste and pollution**
- Maintaining material & resource value**
- Regenerative growth**

Design long-lasting, easy-to-reuse products, facilitate repairs, contribute to consumer attitude change: A Circular Economy favours activities that preserve value in the form of energy, labour, and materials. This means designing for durability, reuse, re-manufacturing, and recycling to keep products, components, and materials circulating in the economy for as long as possible. Circular systems make effective use of bio-based materials, benefiting from an increased diversity of potential uses for such materials, as they cycle between the economy and natural systems.

Regenerative growth (Slide layer)

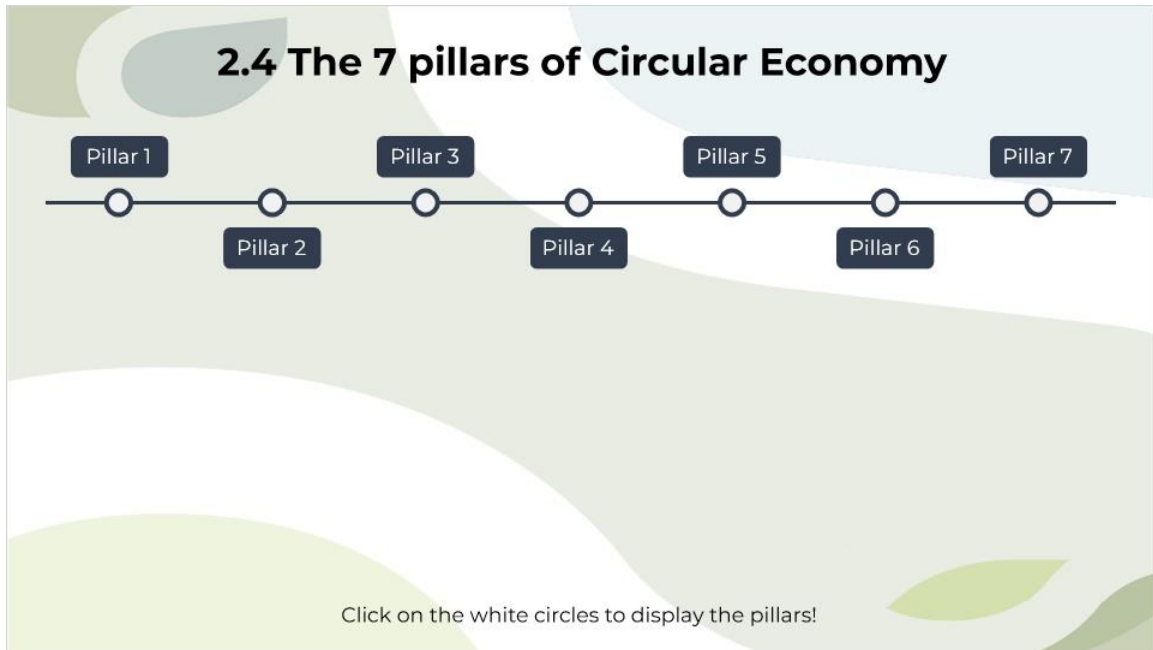
2.3 The Three principles of Circular Economy

Circular Economy is based on decades of developing theories, ideas and concepts. It is still evolving as we make experiences and learn with its implementation. It is not a finite system. But it is one that makes sense, since it mimics nature's cyclical patterns. It is thus based on three guiding principles. These are:

- Design out waste and pollution**
- Maintaining material & resource value**
- Regenerative growth**

Give back to the planet more than we take: A Circular Economy avoids the use of non-renewable resources and preserves or enhances renewable ones, for instance by returning valuable nutrients to the soil to support regeneration, or using renewable energy as opposed to relying on fossil fuels.

2.4 7 pillars



Pillar 1 (Slide layer)

2.4 The 7 pillars of Circular Economy


Materials are cycled at continuous high value

In this pillar, the main priority is given to preserving the complexity of the material, through cascading materials in their most complete form for as long as possible. The materials in this pillar are used only when necessary, and there is a preference for dematerialization of products and services.


Click on the white circles to display the pillars!

Pillar 2 (Slide layer)

2.4 The 7 pillars of Circular Economy



All energy is based on renewable sources




In the Circular Economy, the system is designed for energy efficiency without compromising performance and efficiency. Energy is conserved intelligently and cascading when lower energy values are available for use. The amount of energy consumption is adapted to the amount of local energy available.


Click on the white circles to display the pillars!

Pillar 3 (Slide layer)

2.4 The 7 pillars of Circular Economy



Biodiversity is supported and enhanced through human activity




One of the great principles of Circular Economy activity is to preserve the complexity of the product: the preservation of ecological diversity is an essential source of resilience for the planet.

Click on the white circles to display the pillars!


Pillar 4 (Slide layer)

2.4 The 7 pillars of Circular Economy



Pillar 1 Pillar 3 Pillar 5 Pillar 7

Pillar 2 Pillar 4 Pillar 6




Human society and culture are preserved
The other forms of complexity and diversity, human cultures and social cohesion are important to maintain.

Click on the white circles to display the pillars!


Pillar 5 (Slide layer)

2.4 The 7 pillars of Circular Economy



Pillar 1 Pillar 3 Pillar 5 Pillar 7

Pillar 2 Pillar 4 Pillar 6




The health and well-being of humans and other species are structurally supported
This pillar outlines the importance of eliminating toxic and dangerous substances. In the transition phases to this Circular Economy it is valuable to minimise and maintain highly controlled cycles. Economic activities do not threaten human health and well-being.


Click on the white circles to display the pillars!

Pillar 6 (Slide layer)

2.4 The 7 pillars of Circular Economy



Human activities maximise the generation of societal value




It is important to know that materials and energy are not available in infinite measure, so their use must be well thought out, intentional and make a significant contribution to their use. The choice to use resources maximises the generation of value through as many categories as possible.


Click on the white circles to display the pillars!

Pillar 7 (Slide layer)

2.4 The 7 pillars of Circular Economy



Water resources are extracted and cycled sustainably




The world's economic system has government command systems, with incentives and mechanisms that allow it to respond to crises. This means that there is a distribution in power, the structure of information networks and the guarantee of the existence of backup copies in case parts of the system fail.

Click on the white circles to display the pillars!

2.5 10R Framework (1)

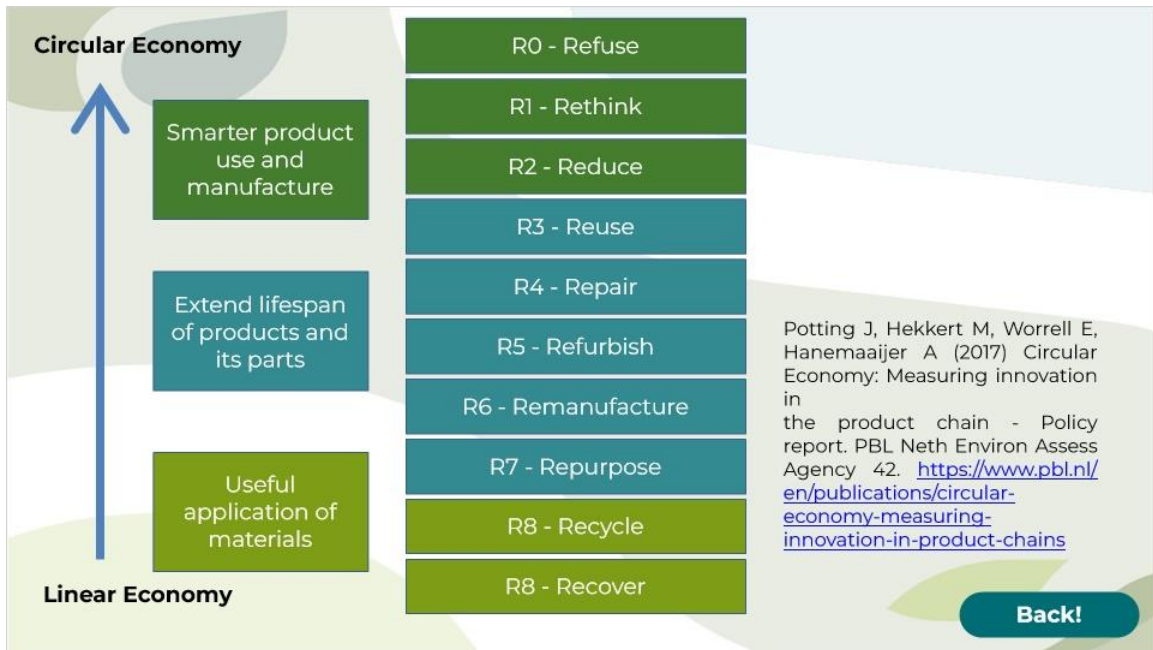
2.5 The 10-R Framework

Three it is a magic number, Yes it is, it is a magic number....You may have heard the Jack Johnson 3R [Song Reuse, Reduce, Recycle](#). This song is 14 years old (in 2023) and the 3Rs have developed into 10 Rs by now. The 10 R Framework is a hierarchical approach to closing resource loops. It shows how resources can be used and reused at their highest value while minimising waste and environmental destruction.



[Click to see the 10 R's!](#)

10 R's (Slide layer)



The diagram illustrates the 10 R's Framework as a vertical progression from a Linear Economy at the bottom to a Circular Economy at the top. A blue arrow on the left points upwards, indicating the direction of progress. Three green boxes on the left describe the stages of this progression: 'Smarter product use and manufacture', 'Extend lifespan of products and its parts', and 'Useful application of materials'. To the right, a vertical stack of ten colored boxes lists the corresponding R's: R0 - Refuse, R1 - Rethink, R2 - Reduce, R3 - Reuse, R4 - Repair, R5 - Refurbish, R6 - Remanufacture, R7 - Repurpose, R8 - Recycle, and R8 - Recover. A citation for Potting J, Hekkert M, Worrell E, Hanemaaijer A (2017) is provided on the right side of the slide.

Circular Economy

Smarter product use and manufacture

Extend lifespan of products and its parts

Useful application of materials

Linear Economy

- R0 - Refuse
- R1 - Rethink
- R2 - Reduce
- R3 - Reuse
- R4 - Repair
- R5 - Refurbish
- R6 - Remanufacture
- R7 - Repurpose
- R8 - Recycle
- R8 - Recover

Potting J, Hekkert M, Worrell E, Hanemaaijer A (2017) Circular Economy: Measuring innovation in the product chain - Policy report. PBL Neth Environ Assess Agency 42. <https://www.pbl.nl/en/publications/circular-economy-measuring-innovation-in-product-chains>

[Back!](#)

2.6 10R Framework (2)

2.5 The 10-R Framework

Smarter product use and manufacture → different business types emerge

- **Circular supply chain** - sourcing materials that are non-toxic, pure, that have multiple and long life cycles, and that have a low value depreciation over time
- **Recovering and recycling** - recovering as many resources as possible from waste streams
- **Product life extension** - prolonging the lifetime of a product through repair, reuse, maintain, remake, upgrade or resell
- **Sharing platforms** - increasing materials' and products' usage ratios and asset recirculation with collaborative structures
- **Product as a service** - monetizing the functionality of products while retaining ownership and thus increasing the control over impacts and value of the produced goods

2.7 10R Framework (3)

2.5 The 10-R Framework

Extend lifespan of products and their parts → Close resource loops/revalorize elements formerly considered waste.

The first and easiest process (in terms of energy consumption and financial investment) is **reusing** - i.e. extending the life cycle(s) of the products, the repurposing of products or parts thereof after their initial end of lifecycle in order to respond to different needs than initially previewed.

Then there is the option of **repairing** said products, thus restarting their lifecycle with the same functionalities.

If reusing or repairing a product is too difficult, the next loop-closing process would be **remaking/remanufacturing**, which involves the reassembly, remanufacture of different pieces into new components and products.


Finally, the most commonly known process facilitating circularity is recycling, through which raw materials are recovered and then transformed into material inputs. While recycling might often be put at the forefront of efforts towards circularity, it is by far the **most difficult and energy consuming process**.

2.8 10R Framework (4)

2.5 The 10-R Framework

It is also the Circular value creation loop that creates the least value. It is also highly likely to involve a rebound effect, sometimes even offsetting its positive impacts due to the high energy consumption involved in the recycling processes.

Here are some guiding questions for reflection, where we can be part of the Circular Economy already.



2.9 Summary (1)


2.6 Summary

The Circular Economy is a transition from using finite energy resources to using renewable ones while building economic, natural, and social impact. This is done by designing waste out of the system.

The Circular Economy is based on three principles that outline the steps needed to achieve a fully circular system, which feeds back into itself to sustain life: Eliminate, Circulate, and Regenerate.

The R-Framework (refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle, recover) is based on a waste hierarchy where refuse is the most desirable solution and recovery is the least desirable solution.

Reflection questions: Double-click on the fields below! To **reset** the Flipcards click here: [Reset](#)



2.9 Summary (Slide layer)

2.6 Summary

The Circular Economy is a transition from using finite energy resources to using renewable ones while building economic, natural, and social impact. This is done by designing waste out of the system.

The Circular Economy is based on three principles that outline the steps needed to achieve a fully circular system, which feeds back into itself to sustain life: Eliminate, Circulate, and Regenerate.

The R-Framework (refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle, recover) is based on a waste hierarchy where refuse is the most desirable solution and recovery is the least desirable solution.

Reflection questions: Double-click on the fields below! To **reset** the Flipcards click here: [Reset](#)

Do you practise any of the 10 R's already in your daily life?

Were you familiar with systems thinking before this? Let your mind wander a bit and consider; what areas of your life could be considered a system? Did you find anything surprising?

Does your lifestyle support any of the three principles of circularity? Can you imagine new ways to implement them in your work?

2.10 Summary (2)

2.6 Summary

How to explain the principles of Circular Economy in simple words:

Circular Economy seems like a great way in which we can **learn from nature** to help humans find a way to thrive without damaging the Earth! it is based on **three specific principles: design out waste and pollution, keep products and materials in use, and regenerate natural systems**. The idea is that we, by design, make waste obsolete by finding a way to reuse everything in the creation of new things. This way products and materials stay in use indefinitely rather than being thrown in trash dumps. This is what is meant by "closing the loop."

Beyond that, the Circular Economy is a way to **regenerate the natural systems** that we have depleted over the last few centuries. We want to give back to nature so it can thrive right along with us. We can make this happen by avoiding non-renewable resources and protecting renewable ones. That we can become a part of natural cycles instead of dominating or destroying them.

It may sound like wishful thinking, but people are already thinking of practical, applicable ways to start. The **R-Frameworks** really break it down in an understandable way.

[Continue with Lesson 3](#) [Back to menu](#)

3. Lesson 3– Benefits and Barriers of Circular Economy?

3.1 Lesson 3 - Learning objectives

Lesson 3 - Benefits and Barriers of Circular Economy?

3.1 Learning Objectives

After going through lesson 3 you should be able to:

- Explain the benefits and barriers to Circular Economy.
- Explain how everyone can contribute to a Circular Economy.

[Back to menu](#)


3.2 Benefits of CE

3.2 Benefits of Circular Economy

Circular Economy offers a variety of benefits to us all, from individuals to companies to societies and has the potential to improve the quality of life on earth.

As the Circular Economy model continues to develop, the benefits of it will as well.

Benefits: Double-click on the fields below! To **reset** the Flipcards click here: [Reset](#)



Benefits of CE (Slide layer)

3.2 Benefits of Circular Economy

Circular Economy offers a variety of benefits to us all, from individuals to companies to societies and has the potential to improve the quality of life on earth.

As the Circular Economy model continues to develop, the benefits of it will as well.

Benefits: Double-click on the fields below! To **reset** the Flipcards click here: [Reset](#)


Environmental Benefits: Reduction of greenhouse gas emissions (CO ₂), soil improvement, less pollution of air, soil and water	Economic Benefits: New (sustainable) economic growth, saved resources, employment growth	Social Benefits: More human connection in the sharing economy, more employment
---	--	--

3.3 Barriers to CE

3.3 Barriers to Circular economy

The Circular Economy foremost requires a shift in mind set and values as well. These are some of the most pressing barriers faced when trying to make the transition to the Circular Economic model. Because it is an entire economic model change. For hundreds of years modern human civilizations lived with the Linear Economic system. Not everybody is willing or convinced that we must abandon this linear system deliberately. Remember, it fosters egoistic behaviour, while CE demands personal responsibility, which is not too enticing to most people. Linear economy seems to be convenient and cheap, but at a very high price.

The barriers are:




Regulatory	Cultural	Technological	Market
------------	----------	---------------	--------

Regulatory barriers (Slide layer)

3.3 Barriers to Circular economy

Regulatory barriers

Lack of policies supporting the transition to Circular Economic practices. Current laws and regulations often are not in support of CE practices and at times are even hindering CE transitions.



Regulatory

Cultural

Technological

Market


The slide features a central text block with a title '3.3 Barriers to Circular economy' and a sub-heading 'Regulatory barriers'. Below the text is a photograph of a speed limit sign that reads 'MAXIMUM 15' in front of a house. To the left of the text is a vertical green bar with the word 'Regulatory' written vertically. To the right of the text are three vertical bars: a green bar with 'Cultural', a grey bar with 'Technological', and a grey bar with 'Market', all written vertically.

Cultural barriers (Slide layer)

3.3 Barriers to Circular economy

Cultural barriers

Lack of understanding and awareness, which blocks willingness to attempt the shift to a Circular Economy model.



Regulatory

Cultural

Technological


Market

The slide features a central text block with a title '3.3 Barriers to Circular economy' and a sub-heading 'Cultural barriers'. Below the text is a photograph of a closed metal gate in a garden. To the left of the text are two vertical green bars with the words 'Regulatory' and 'Cultural' written vertically. To the right of the text are two vertical bars: a green bar with 'Technological' and a grey bar with 'Market', both written vertically.

Technological barriers (Slide layer)

3.3 Barriers to Circular economy

Technological barriers
Lack of proven technologies to support Circular Economic practices, lack of data on the impact of CE practices in the long run and in large scale.



Regulatory
Cultural
Technological


Market

The slide features a title '3.3 Barriers to Circular economy' at the top. Below it, the text 'Technological barriers' is followed by a description: 'Lack of proven technologies to support Circular Economic practices, lack of data on the impact of CE practices in the long run and in large scale.' To the left of the text is a vertical stack of three green bars labeled 'Regulatory', 'Cultural', and 'Technological'. To the right is a single green bar labeled 'Market'. A central image shows a black rotary telephone against a dark background.

Market barrier (Slide layer)

3.3 Barriers to Circular economy

Market barrier
Low number of proven viable Circular business models, since the Circular Economy is relatively young



Regulatory
Cultural
Technological
Market

The slide features a title '3.3 Barriers to Circular economy' at the top. Below it, the text 'Market barrier' is followed by a description: 'Low number of proven viable Circular business models, since the Circular Economy is relatively young'. To the left of the text is a vertical stack of four green bars labeled 'Regulatory', 'Cultural', 'Technological', and 'Market'. To the right is a central image showing a chain-link fence with a bright sun shining through it, creating a lens flare effect.

3.4 What the EU is doing (1)

3.4 What the EU is doing to become a Circular Economy

In March 2020, the European Commission presented the Circular Economy action plan, which aims to promote more sustainable product design, reduce waste and empower consumers, for example by creating a [right to repair](#). There is a focus on resource intensive sectors, such as [electronics and ICT](#), [plastics](#), [textiles](#) and construction.

In February 2021, the Parliament adopted a resolution on the [New Circular Economy Action Plan](#) demanding additional measures to achieve a carbon-neutral, environmentally sustainable, toxic-free and fully Circular Economy by 2050, including tighter recycling rules and [binding targets for materials use and consumption](#) by 2030.

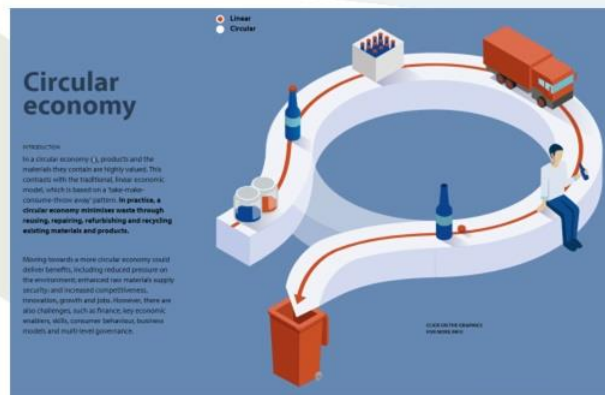
In March 2022, the Commission released the [first package of measures](#) to speed up the transition towards a Circular Economy, as part of the Circular Economy action plan. The proposals include boosting sustainable products, empowering consumers for the green transition, reviewing construction product regulation, and creating a strategy on sustainable textiles.

3.5 What the EU is doing (2)

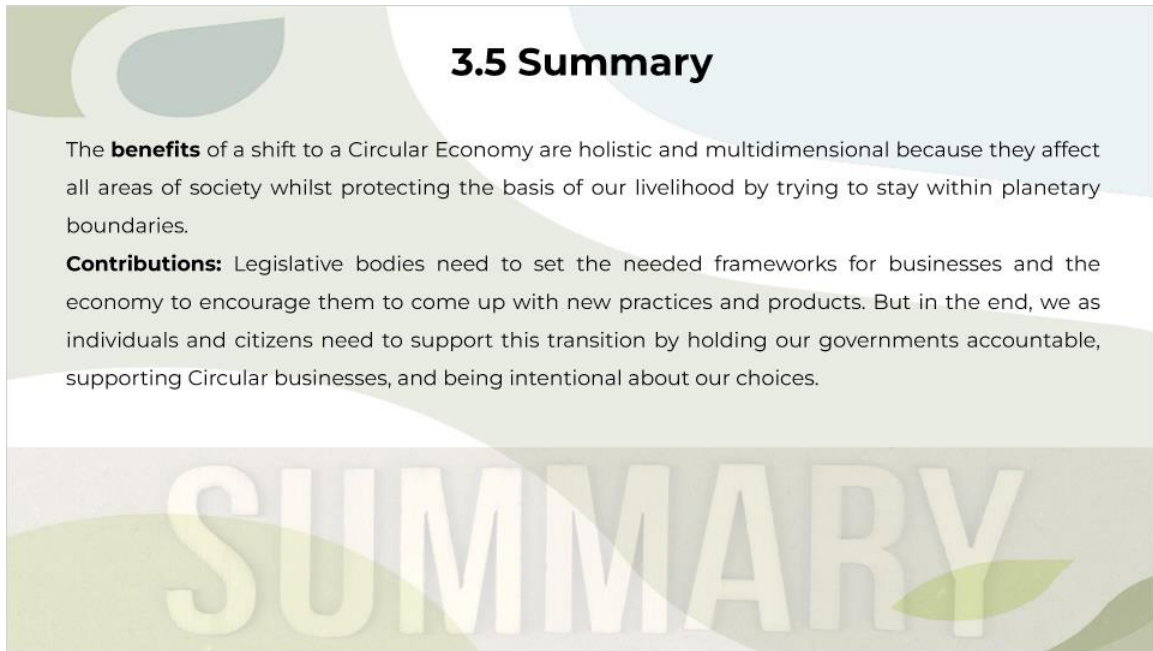
3.4 What the EU is doing to become a Circular Economy

In November 2022, the Commission proposed [new EU-wide rules on packaging](#). It aims to reduce packaging waste and improve packaging design, with for example clear labelling to promote reuse and recycling; and calls for a transition to bio-based, biodegradable and compostable plastics.

See the infographics on Circular Economy on the page of the European Parliament for more detailed information [here!](#)



3.6 Summary (1)

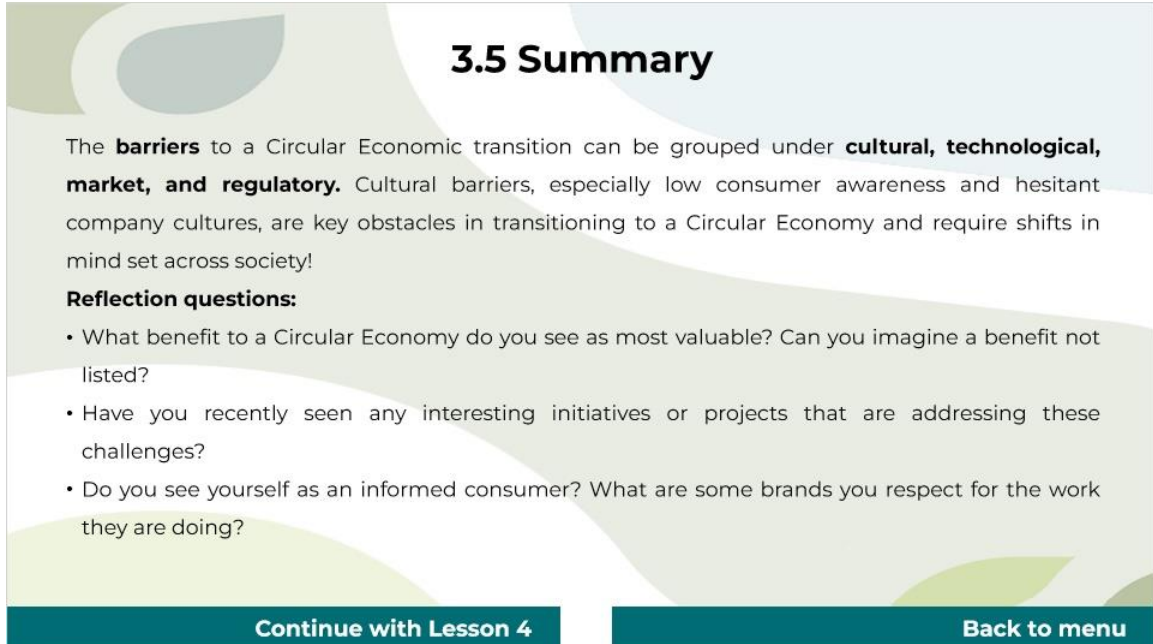
A slide titled "3.5 Summary" with a decorative background of green and blue organic shapes. The word "SUMMARY" is written in large, light green, semi-transparent letters across the bottom half of the slide. The text discusses the benefits and contributions of a Circular Economy.

3.5 Summary

The **benefits** of a shift to a Circular Economy are holistic and multidimensional because they affect all areas of society whilst protecting the basis of our livelihood by trying to stay within planetary boundaries.

Contributions: Legislative bodies need to set the needed frameworks for businesses and the economy to encourage them to come up with new practices and products. But in the end, we as individuals and citizens need to support this transition by holding our governments accountable, supporting Circular businesses, and being intentional about our choices.

3.7 Summary (2)

A slide titled "3.5 Summary" with a decorative background of green and blue organic shapes. The word "SUMMARY" is written in large, light green, semi-transparent letters across the bottom half of the slide. The text discusses the barriers to a Circular Economic transition and includes reflection questions.

3.5 Summary

The **barriers** to a Circular Economic transition can be grouped under **cultural, technological, market, and regulatory**. Cultural barriers, especially low consumer awareness and hesitant company cultures, are key obstacles in transitioning to a Circular Economy and require shifts in mind set across society!

Reflection questions:

- What benefit to a Circular Economy do you see as most valuable? Can you imagine a benefit not listed?
- Have you recently seen any interesting initiatives or projects that are addressing these challenges?
- Do you see yourself as an informed consumer? What are some brands you respect for the work they are doing?

[Continue with Lesson 4](#) [Back to menu](#)

4. Lesson 4 – How to develop a Circular mind set?

4.1 Lesson 4 - Learning objectives

Lesson 4 - How to develop a Circular mind set?

4.1 Learning Outcomes

After going through lesson 4 you should be able to:

- Understand what a Circular Economic mind set is and why a shift in mind set is important for transitions.
- Share how anyone can contribute to a Circular Economy transition.

[Back to Menu](#)

4.2 What is a mindset?

4.2 What is a mind set?

"Most people spend more time and energy talking around problems than tackling them." - Henry Ford
The mindset of a person results for the most part from 1. *a conditioned basic attitude* as well as 2. *from the personal objective* regarding the respective situation. Connected with this (accompanying) are certain characteristic values and individual moral principles.

Consequently, the basic attitude is formed in the course of life from the following factors:

- Built up (manifested) prejudices
- Adopted opinions
- Basic needs (see "Abraham Maslow")
- Motives (personality and role specific)
- Expectations
- Goals and targets
- Ideas (visions, intuitive drives)



4.3 Dilts Pyramid (1)

4.3 Tools to change Mindsets - The Dilts Pyramid

To make this necessary change, we need to focus on cultivating a new way of thinking in our communities. There is a model of creating change called the Dilts-pyramid.

According to the Dilts-Pyramid model in order to involve people and encourage them to change their actions it is necessary to explain to them on the emotional level, why transition is necessary. What is the goal of the transition to Circular Economy? According to the Dilts-pyramid model if we achieve to address the three upper levels (Aim/purpose, identity, self-image, values, beliefs) of the pyramid, it is easier to change behaviour on the three lower levels (skills, behaviour, environment).

Source for information on Dilts pyramid [here!](#)

[Click to see the Dilts Pyramid!](#)

Dilts pyramid (Slide layer)



Dilts Pyramid ([Source here](#))

[Back!](#)

4.4 Dilts Pyramid (2)

4.3 Tools to change Mindsets - The Dilts Pyramid

The Dilts Pyramid, often associated with Robert Dilts, is a model that explores different levels of human experience and change. It is commonly known as "Neurological Levels" or the "Logical Levels of Change." This model helps individuals understand and work with different aspects of change, ranging from individual behaviors to higher-level identity and values. The model suggests that changes at higher levels are more profound and have a cascading effect on the levels below. The levels in the Dilts Pyramid are described in more details in the following.

1 2 3 4 5 6

Aim and purpose (Slide layer)

LEVEL Aim and purpose

QUESTIONS

- What is it important for?
- What is the goal, what is the meaning?
- "Away from" -> "Towards"

EXPRESSIONS

- I want ...
- My goal is ...
- I hope ...
- I intend ...

1

2 3 4 5 6

Identity/Self-image (Slide layer)



LEVEL Identity / Self-image

QUESTIONS

- Who am I?
- How do others see me?

EXPRESSIONS

- I am ...



Values and beliefs (Slide layer)



LEVEL Values and beliefs

QUESTIONS

- What is important to you?
- What do you pay attention to?

EXPRESSIONS

- I think ...
- it is important to me that ...
- I can't ...



Skills (Slide layer)



LEVEL Skills

QUESTIONS

- What can you do?
- What skills do you need to show observable behavior?
- What processes and strategies are at work?

EXPRESSIONS

- I can / have [competencies]



Behaviour (Slide layer)



LEVEL Behaviour

QUESTIONS

- What do you see and hear?
- What exactly is done?

EXPRESSIONS

- I make / do ...



Environment (Slide layer)

1 2 3 4 5 6

LEVEL Environment

QUESTIONS

- Who?
- When?
- Where?
- With Whom?

EXPRESSIONS

- I see ...

4.5 Dilts Pyramid (3)

4.3 Tools to change Mindsets - The Dilts Pyramid

How can I make this profound social-ecological transformation towards the Circular Economy using the Dilts pyramid?

Let's try to answer the questions of the first three levels representing purpose, identity and values.

AIM AND PURPOSE

IDENTITY

VALUES

Aim and purpose (Slide layer)

4.3 Tools to change Mindsets - The Dilts Pyramid

How can I make this profound social-ecological transformation towards the Circular Economy using the Dilts pyramid?

Let's try to answer the questions of the first three levels representing purpose, identity and values.

AIM AND PURPOSE	What is it important for? How about the survival of humanity as a species? We already reached several planetary boundaries and earth overshoot day is moving closer to the beginning of the year each year. We are using up resources faster than they can recover. Our way of living threatens our survival, not to speak of the harm we cause to other species that we share the planet with. Yeah, it is that important!
IDENTITY	What is the goal, what is the meaning? The goal is to find a way of living that is sustainable for us as humans and everybody else. Circular Economy definitely is a way, because it mimics natural ways, which are circular as well.
VALUES	"Away from" -> "Towards" Away from Linear Economy (take, make, consume, throw away, pollute) to Circular Economy (10R framework)

Identity (Slide layer)

4.3 Tools to change Mindsets - The Dilts Pyramid

How can I make this profound social-ecological transformation towards the Circular Economy using the Dilts pyramid?

Let's try to answer the questions of the first three levels representing purpose, identity and values.

AIM AND PURPOSE	Who am I? Do I want to be part of the solution or the problem? Do I care for myself only or for others as well? Do I think that we have only borrowed the planet from future generations or do I think after me the flood?
IDENTITY	How do others see me? Do I want to be a role model to others? Am I a pioneer? A hero?
VALUES	

Values (Slide layer)

4.3 Tools to change Mindsets - The Dilts Pyramid

How can I make this profound social-ecological transformation towards the Circular Economy using the Dilts pyramid?

Let's try to answer the questions of the first three levels representing purpose, identity and values.

AIM AND PURPOSE	What is important to you? A good life? Relationships? Solidarity? Fairness? Well-being? Quality of Life? Social Justice? Community? Social Sustainability?
IDENTITY	What do you pay attention to? Maybe that economics - in the Aristotelian sense - runs society's household in a way that all household members are equally sustained, while available resources are well managed? Maybe that value creation takes into account the many forms of work (care work, informal work, community work, do-it-yourself)
VALUES	Maybe to social cohesion?

4.6 Concrete Actions to make a Contribution

4.4 Concrete Actions to make a Contribution

What can you do to lead a more Circular life yourself?



The image shows a person with long dark hair, wearing a dark long-sleeved shirt, standing in a field of green plants. Their arms are outstretched to the sides. Overlaid on the image are seven teal circles, each containing a white number from 1 to 7. The circles are positioned as follows: 1 is on the left side, 2 is at the bottom center, 3 is on the upper left side, 4 is at the bottom center, 5 is on the right side, 6 is at the bottom right, and 7 is at the top right.

4.7 Summary (1)

4.5 Summary

Our mind sets were forged during a time where Linear Economy was the dominant economic system, longing for maximising profits and believing in never ending growth of financial wealth independent of nature's boundaries and human well-being.

CE is anchored in a systems thinking approach - it is based on the idea that there is **no such thing as isolated actors or silos** (natural, social, economic), that **everything is interconnected and closed/circular**.

We need to change our mindsets to adapt to the fact of living in a closed system of finite resources and interconnectedness, where our decisions and lifestyles have an impact. We need to redefine our concept of value and a good life.

The approach of the Dilts-pyramid helps to recalibrate our behaviour by focusing on our aims, values and identity.

We have to realise our individual responsibility as members of different but interconnected ecosystems.

4.8 Summary (2)

4.5 Summary

In order to support the transition to a Circular Economy we can contribute today by reflecting on our consumption patterns, the (emotional) needs we fulfil with them, question our mind set, support local sustainable businesses, get involved and lead by example.

How to explain Circular mind set in simple language:

Each generation has a different mind set about life and the way it should be lived and sometimes they collide with each other in a generational conflict.

Our mind set depends on the world in which we grow up and the information available at the time. In order to find common ground we can have a look at our goals in life and our values and connected self-images. We all want a good life and don't destroy our basis of existence - mother earth. Some of us want to contribute to improve the future of our children and grandchildren.

So all of us can start by reflecting on our mind sets and consumption patterns, supporting local and sustainable businesses, connecting to the community and contributing our skills to move towards a Circular mind set together.

[Continue with Lesson 5](#)

[Back to menu](#)

5. Lesson 5– How to deal with resentment

5.1 Lesson 5 - Learning objectives

Lesson 5 - How to deal with resentment

5.1 Learning Outcomes

After going through lesson 5 you should be able to:

- Understand the emotions around the sustainability and climate crisis.
- Know the coping mechanisms in the face of crisis
- Develop compassion and how to meet resentment

[Back to Menu](#)

5.2 Climate anxiety (1)

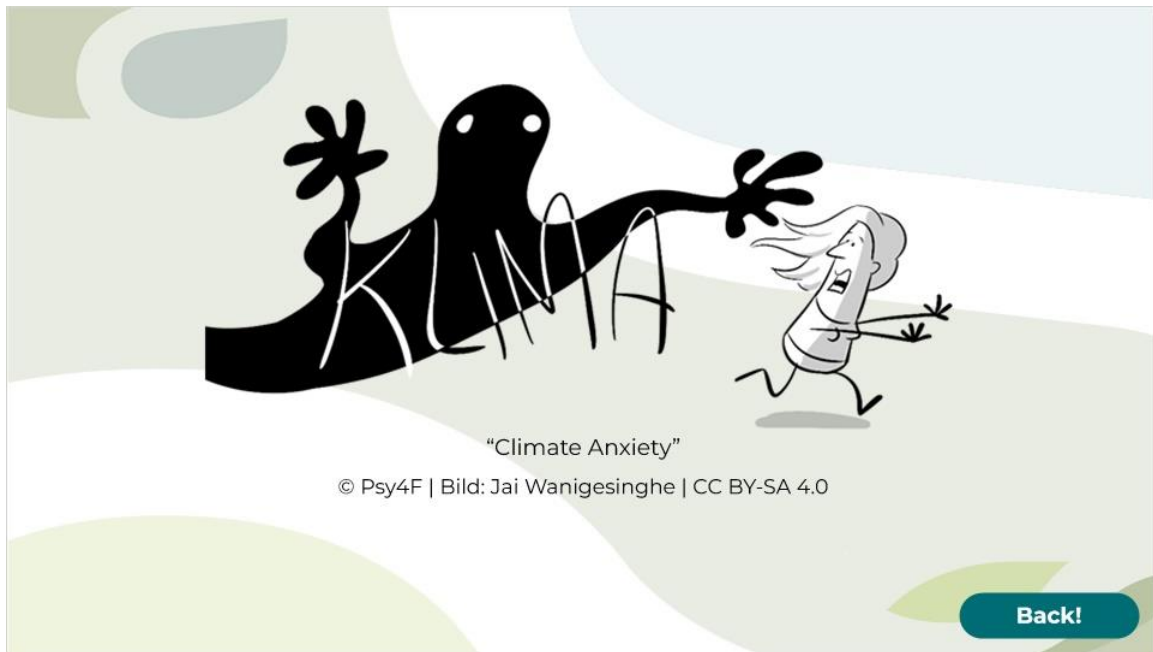
5.2 Climate Anxiety

"We are all more or less fending off the perception of the climate crisis. Looking away happens through many different ways. For the last 40 years, people have increasingly believed that you can have and do anything you want, and don't want to do without anything. This is destroying the planet. If we understand why we are going along with this, we are more likely to stop." (Habibi Coal, 2021)

There are various defence mechanisms, which are based on different possibilities to cognitively dissolve the threat and, if necessary, to give in more quickly to our own inertia or resistance to change. Certainly, habits also play a role: as a rule, these guide us through everyday life in an energy-saving way and accordingly we hold on to them for a long time. And our habits in turn result from our socialisation and our previous life experiences.

[Click to see climate anxiety visualized!](#)

Climate anxiety (Slide layer)



5.3 Climate anxiety (2)

5.2 Climate Anxiety

Problem? - Healthy and normal? - Or both?

Fear is an appropriate response to the real threat posed by the climate and sustainability crisis. Its content and symptoms can vary widely. An anxiety reaction often occurs in the face of previously unknown or extreme news (e.g. about the tipping points of the Earth system, unfavourable forecasts,...). "Climate anxiety" is a fairly recent concept and research on it has just begun.

Both the loss of familiar natural environments (e.g., species or landscapes) and the risks of the climate and sustainability crises lead to psychological reactions. All psychological defence mechanisms can occur. This is healthy and normal.

Fear of danger and threats is initially a natural and healthy reaction. It motivates important actions to eliminate the threats. However, fears and grief can also lead to acute or chronic psychological reactions that limit people's ability to act. These range from mild depression to clinical illness.

5.4 Role and responsibility of the media

5.3 Role and responsibility of the media

There is much evidence that media messages about the climate crisis that merely portray the negative consequences, for example via catastrophic images, can lead us to feel incapable of taking action. Fear can play a mediating role in this as an emotion: We see catastrophic images → these scare us → we have no knowledge about what we can effectively do about the catastrophe → the fear increases and we feel helpless. However, we are more likely to switch into repression mode when mediated by the media without a corresponding prospect of possible action.

"In the long run, the downright bombardment of negative headlines can lead to stress, hopelessness and passivity. The frequently triggered fear ensures the release of stress hormones every time and puts the body on alert. If this happens constantly, it can lead to chronic stress. In psychology, there is talk of [learned] helplessness, which in this case arises from the fact that recipients are repeatedly shown how bad the world is, without being shown possible solutions and ways out, including their own participation in them."

Fear = Powerlessness?

Role and responsibility of the media (Slide layer)



Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0

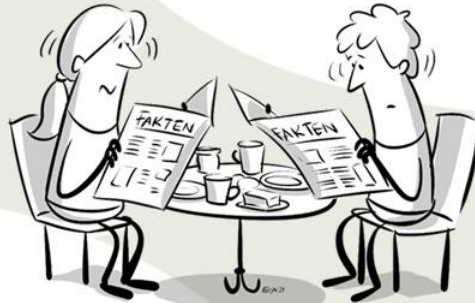
Negative media coverage without pointing out solutions and (own) possibilities for action can, in the long term, lead to recipients feeling powerless and unable to act.

Back!

5.5 Psychological reaction - coping mechanisms

5.4 Psychological reaction - coping mechanisms

The climate crisis is threatening. As humans, we like to avoid or ward off unpleasant feelings..



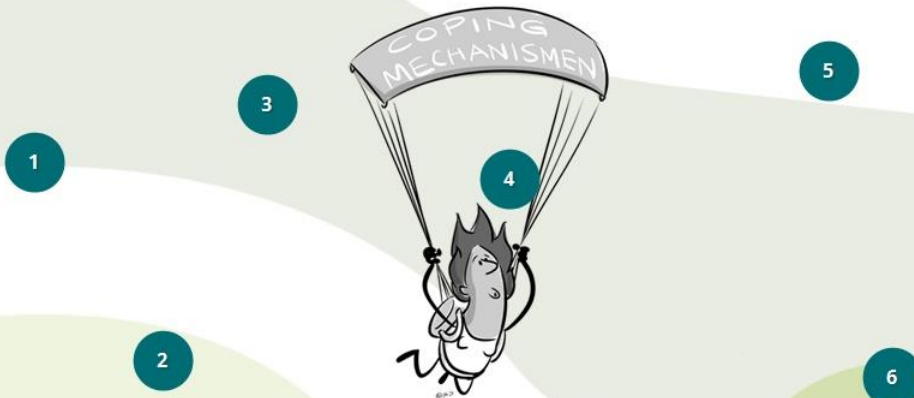
© Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0

If we deal more with the **climate crisis**, we often feel more unpleasant feelings.

5.6 Facets of Defense (1)

5.4.1 Facets of Defense

Ultimately, these are coping mechanisms that, on a small scale, ensure that we can feel good about ourselves despite everything.



© Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0

5.7 Facets of Defense (2)

5.4.1 Facets of Defense

Our psychological defence mechanisms are not inherently bad. They protect us from being overwhelmed (like a computer that has too many programs running at the same time and therefore crashes - our defence mechanisms or filters stop or close certain programs, so to speak). But in larger and long-term crises, which seem very complex and very demanding on the imagination, such mechanisms can ensure that in the long term vital programs are closed, so the PC may not crash at the moment, but will soon break down completely.

Our psychological defences are shaped by the spirit of the times. Capitalism, neoliberalism, higher-faster-further, competition, self-optimization, ...



5.8 Facets of Defense (3)



"The way our human world works makes us grow up believing that we have the right to "take" everything, and to brand limits, restriction, and renunciation as, for example, job-threatening. The belief in limitless growth shapes our defences: thinking and acting in solidarity has become rather foreign to us." (Habibi-Kohlen, 2021)

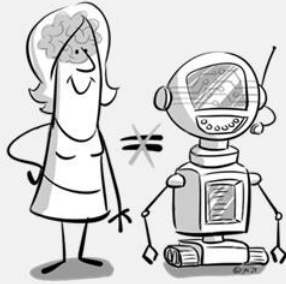
© Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0

5.9 Cognitive Distortions

5.4.2 Cognitive Distortions

Our brain does not work like a computer. This is necessary and good. We should be clear what the consequences of this are..

Cognitive distortions change our perception. It is good to be aware of them and learn to deal with them.



© Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0

1 2 3 4 5 6

What is a cognitive bias? (1) (Slide layer)

What is a Cognitive Bias?

The brain's distinct functioning, unlike a computer, is essential and beneficial. In order to be able to better structure and process our complex reality, our brain almost intentionally builds simplifications into our experience. These relieve us individually and prevent us from being overwhelmed.



© Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0

1

2 3 4 5 6

What is a cognitive bias? (2) (Slide layer)

What is a Cognitive Bias?

Comparisons are often drawn between the brain and the computer. There are many things we humans have not yet figured out about how our brain really works. A computer is much simpler and so such analogies often help with explanations. There are also some parallels as well as significant differences: Our brain can cheat when processing reality - it bends, distorts or simplifies the information from our environment so that we possibly come to different results than the information actually indicates. We call such distortion mechanisms "bias". And there are quite a few of them. Only a few of them will be presented here.

1 2 3 4 5 6

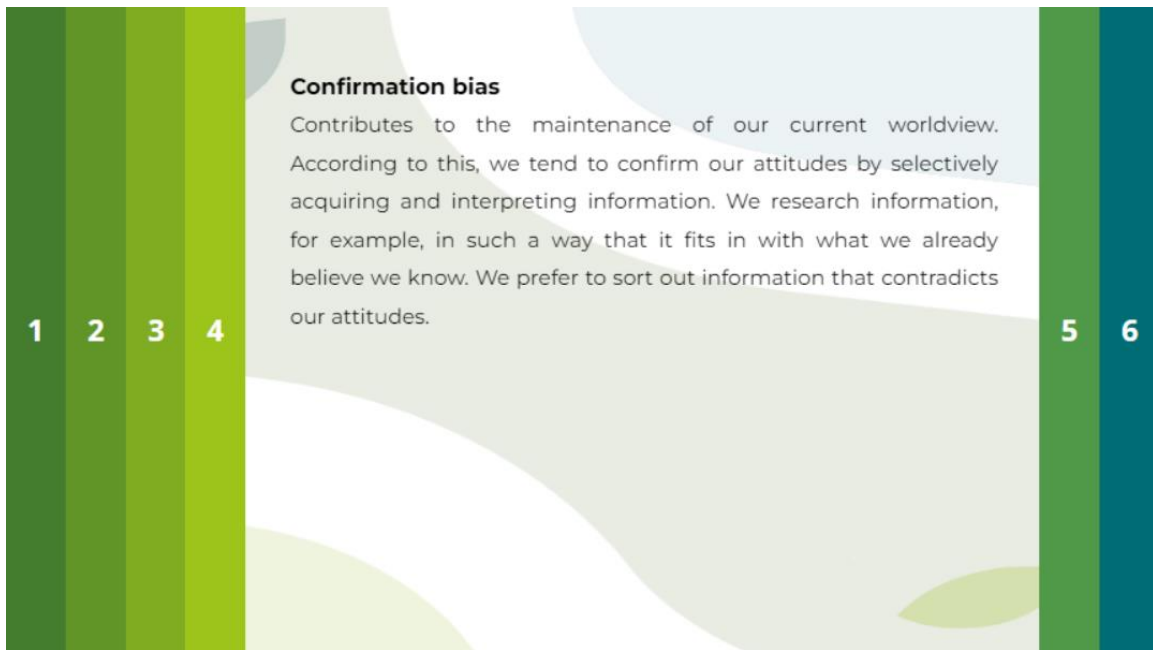
Optimistic bias (Slide layer)

Optimistic bias

With the optimistic bias, we look too optimistically into the future and assume that nothing will happen. This is therefore a form of optimism that is rather obstructive in the climate crisis, tends to inhibit our environmentally friendly actions and tends to avoid unpleasant emotional reactions such as fears. The positive counterpart would be a realistic hope or confidence that lets us see things as they are without paralyzing us, and provides us with the energy to do something because we are sure that it will lead to something and that we are not alone in this.

1 2 3 4 5 6

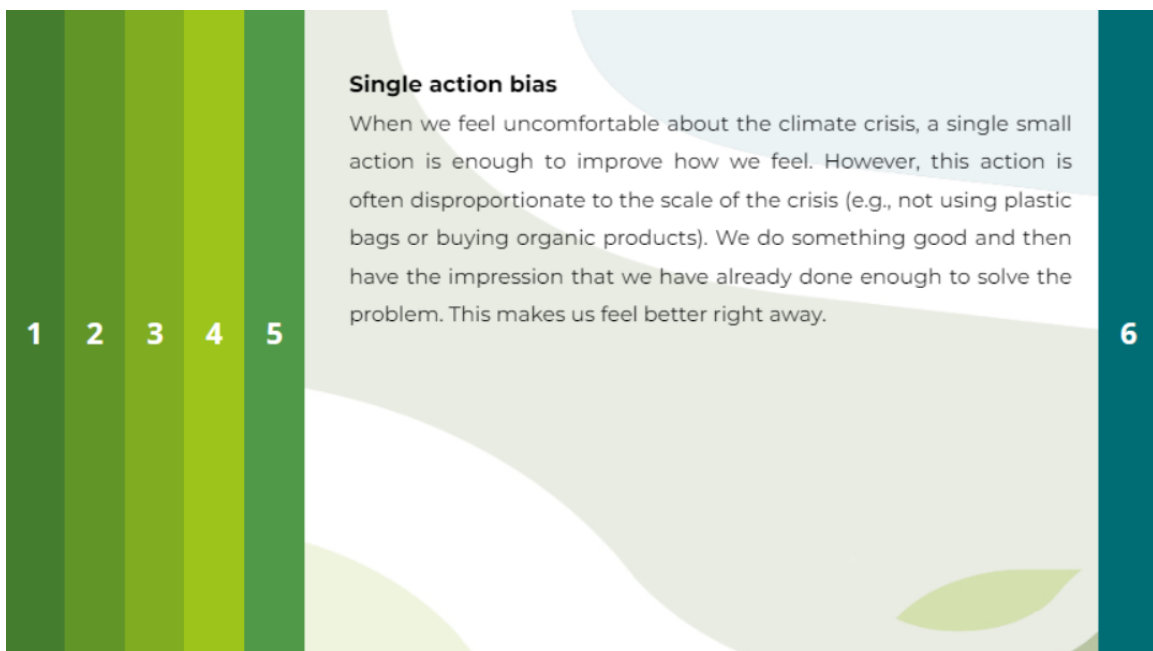
Confirmation bias (Slide layer)

The slide features a decorative background with a light blue and green abstract shape on the right and a vertical bar on the left. The vertical bar is composed of six colored segments: four shades of green and two shades of teal. The numbers 1 through 6 are placed on these segments. The text is centered in the main area of the slide.

Confirmation bias

Contributes to the maintenance of our current worldview. According to this, we tend to confirm our attitudes by selectively acquiring and interpreting information. We research information, for example, in such a way that it fits in with what we already believe we know. We prefer to sort out information that contradicts our attitudes.

Single action bias (Slide layer)

The slide features a decorative background with a light blue and green abstract shape on the right and a vertical bar on the left. The vertical bar is composed of six colored segments: five shades of green and one teal. The numbers 1 through 6 are placed on these segments. The text is centered in the main area of the slide.

Single action bias

When we feel uncomfortable about the climate crisis, a single small action is enough to improve how we feel. However, this action is often disproportionate to the scale of the crisis (e.g., not using plastic bags or buying organic products). We do something good and then have the impression that we have already done enough to solve the problem. This makes us feel better right away.

Present bias (Slide layer)

Present bias

We give greater weight to the present than to the future. That is why it is important to focus on the effects of the climate crisis in the here and now when communicating about it. In this way, we can take advantage of the "present bias" in our communication.

5.10 Excuses

5.4.3 Excuses

Here we see the four categories of climate change excuses according to Levi et al. (2021) that shape the political discussion on climate change and lead to blockage or delay. All categories can also occur in combination. Some of the arguments are presented with great sophistication. Some of the arguments contain partial truths that must be taken into account, but nevertheless must not lead to delaying climate protection as they do.

4	4	1	1
... that won't work anyway!	... that is way to expensive!	CLIMATE PROTECTION YES! BUT ...	
3	3	2	2
... please not too radical!	... the others are up first!		

5.11 Awareness and involvement (1)

5.4.4 Awareness and involvement

A fundamental rational awareness of the problem is now present in the vast majority of the population. However, we as people are motivated to act above all when we can also establish a personal emotional connection to the climate crisis. And it is precisely when we realize that other people are already affected, and that this moves us emotionally, that the motivation to take action for sustainability already increases. On the other hand, a complete shutting out of emotions leads to denial, while an unregulated emotional involvement can lead to burnout and withdrawal. These two extremes should be avoided at all costs, because they lead to inaction or the inability to act.



Denial

Rational understanding

Personal emotional connection

Change of perspective (empathy & caring)

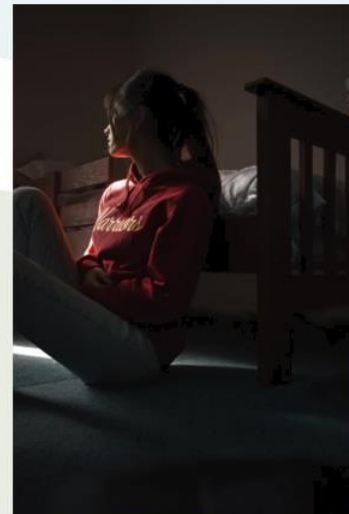
Continuous occupation / burn out



5.12 Awareness and involvement (2)

5.4.4 Awareness and involvement

Unpleasant feelings often signal an existing threat to us, and we want to get rid of these unpleasant feelings as quickly as possible. At best, by ending the threat. Feelings such as fear can thus motivate people to adequately prepare for an approaching threat or to end it by actively intervening (problem-centred coping). However, this requires (a) that we also recognize our feelings as such and have learned to deal with them in a reflective way, (b) that we know of concrete and effective possibilities for action, and (c) at best, we know that we are not alone but can act together with others. If, on the other hand, we seem to lack the means and possibilities, then we tend to repress the threat through mental defence mechanisms in order to get rid of the feelings (emotion-centered coping). If even that no longer works and the threat overwhelms us emotionally, then we may withdraw, become passive or even feel powerless.




5.13 Risk perception (1)

5.4.5 Risk perception

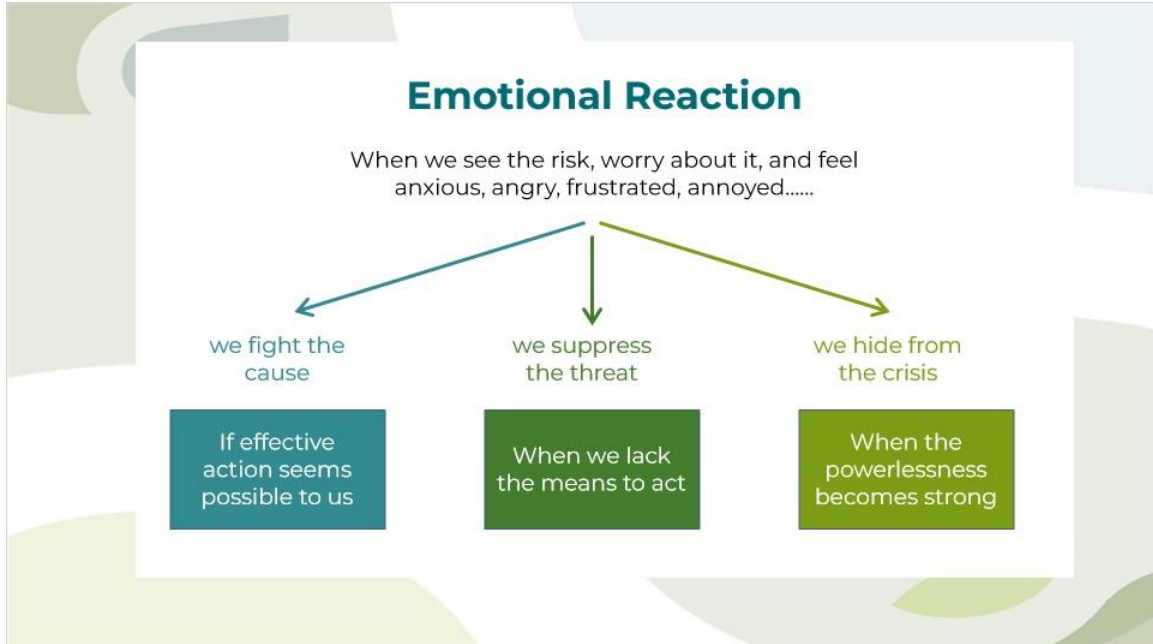
If people perceive a personal risk (this can be physical, material or social - it can also be that personal values are threatened), they are usually anxious to do something about it. But cognitive biases can interfere with a realistic perception of risk and thus lead to a lack of motivation or pressure to act. Favouring factors are direct experiences (which not everyone will have and which should not be actively forced - but can also be conveyed through the media), access to resources that are necessary for active action, the expectation that one's own behaviour will also be effective, and a sense of personal responsibility.

Influencing factors:



© Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0

5.14 Risk perception (2)




5.15 How to motivate people to action (1)

5.5 How to motivate people to action

Values are a basis for the fact that we can be activated emotionally at all. Without a corresponding value system, the environment may not be important enough for us to want to protect it!

Examples of social values

- Good life for ourselves
- Good life for our children (and the following generations)
- Do not live at the expense of children
- Living beings have their own rights



© Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0


5.16 How to motivate people to action (2)

5.5 How to motivate people to action

"There are many current crises in our world that are interconnected. In the foreground right now is the climate and sustainability crisis. For us, our fellow human beings and the people of the future, it is very important that these crises are solved. For that, we humans need to do many things differently:

- We can think about what is really important to us in life and what we want to protect.
- We can help others understand these crises and protect our environment better.
- We should do the tasks and set the priorities in such a way that we become really effective.
- The tasks need to be addressed quickly and extensively.
- We need to reliably and equitably share the work at hand to do this.
- Everyone should contribute so that in the end we succeed together."

(Hagedorn & Peter, 2021)



© Psy4F | Bild: Jai Wanigesinghe | CC BY-SA 4.0

[Click to find out more about another way to motivate people!](#)

How to motivate people to action (Slide layer)

Change with hand & foot

Do you know your **CO₂-Footprint?**

How about the **ecological handprint?**

Expectations of efficacy may be a good reason for fears to lead to active action rather than inaction!

Back!

5.17 How to motivate people to action (3)

5.5 How to motivate people to action

According to a definition by Germanwatch, the handprint "symbolises sustainable action and commitment." It is about approaches to action "that reach beyond one's own individual behaviour. The often problem-oriented approach of renunciation [...] (reducing footprint) is thus juxtaposed with a proactive approach of possible actions and solutions (increasing handprint)" (Reif & Heitfeld, 2015, pp. 5-6).

Psychologically, the "handprint" seems to be more promising than the "footprint": With the footprint, the responsibility is shifted to the citizens. The calculation is usually sobering / unmotivating. With the handprint, indirect effects are counted and the scope of possibilities is increased. A CO₂ handprint symbolises the ecological progress already achieved and can theoretically grow to infinity. The handprint aims (politically) more at the system, the footprint at me personally (individual focus). I.e. not that reducing the footprint is a bad thing: on the contrary, a larger handprint aims at making our footprints all so much smaller that we can solve the climate crisis.


5.18 How to motivate people to action (3)

5.5 How to motivate people to action

There are two central challenges!

Challenges: Double-click on the fields below! To **reset** the Flipcards click here:

Reset



How to motivate people to action (Slide layer)

5.5 How to motivate people to action

There are two central challenges!

Challenges: Double-click on the fields below! To **reset** the Flipcards click here:

Reset

<p>Adaptation</p> <p>Individual and collective adaptation to changing living conditions (staying healthy and ready for societal transformation)</p>	<p>Development (transformation)</p> <p>The necessary change in our social, ecological and economic relationships in order to be able to contain the climate crisis and prevent even worse excesses (live, work, manage sustainably)</p>
--	--

5.19 How to motivate people to action (4)

5.5 How to motivate people to action

We face two major challenges in addressing the climate crisis: Adaptation, in the sense of individual and collective adjustment to changing living conditions. And transformation, meaning changing our social and economic conditions to mitigate further severe climate change. But we must accept that adaptation alone is not enough. It is important to stay healthy and be ready for transformation, but in the long run it would be fatal to pursue only this strategy, because global warming and the climate crisis will increase in magnitude if we do not evolve as humans.

The climate and sustainability crisis is a complex issue. It requires a complex response from people. This does not mean that every single person has to perform complex actions. That would overwhelm us all. No, it means that people should participate together in their networks to make complex collective changes, and this participation can also be very simple. (Dohm et al., 2021)

5.20 Communication (1)

5.6 Communication

When confronted with any of the above mentioned feelings of resentment, denial or fear, we have to keep in mind that in order to engage people effectively, who might still be in doubt, we have to build bridges, instead of putting blame on anyone. And thus get people on board.

it is about avoiding frustration experiences, shame experiences, and other negative communication elements as best we can in order to love ourselves and each other.

It is about building bridges and not deepening trenches, some of which have a long history of slights.



5.21 Communication (2)

5.6 Communication

How to communicate well

We build bridges by sharing the common value orientations. Or, to put it more directly: talking about what we share.

In addition, a profoundly human ability is helpful: **Storytelling**

As Per Grankvist, the chief storyteller for Sweden's Viable Cities program, says, his job is to communicate the realities of day-to-day living in a carbon-neutral world:

„We need storytellers because generally when scientists come up with conclusions, they are very non-personalized,” he says, „When you take research out into the public and you want people to connect with it, you have to involve an ‘I,’ a ‘we.’ My job is helping people to emotionally connect. When they emotionally connect with an issue, then they engage.”

(Grankvist in O'Sullivan, 2019)

5.22 Communication (3)

5.6 Communication

When we engage in concrete relationships through our communication, we simultaneously avoid responsibility diffusion.

So listening seems to have a key role in successful communication. Don't lecture!

Excessive fear may result in the reluctance to confront the reality of the existential crisis. So if we increase the fear of our counterpart by accumulating facts, we will slam doors rather than open doors.

Put emphasis on concrete options for action of the counterpart. When we return to action through communication, we avoid helplessness and paralysis, which is a natural reaction to existential crisis.

It is necessary to meet each other again and again in a loving way. This also makes it easier to see each other as people with diverse talents and resources and helps to build good sustainable relationships.

We need to emphasise what we have in common, may it be the love for our families, nature, children and grandchildren. These are things that give us strength. In the existential crisis we are in, this strength is important for our survival - as individuals and as a group

[Continue with the Scenario](#) [Back to menu](#)

6. Scenarios of How to Explain Circular Economy to Seniors

6.1 Scenarios of How to Explain Circular Economy to Seniors

Scenarios of How to Explain Circular Economy to Seniors

Based on a scenario-based learning on Linear Economy; Sustainable Development Goals (SDGs); barriers and benefits of Circular Economy and changing our mind set and resentment

Structure: Right/Wrong
Slide 1: Explain scenario
→ Right answer leads to explanation/feedback.
→ Wrong answers lead to explanation/feedback and another circle back to Slide 1.

Key elements:

- Understand: the user must understand the scenario
- Apply: user apply their knowledge through the scenario
- Reflect: provide feedback so they can reflect on what they just did and how to improve

Are you ready?

[Back to Menu](#)

6.2 Scenario Setting 1

Explaining to seniors what Linear Economy is and why we have to change it

We currently live in a Linear Economy. That means that our consumption of products follows a straight line. We take resources to make things and when we do not want the things anymore we throw them away. Because of this, we are polluting our planet with all the things we do not want or use anymore and we are using up all the Earth's resources without concern. This is leaving us in a bad situation where the outlook for future humans is bad. If we want our children and grandchildren and great-grandchildren to enjoy nature and have a healthy life, we need to do something fast.




6.3 Scenario Question 1

(Pick One, 10 points, 1 attempt permitted)

Question 1

When explaining the problems of Linear Economy to seniors you should tell them that:



- ...their generations have ruthlessly wrecked up the planet with their egoistic behaviour and it is all their fault, that future generations have a limited chance for survival and well-being.
- Linear Economy does not work on a planet with finite resources. The current Linear Economy of taking-making-using-wasting has brought us to the point where we extract resources from the biosphere without restoring the same value so that it is available to our children.
- ...governments and the economy are solely responsible for the futile situation our planet is in.

6.4 Scenario Setting 2

Explaining what SDGs are and how they can be guardrails for moving to a sustainable style of living

Leaders and experts from all over the world came together to come up with ideas about how we could reach this future and they came up with the Sustainable Development Goals (SDGs). The SDGs are seventeen goals to help us reach a sustainable way of living that includes everyone. Examples of the goals include Goal 1: "End poverty in all its forms everywhere", Goal 5: "Achieve gender equality and empower all women and girls", and Goal 12: "Ensure sustainable consumption and production patterns". These goals help us focus our decisions for the future. Countries everywhere agreed to these goals and are doing their part to make them a reality!



6.5 Scenario Question 2

(Pick One, 10 points, 1 attempt permitted)

Question 2

When explaining how the SDGs help to overcome the problems caused by the current economic system, you should say:



- SDGs help humanity focussing our decisions on a sustainable and inclusive future for humanity.
- SDGs are there to improve and secure future profits for the economy.
- SDGs are more focused on countries with less financial resources.

6.6 Scenario Setting 3

Explaining the barriers and benefits of Circular Economy

One of the greatest barriers for a transition to Circular Economy are cultural barriers. While government and industry can work to shift cultures, much of the work done to shift a cultural viewpoint is done at the grassroots level and depends upon active and engaged individuals. We all can do our part by striving to become educated, aware consumers and sharing that knowledge with everyone around us. If we think back to the R-Frameworks, many of those R's - refuse, reduce, reuse, repair - ask us as consumers to be aware and intentional in our choices. By collaborating together to make the change, we can all see the benefits of a better future!



6.7 Scenario Question 3

(Pick One, 10 points, 1 attempt permitted)

Question 3

When advocating the benefits of CE to seniors, you can tell them:



Only governments and the industry are responsible for the shift of the economic system. The consumer is powerless.



The Circular Economy is an attractive and necessary alternative that seeks to redefine the notion of growth, with a focus on benefits for the entire society.



Recycling your waste is all you can contribute and a sufficient practice.

6.8 Scenario Setting 4

When talking about changing our mind set

Each generation has a different mind set about life and the way it should be lived and sometimes they collide with each other in a generational conflict. Our mind-set depends on the world in which we grow up and the information available at the time. In order to find common ground we can have a look at our goals in life and our values and connected self-images. We all want a good life and contribute to improving the future of our children and grandchildren. So all of us can start by reflecting on our mind sets and consumption patterns, supporting local and sustainable businesses, connecting to the community and contributing our skills to move towards a Circular mind set together.



6.9 Scenario Question 4

(Pick One, 10 points, 1 attempt permitted)

Question 4

If you are confronted with doubt, denial or any other negative attitude related to CE or own personal responsibility/contribution, this is how you can react:



- Refer to the responsibility of the baby boomer generation for wrecking up the planet.
- Ignore the person and only talk to the open-minded people in the room.
- Change the perspective and consider how arguments and underlying values relate to each other. Whatever values, people feel they have to protect, are eventually threatened by the climate crisis. Our entire system is threatened by the climate crisis: economic growth, human health and also ecological problems like a loss in biodiversity or problems regarding water supply, resulting in general negative impacts on quality of life and well-being.

6.10 Scenario Setting 5

Discussing a shift in our mindset

Exploring the evolution of mindset, diverse generational perspectives often clash due to the influence of upbringing and available information. Unifying around shared life objectives, values, and self-perceptions, the collective aspiration is to lead enriched lives and uplift the prospects for future generations. Delving into introspection regarding our mindsets and consumption habits, backing local and sustainable enterprises, building community ties, and offering our skills can collectively propel us toward an embraced Circular perspective.




6.11 Scenario Question 5

(Pick One, 10 points, 1 attempt permitted)

Question 5

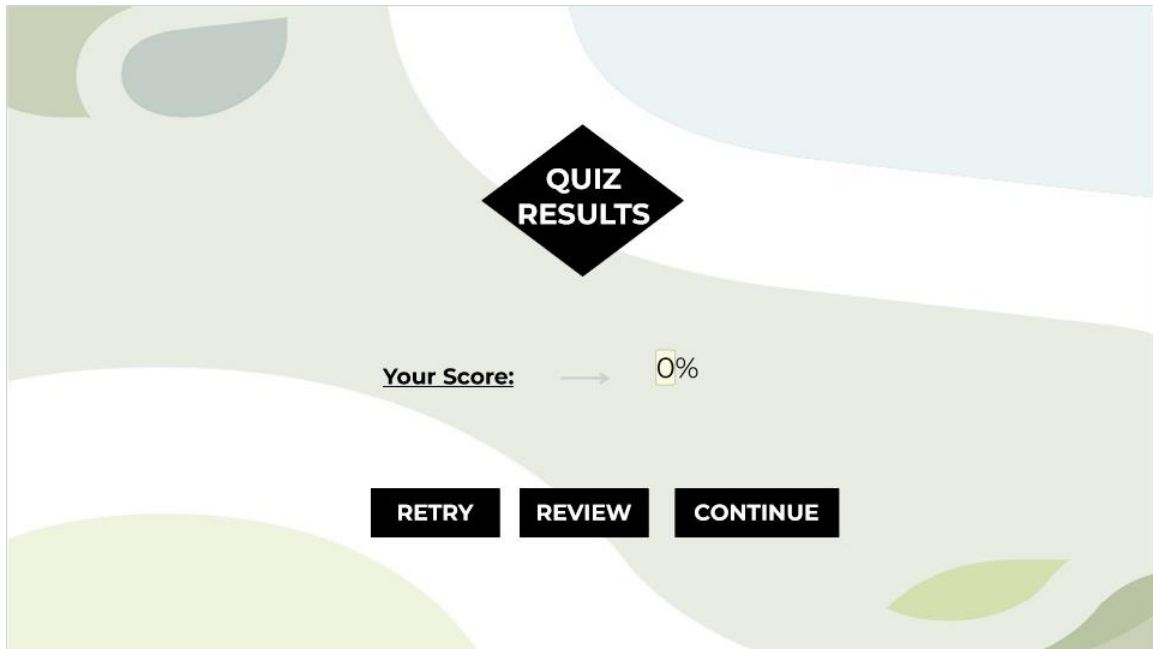
What to say, when people argue that climate action threatens the economy and our prosperity and puts a burden on poor families:



- It is undisputed that social justice must always be taken into account in the necessary social transformation. Marginalised populations are victims of climate action.
- In fact, it is precisely the lack of climate protection that poses the greatest risk to our prosperity, a fact that is often ignored in the discussion.
- You are right, climate change and sustainable living threatens jobs and prosperity.

6.12 Scenario (Quiz results)

(Results Slide, 0 points, 1 attempt permitted)



The slide features a central black diamond with the text "QUIZ RESULTS" in white. Below it, the text "Your Score:" is followed by a right-pointing arrow and a yellow box containing "0%". At the bottom, there are three black rectangular buttons with white text: "RETRY", "REVIEW", and "CONTINUE". The background consists of abstract, organic shapes in shades of green and blue.

6.13 Scenario (SEN4CE Tree)



The SEN4CE Tree

The tree shows you the progress of the course. In the process, you may discover some surprises as well.

Keep going! Your efforts have resulted in the tree growing stronger and taller with each passing step.

Congratulations! Your hard work has paid off and you've helped plant the seed for a new tree to grow!

You did it! The final stage of the tree's growth shows just how much dedication and determination you've put into this course. Keep up the great work!

You are a true environmental champion! The tree you helped grow is thriving and providing vital benefits to its surroundings.

You're making a real impact! With each point earned, the tree thrives and becomes more beautiful.

[Back to Menu](#)