



Art Design & Sustainability

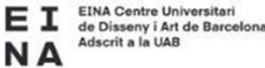
Design for a better future



Short Learning Program of “Art & Design & sustainability with special focus on environment and climate change. Cooperation partnerships in higher education.

Module 1

Sustainability & Climate change: historical perspective and their relationship with Arts





Warming up Activity - Summary

Name of Activity	Setting	Aim	Time (h)
A0. Initial thought on Sustainability	Individual Online and Classroom	Warming-up activity to improve the awareness, train being present, and enhance the ability to think sustainably.	2



Warming-up Activity- Instructions

Step 1- Find a piece of a poem (or write it down) with a link to the concept of sustainability.

Step 2- Select three keywords that show the links between Sustainability and the selected poem.

Step 3- Share your selected poem, the keywords, and a brief note (up to 100 words) on how the concept of sustainability emerges in this poem.

Step 4 - Have a look at your colleague's contributions to react/comment on them (minimum 1 and maximum 3).

Lesson 1

Topic 1

Sustainability
Concepts and
Circular Economy

Essential Questions

What is sustainability and what are its main dimensions?

What is the concept of Circular Economy?

What is the relationship between Circular Economy and Sustainability?

I. Sustainable Development

Definitions and Concepts

Before we start...

One person can make a difference...



Image source: <https://sojo.net/articles/why-we-must-change-how-we-change-world>

And everyone should try

(J F Kennedy)

What is Sustainability...?



The **capacity** to
keep up or keep
going...

The quality of
being able to
continue over a
period of time

(Cambridge Dictionary)

To sustain
something means
to enable it to
continue for a
long time

Source: Moreno Pires, S. et al. (2022). EUSTEPs MOOC: Sustainability and Ecological Footprint: from theory to practice. Topic 1/Part 2- Sustainability Concepts (Slides). <https://repositorioaberto.uab.pt/handle/10400.2/12981>

What is Sustainable Development?

The term “sustainable development” has become commonplace in mainstream politics and governance.

However, not everyone is aware of what it truly means

There is no fixed definition and each sector has used the term in various ways.

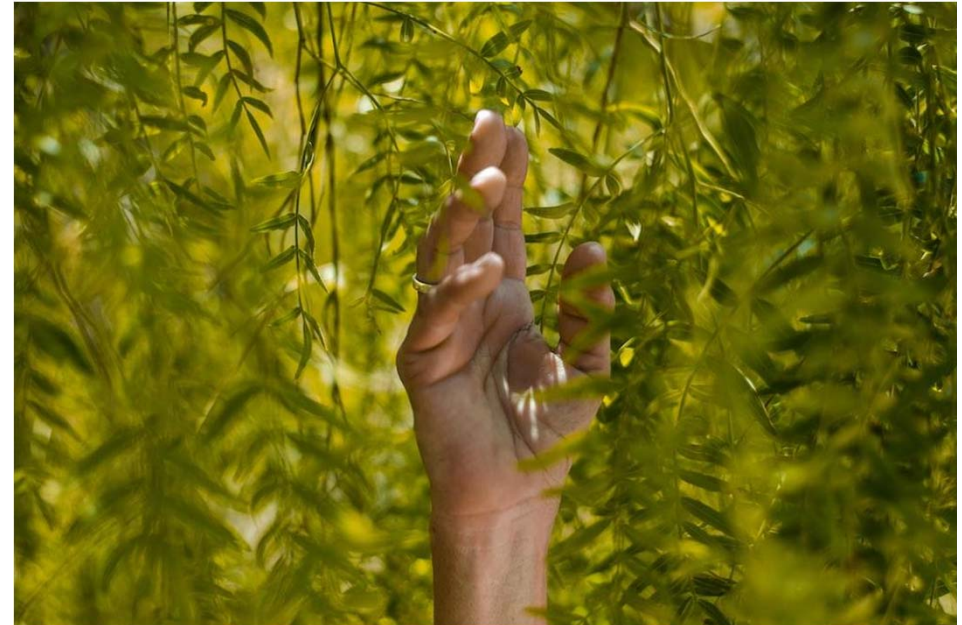
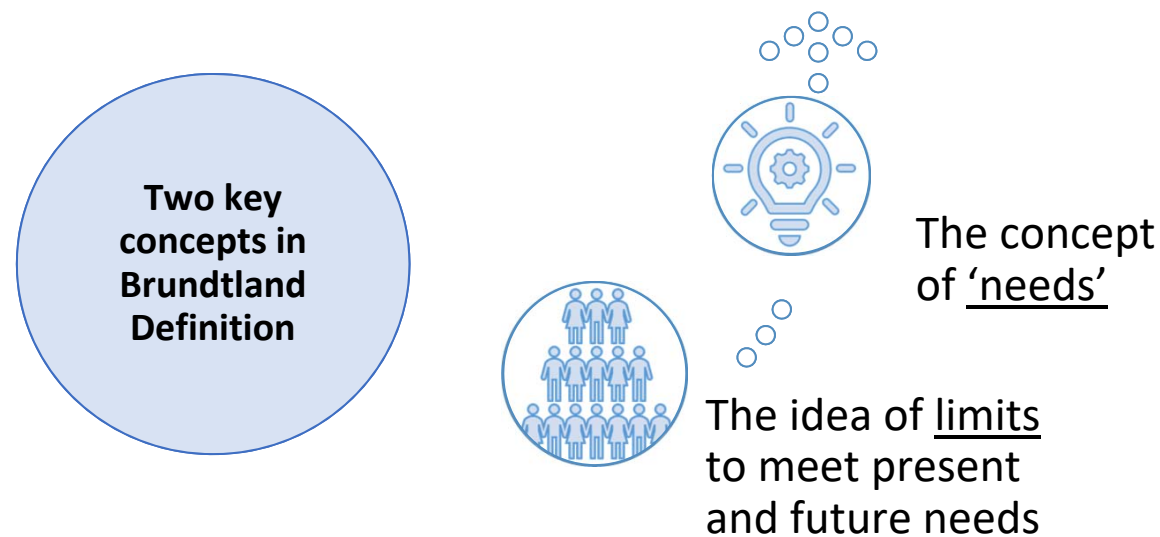


Image source: Rafael Albornoz. https://unsplash.com/photos/WHY_c8sxghg

What do YOU think sustainable development is...?

The Brundtland Definition (1987)

Sustainable development is a development that meets the **needs** of the present without compromising the **ability of future generations** to meet their own needs.



Source: Moreno Pires, S. et al. (2022). EUSTEPs MOOC: Sustainability and Ecological Footprint: from theory to practice. Topic 1/Part 2- Sustainability Concepts (Slides). <https://repositorioaberto.uab.pt/handle/10400.2/12981>

More definitions about Sustainable Development

UNDP (1994):

(...) A process for realizing human development... “in an inclusive, connected, equitable, prudent and secure manner.”

Rio Declaration, adopted by the United Nations conference on Environment and Development in 1992:

“Human beings are at the center of concern for sustainable development. They are entitled to a healthy and productive life in harmony with nature.”

Soubbotina, Beyond Economic Growth, The world Bank, 2004:

“In the final analysis sustainable development is about long-term conditions for humanity’s multi-dimensional well-being.”

Some examples of the term “sustainable development”, used in different ways:



Image source: UNDERSTANDING & LEADING SUSTAINABLE DEVELOPMENT Phil Lane, Jr. Four Worlds International www.fwii.net



In the context of forestry, sustainable development can mean the harvesting of trees and other forest products at a rate that does not exceed the capacity of the forest to regenerate itself.

Source: Moreno Pires, S. et al. (2022). EUSTEPs MOOC: Sustainability and Ecological Footprint: from theory to practice. Topic 1/Part 2- Sustainability Concepts (Slides). <https://repositorioaberto.uab.pt/handle/10400.2/12981>

Some examples of the term “sustainable development”, used in different ways:



In the context of urban planning, sustainable development can mean managing growth within the capacity of infrastructure to service the population.

Source: Moreno Pires, S. et al. (2022). EUSTEPs MOOC: Sustainability and Ecological Footprint: from theory to practice. Topic 1/Part 2- Sustainability Concepts (Slides). <https://repositorioaberto.uab.pt/handle/10400.2/12981>

Some examples of the term “sustainable development”, used in different ways:



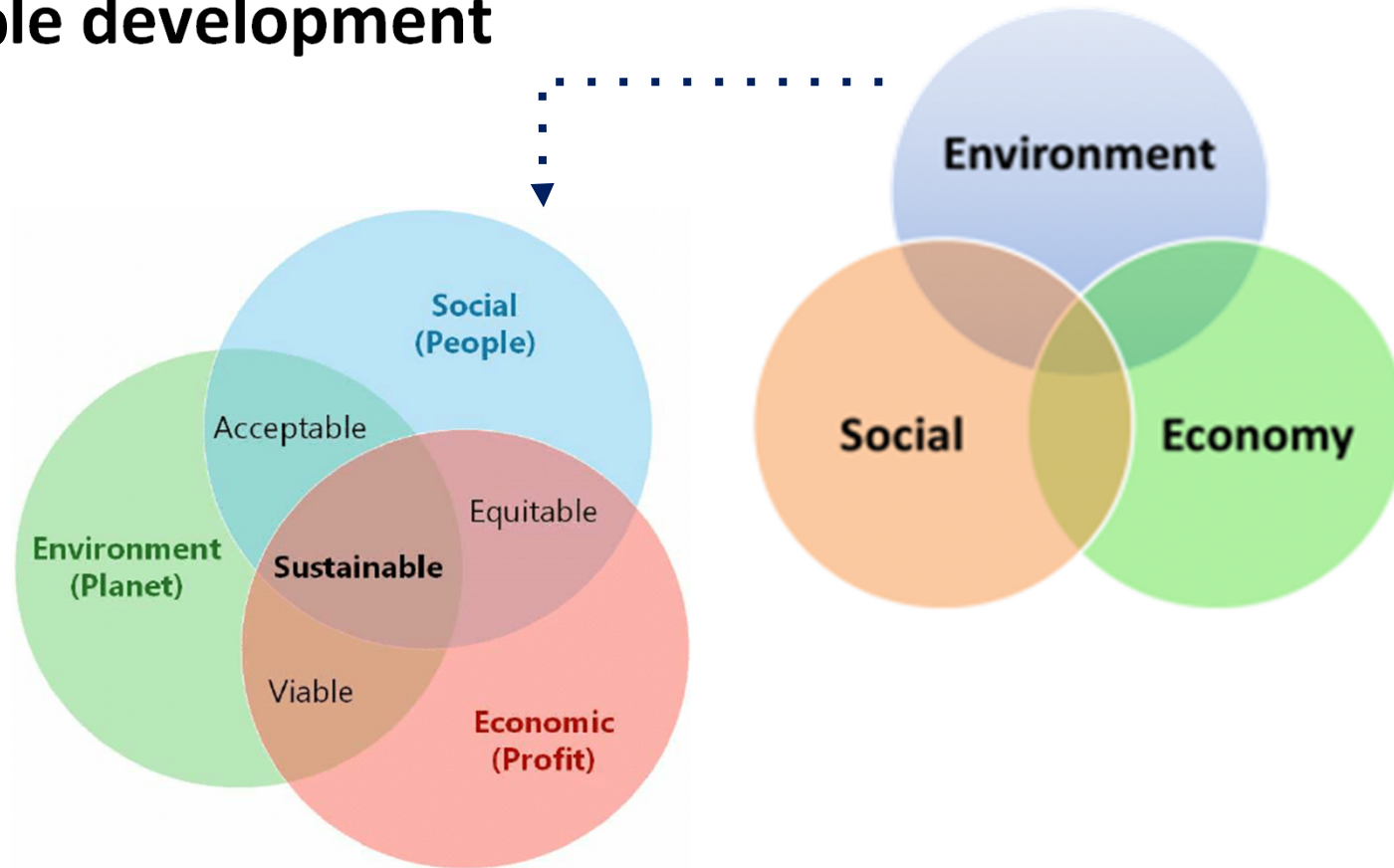
Image source: UNDERSTANDING & LEADING SUSTAINABLE DEVELOPMENT Phil Lane, Jr. Four Worlds International www.fwii.net

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II. Sustainability

Pillars

Interdependent and mutually reinforcing pillars of sustainable development

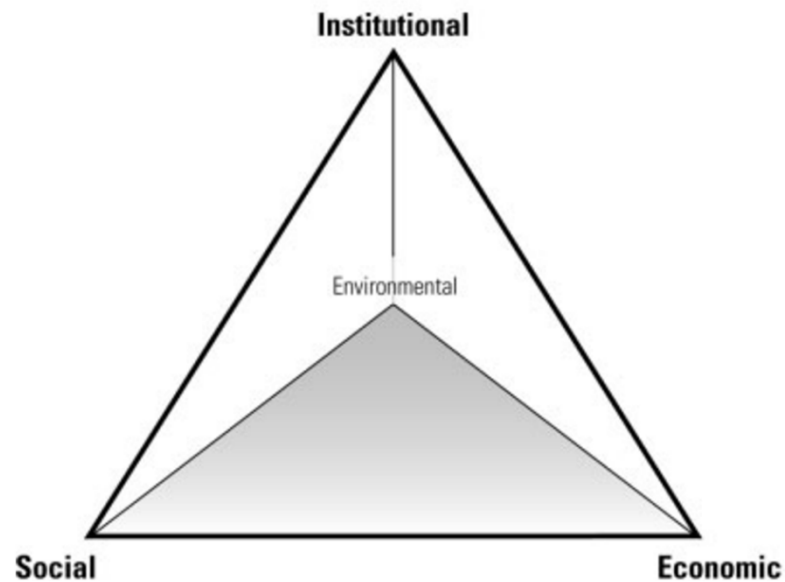


What is different about sustainable development?

- First, the concept of sustainable development is based on the idea that there is no such thing as a purely environmental problem. There are always social and economic implications as well.
- Second, sustainable development is based on the idea that development is essential, but that it must be a different 'quality' of development, organized differently, that takes environment into account- conserving or enhancing the environment is not the sole purpose.

Source: Moreno Pires, S. et al. (2022). EUSTEPs MOOC: Sustainability and Ecological Footprint: from theory to practice. Topic 1/Part 2- Sustainability Concepts (Slides). <https://repositorioaberto.uab.pt/handle/10400.2/12981>

Adding one more pillar...?



Source: Spangenberg, J.H., 2002. SUSTAINABILITY INDICATORS : AN ANALYSIS OF THE INSTITUTIONS IN AGENDA 21

Institutions (confusingly called 'social capital') are the result of inter-personal processes, such as communication and cooperation, resulting in information and systems of rules governing the interaction of members of a society.

Weak Sustainability vs Strong Sustainability

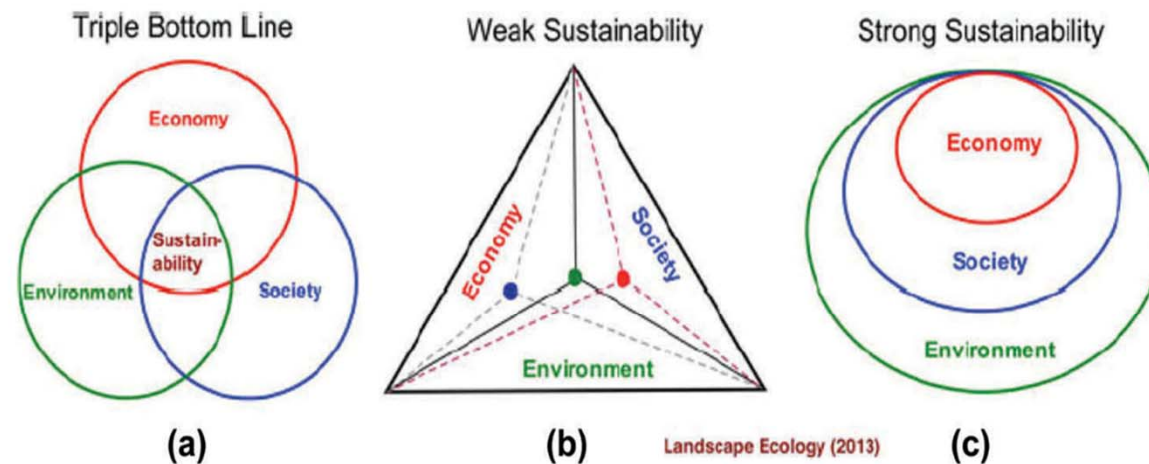


Figure 1. From Wu (2013): 'Illustration of the triple bottom line definition of sustainability (a) and weak sustainability (b) versus strong sustainability (c). The three situations in b are equally sustainable because weak sustainability allows for substitutability as long as the total capital (i.e., the sum of environmental, economic, and social capital) does not decrease.

The main approach towards sustainability...

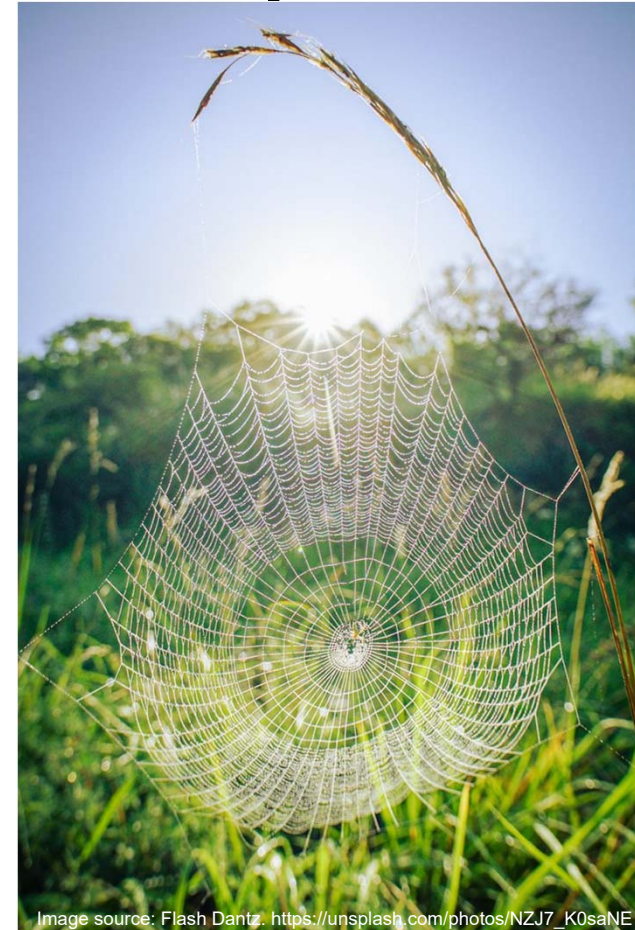
The approach towards sustainable development should encompass all aspects and take into consideration the fact that everything is connected:

❖ across **generations**

❖ across **countries**

❖ across **communities**

The principle is to look at everything as a part of the whole!



What is different about sustainable development?



Development is essential, but it must be a different **'quality' of development**, organized differently - one that takes environment into account.

Image Source: Nathan Dumlao. https://unsplash.com/photos/4_mJ1TbMK8A

III. Circularity Economy

Definitions, Concepts, and links with sustainability

Definition of Circular Economy (CE)

There is no universally accepted definition of Circular Economy.

The ambiguity of SD can be extended to the concept of CE.

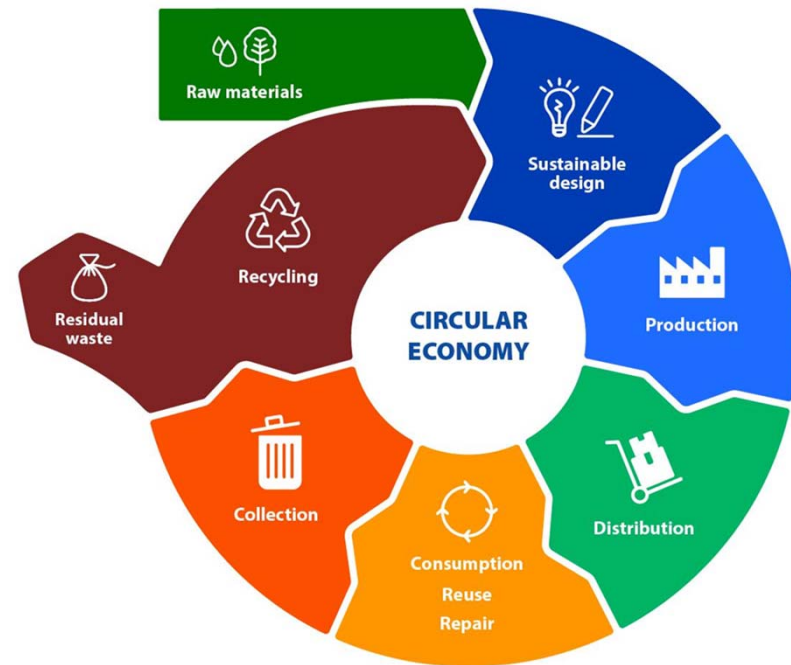


Image source:
<https://www.europarl.europa.eu/news/en/headlines/economy/20151201STO05603/circular-economy-definition-importance-and-benefits>

Definition of Circular Economy

“a generic term for reducing, reusing and recycling activities conducted in the process of production, circulation, and consumption”

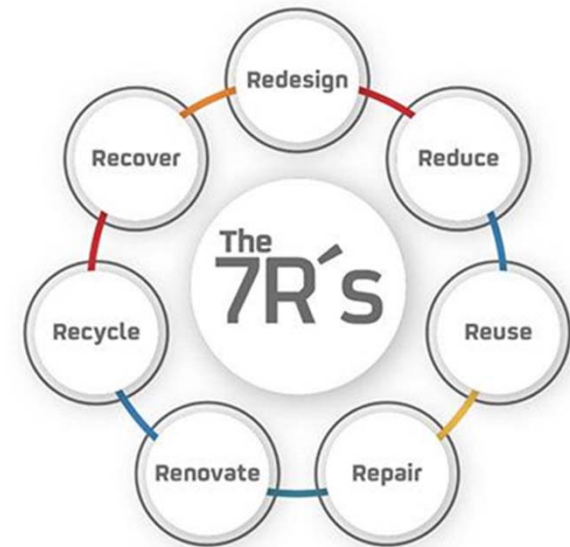
(The Standing Committee of the National People's Congress, China 2008, p. 1)

“A circular economy aims to maintain the value of products, materials and resources for as long as possible by returning them into the product cycle at the end of their use, while minimising the generation of waste”

(EC, 2015, p. 2).

What are the principles of the circular economy?

1. **Redesign:** Thinking and designing products so that their manufacturing process consumes fewer raw materials, extends their lifecycle, and generates less waste (or at least waste that is easier to recycle). This increases environmental protection.
2. **Reduce:** Change our consumption habits towards a more sustainable model. If we reduce consumption, we avoid the generation of waste, the use of raw materials, and therefore reduce the impact on the environment.
3. **Reuse:** Reusing or repurposing products to extend their lifecycle.
4. **Repair:** Until now, when a product broke down, we tended to replace it. However, repairing it is not only cheaper, but also avoids the use of new raw materials, saves energy, and does not generate environmental waste.
5. **Renovate:** Update old objects so that they can be reused as vintage, e.g. furniture.
6. **Recycle:** Promote best practices in waste management and use what you can as raw material to manufacture new products.
7. **Recover:** Give new uses to products that are going to be discarded, for example, using plastic bottles to create watering systems, flower pots, or bird feeders



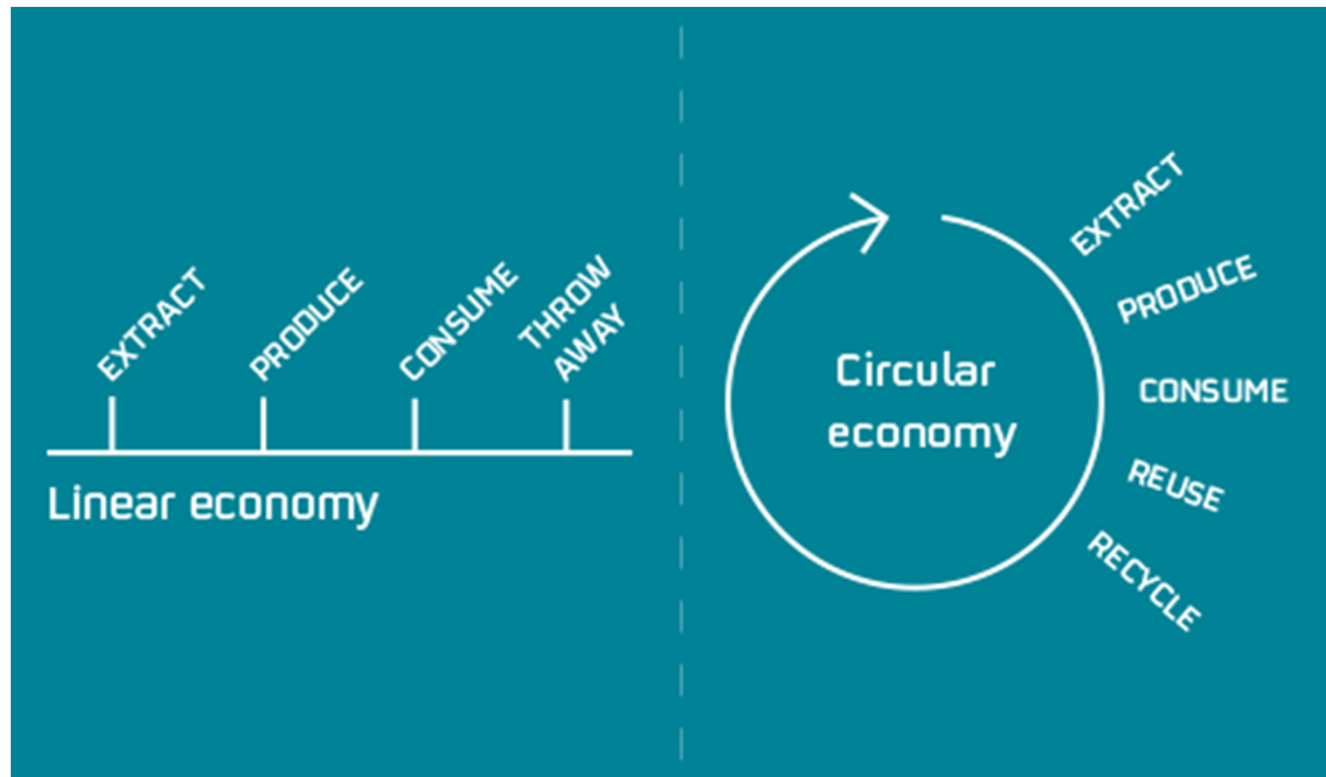
Source: Repsol Company, available at:
<https://www.repsol.com/en/sustainability/circular-economy/index.cshhtml>

Linear Economy vs Circular Economy

<i>Circular economy</i>		Strategies	
Smarter product use and manufacture	R0 Refuse	Make product redundant by abandoning its function or by offering the same function with a radically different product	
	R1 Rethink	Make product use more intensive (e.g. by sharing product)	
	R2 Reduce	Increase efficiency in product manufacture or use by consuming fewer natural resources and materials	
Extend lifespan of product and its parts	R3 Reuse	Reuse by another consumer of discarded product which is still in good condition and fulfils its original function	
	R4 Repair	Repair and maintenance of defective product so it can be used with its original function	
	R5 Refurbish	Restore an old product and bring it up to date	
	R6 Remanufacture	Use parts of discarded product in a new product with the same function	
Useful application of materials	R7 Repurpose	Use discarded product or its parts in a new product with a different function	
	R8 Recycle	Process materials to obtain the same (high grade) or lower (low grade) quality	
	R9 Recover	Incineration of material with energy recovery	

(Potting et al., 2017)

Linear Economy vs Circular Economy



Source: Repsol Company, available at: <https://www.repsol.com/en/sustainability/circular-economy/index.cshtml>

Circularity and Sustainability

The ultimate aim of CE is to accomplish **sustainable development**

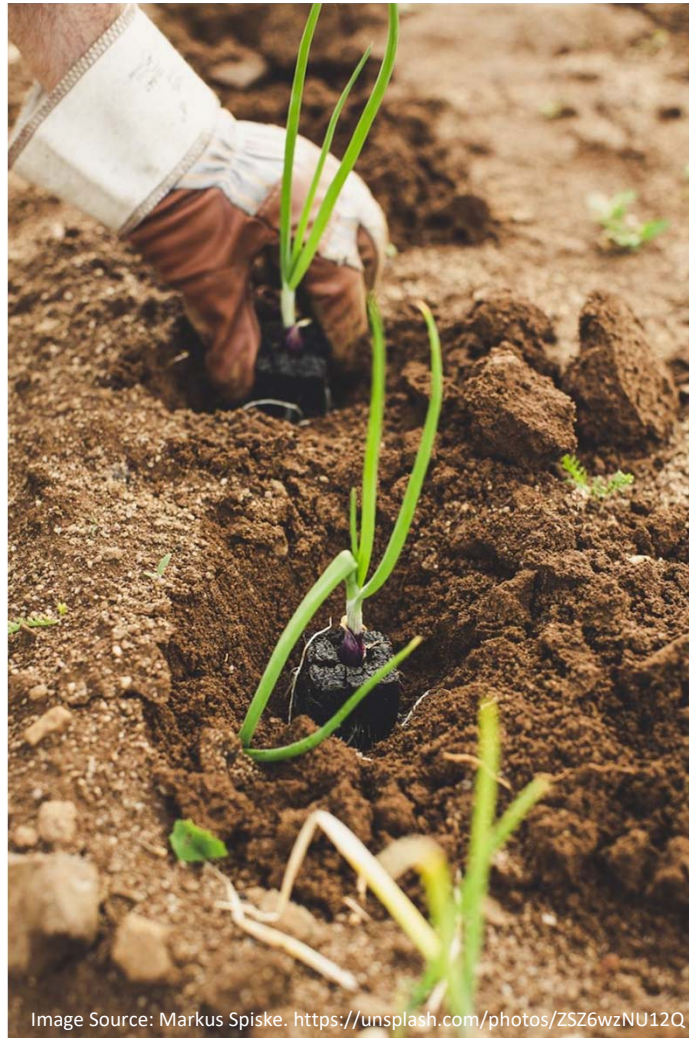


Image Source: Markus Spiske. <https://unsplash.com/photos/ZSZ6wzNU12Q>

Creating an environmental quality, economic prosperity, social equity

to the benefit of current and future generations”

(Kirchherr, Reike, and Hekkert 2017)

Circularity and Sustainability

CE practices do not always result in sustainable impacts, potentially leading to **sustainability trade-offs and rebound effects**

The Rebound Effect... by Garfield



Harald Throne-Holst

SIFO

African Circular Economy Alliance

The mission of Africa's transition to a CE that delivers economic growth, jobs, and positive environmental outcomes. Action Agenda:

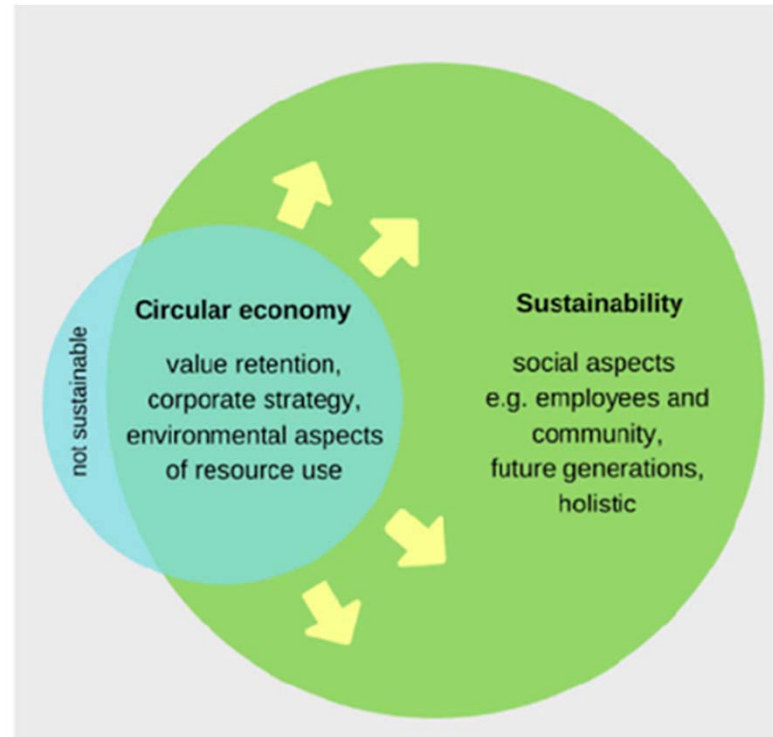
- Better Understand Hotspots of **Food Loss** and **Waste**
- Set Up **Effective Collection System**
- Strategically Plan and Install Sorting, Pre-Processing and **Recycling** Operations
- Incentivize and Support Product Design for Reuse and Recycling of **Plastics**
- Encourage the Market to Use Less **Clothing**, and for Longer
- Make the **Recycled Fibres** Market Competitive



Source: <https://pacecircular.org/african-circular-economy-alliance>

Circularity and Sustainability

- CE is **most often** associated with recycling and reuse, ignoring sustainability trade-off.



Source: Walker et al., 2021

Circularity and Sustainable Development Goals (SDGs)

CE address the challenges to **work towards the Sustainable Development Goals** set out in the 2030 Agenda and the 5 P (HDR, 2015).



Source: Human Development Report (2015)

http://hdr.undp.org/sites/default/files/2015_human_development_report_0.pdf

Circularity and Sustainability

- No commonly accepted and **standardized** approach to assess CE
- Need of **benchmark** for CE assessment
- Limited societal **awareness** and understanding of CE



Source: Walker et al., 2021, Opferkuch et al, 2021



Activity 1 - Summary

Name of Activity	Setting	Aim	Time (h)
A1. Connecting your daily life with SDGs (Part I)	Individual Online and Classroom	This activity aims to connect the sustainability dimensions and the SDGs with your daily activities/behaviors.	4



Activity 1 - Instructions

Note: This activity consists of 2 parts and each part should be done in 1 week.

Part I

Step 1- Choose one example of an activity or behavior from your daily life (e.g., cooking, eating, cleaning, exercising, working from home, household activities, taking care of your pet, and other household activities, or even an artwork creating by you or by others).

Step 2- Provide an original photo (taken by you) of your example which demonstrates the selected activity/behavior.

Step 3- Write a description of your example - between 150 and 200 words – and explain which sustainability dimension(s) (environmental/social/ economic) is/are most connected to your selected example. Justify the reasons (You may select more than one dimension)

Step 4- Share your selected example (the original photo and the description) in the Forum/Class (If you share it in the Forum, note that the maximum size for uploading your image is 250MB).

Further reading

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Module 1 - Lesson 1 - Topic 1

Material Development

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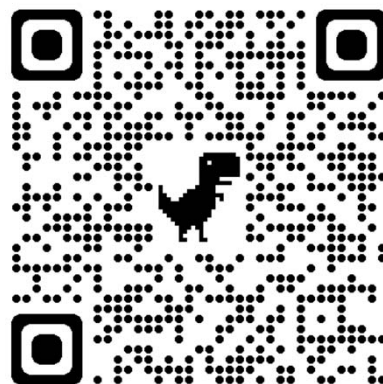
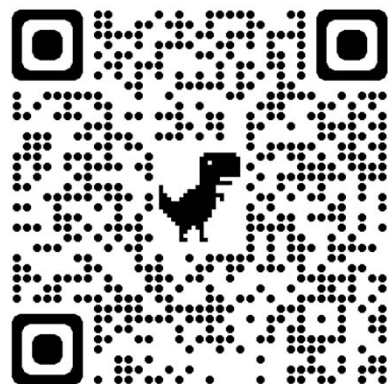
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