
Climate KIC
Academy
Masterclass
Circular Economy
8th April 2025 – Emily Amann
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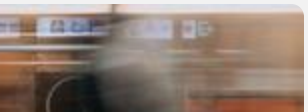

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Content

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- Circular Economy & Entrepreneurship
- Q&A

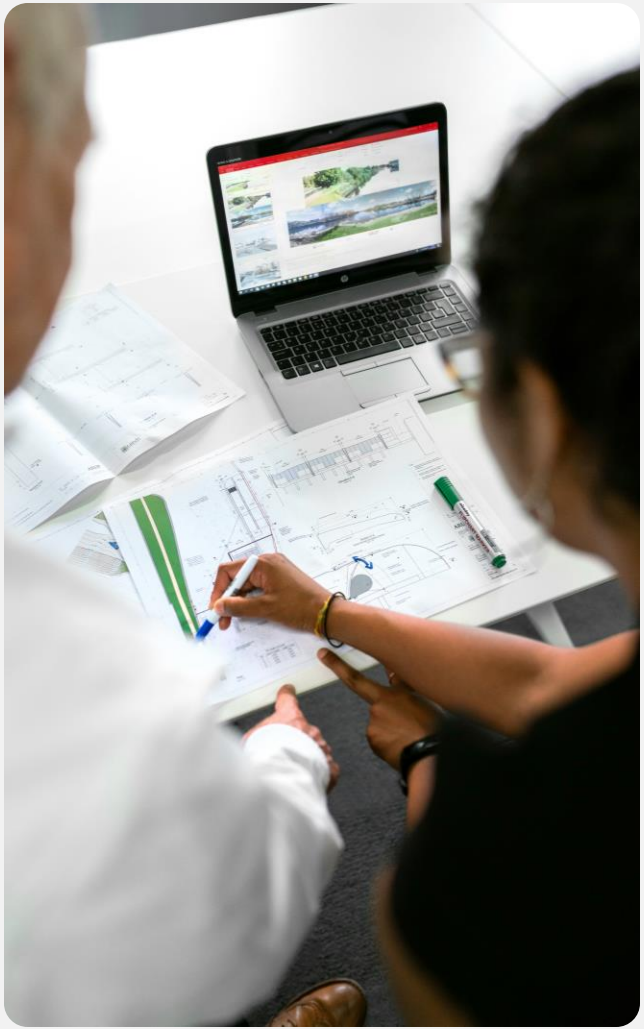
Welcome & Recap

Climate KIC Academy

WELCOME

Emily Amann – Circular Economy Entrepreneurship Lead

- Background in Economics, International Development and Circular Economy studies
- Programme Manager, Business Advisor, Mentor
- Circularity Mentor for over 200 participants from CE Univ. Berkeley diploma studies
- CE Capacity Building Lead for Bengaluru and Nairobi Circular Economy Innovation Cluster Programme
- Deep Demonstration Circular Slovenia
- Based in Valencia, Spain



Learning Objectives - Agenda

- Learn the basic principles of circular fundamentals & regenerative economy
- Understand the current state of the Circular Economy globally and locally, important actors and resources
- Learn circular economy business strategies and the Circular Canvas tool

Circular Economy Fundamentals

Let’s warm up:

Type in the chat:

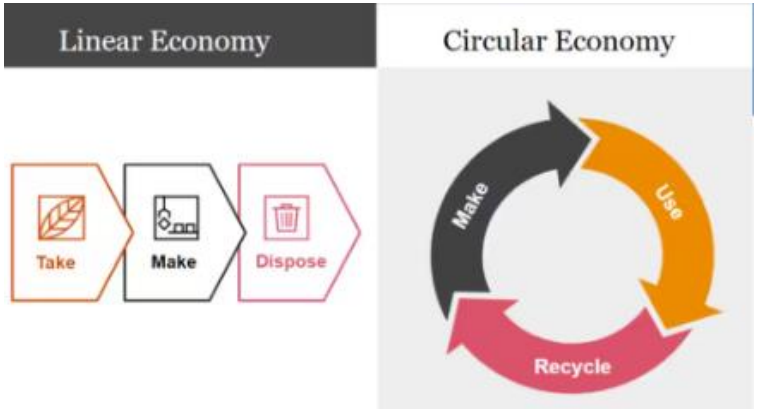
1. What comes to your mind when you think about Circular Economy?

2. Are Circularity and sustainability the same? Yes/No?


Explaining the Circular Economy and How Society Can Re-think Progress

CE Definitions

FUNDAMENTALS AND PRINCIPLES



Resources, Conservation & Recycling 127 (2017) 221–232

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journal homepage: www.elsevier.com/locate/resconrec

Review

Conceptualizing the circular economy: An analysis of 114 definitions

Julian Kirchherr*, Denise Reike, Marko Hekkert

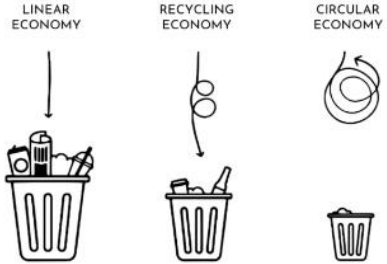
Innovation Studies Group, Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands

ARTICLE INFO

Keywords:
Circular economy
4R framework
Sustainable development
Definitions
Content analysis

ABSTRACT

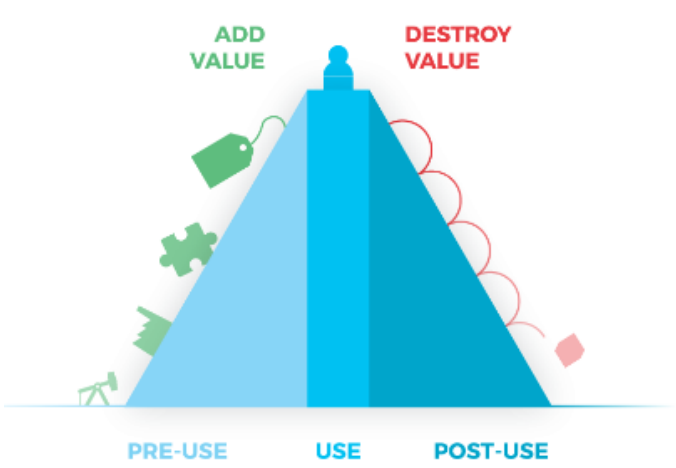
The circular economy concept has gained momentum both among scholars and practitioners. However, critics claim that it means many different things to different people. This paper provides further evidence for these critics. The aim of this paper is to create transparency regarding the current understandings of the circular economy concept. For this purpose, we have gathered 114 circular economy definitions which were coded on 17 dimensions. Our findings indicate that the circular economy is most frequently depicted as a combination of reduce, reuse and recycle activities, whereas it is oftentimes not highlighted that CE necessitates a systemic shift. ...ns show few explicit linkages of the circular economy concept to sustainable ... the circular economy is considered to be economic prosperity, followed by ...t on social equity and future generations is barely mentioned. Furthermore, ...umers are frequently outlined as enablers of the circular economy. We critically ...omy conceptualizations throughout this paper. Overall, we hope to contribute ...ence of the circular economy concept; we presume that significantly varying ... eventually result in the collapse of the concept.

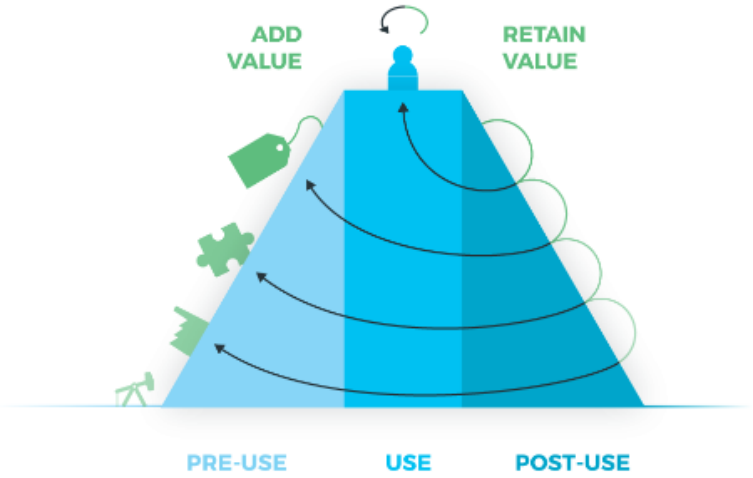


Sources:
https://www.sciencedirect.com/science/article/pii/S0921344917302835
https://www.pwc.com/gr/en/advisory/risk-assurance/sustainability-climate-change/circular-economy-model.html

How do we create value in our Economy?

FUNDAMENTALS AND PRINCIPLES





Source: https://www.circle-economy.com/news/master-circular-business-with-the-value-hill

3 Fundamental Principles of a Circular Economy

FUNDAMENTALS AND PRINCIPLES

It is underpinned by a **transition to renewable energy and materials.** A circular economy **decouples economic activity from the consumption of finite resources.**

It is a resilient system, good for business, people and the environment.

The circular economy is a framework of **systemic solutions** that addresses global challenges such as climate change, biodiversity loss, waste and pollution.

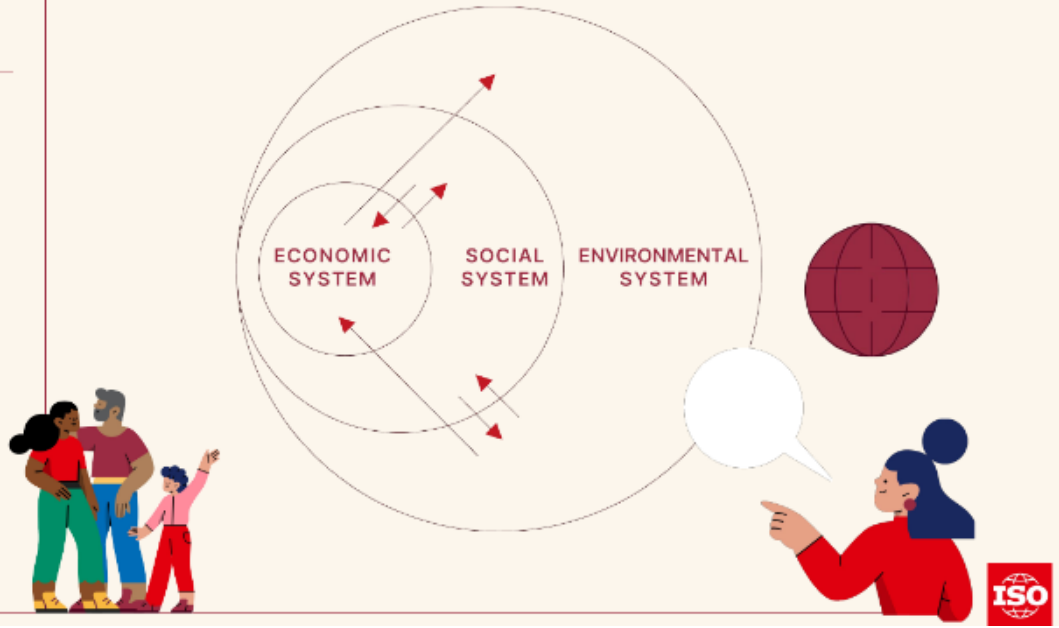
The first international definition

ISO 59004

Circular economy

Economic system that uses a systemic approach to maintain a circular flow of resources, by recovering, retaining or adding to their value, while contributing to sustainable development.

- ☑ Resources can be considered concerning both stocks and flows.
- ☑ The inflow of virgin resources is kept as low as possible, and the circular flow of resources is kept as closed as possible to minimize waste, losses and release from the economic system



A new framework to drive circularity globally (2024)

FUNDAMENTALS AND PRINCIPLES

Answers for the circular economy transition

ISO 59000 family of standards

A common understanding:
Definitions, principles, actions, business models, value networks, measures, assessment, ..., all what is needed to act now!

ISO 59004

Circular economy
Vocabulary, principles and guidance for implementation

ISO 59010

Circular economy
Guidance on the transition of business models and value networks

ISO 59020

Circular economy
Measuring and assessing circularity performance

ISO 59040

Circular economy
Product Circularity Data Sheet

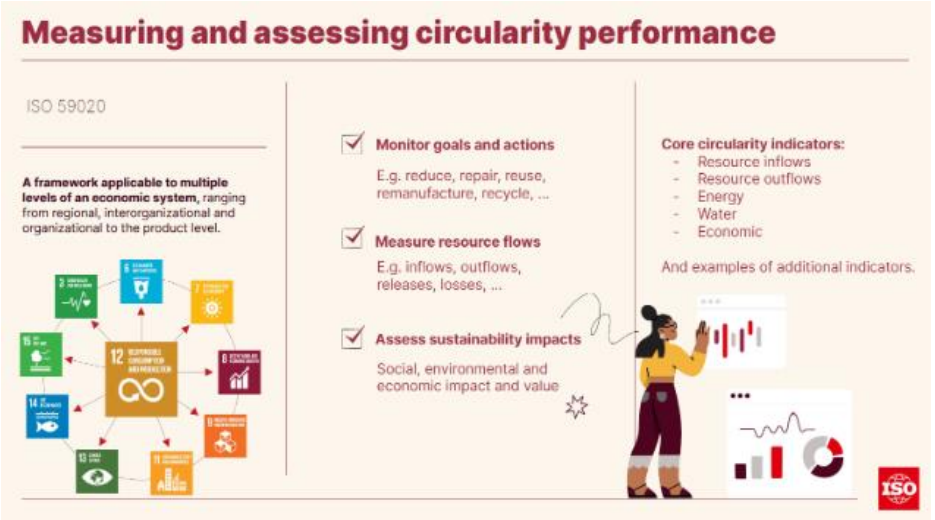
ISO 59014

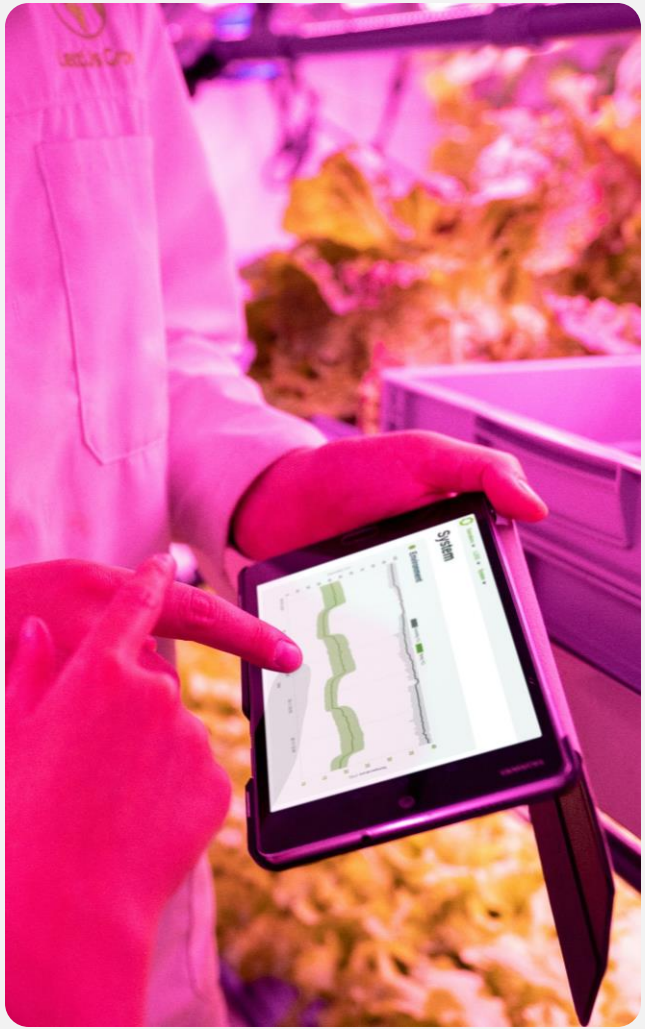
Environmental management and circular economy
Sustainability and traceability of secondary materials recovery – Principles, requirements and guidance

ISO

A new global framework to drive circularity globally

FUNDAMENTALS AND PRINCIPLES





Quiz:

Type in the chat:

- What do you think, how circular is our global economy today in %?

The circular economy has reached megatrend status.

The volume of discussions, debates and articles on the concept has almost tripled over the past five years.

3X

But global circularity is still in decline.

The share of secondary materials consumed by the global economy has decreased from 9.1% in 2018 to 7.2% in 2023-a 21% drop over the course of five years.

-21%

And consumption continues to accelerate.

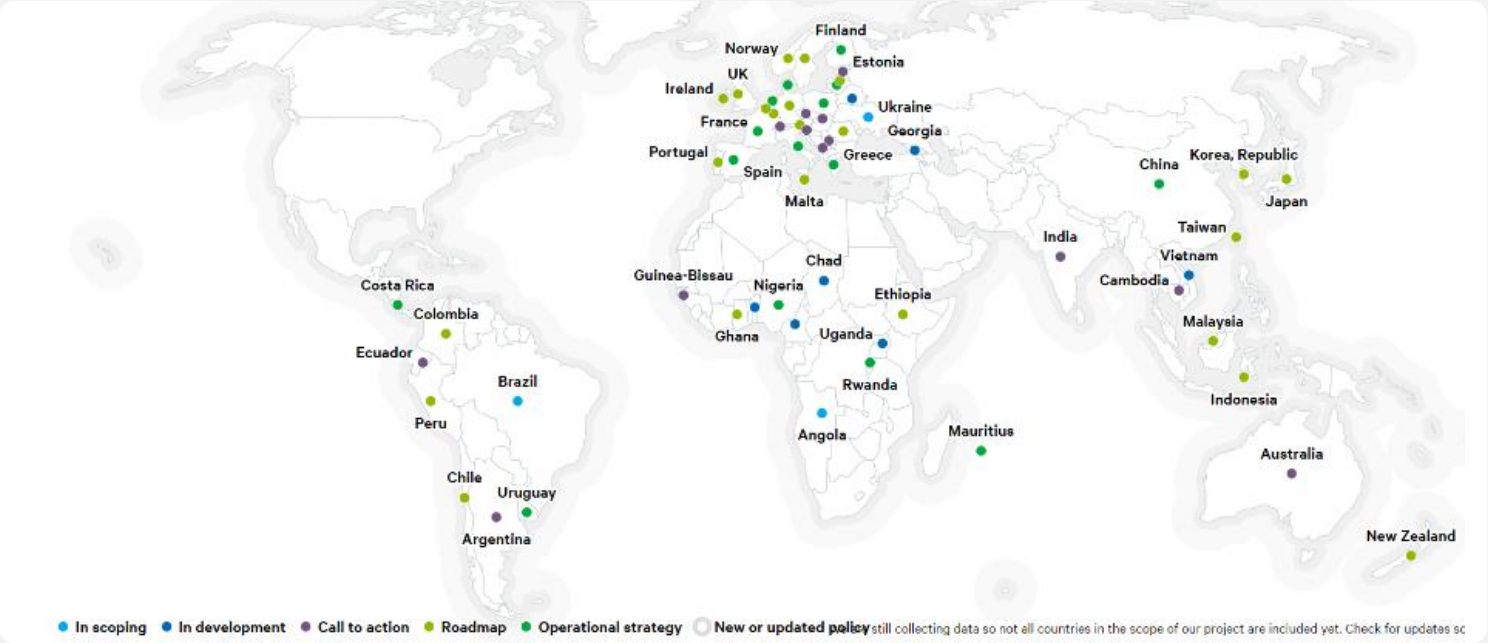
In the same period, we have consumed over 500 gigatonne. That's 28% of all the materials humanity has consumed since 1900.

28%

Is Circularity and Sustainability the Same?

Circularity Global Gap Report 2024

Online Tool to access and compare national CE Policies



https://circulareconomy.earth/?policy=cep

ELLEN MACARTHUR FOUNDATION

WORLD CIRCULAR ECONOMY FORUM

CIRCLE ECONOMY

UNIDO

wbcsd

PACE
Platform for Accelerating the Circular Economy

CIRCULAR ECONOMY CLUB

WORLD RESOURCES INSTITUTE

CHATHAM HOUSE
The Royal Institute of International Affairs

Main actors working on CE Globally

AFRICAN CIRCULAR ECONOMY ALLIANCE

COALICIÓN DE ECONOMÍA CIRCULAR
América Latina y el Caribe

ACEA
ASIA CIRCULAR ECONOMY ASSOCIATION

Main actors working on CE at a Regional Level

CIRCULAR ECONOMY BARRIERS

Cultural

- Cultural diversity
- Unawareness nesources
- Current lifestyle

Economic

- Economic viability
- Global supply chain
- Lack public expenditure
- Dependance private capital

Information

- Data availability
- Deficiency of information

Regulatory

- Absence of multilevel supportive framework

Political

- Neoliberalism
- Clashing priorities
- Lack of combined policy-making

Institutional

- Fragmented government
- Lack of cross-sector alliance
- Lack of institutional capability
- Lack of trust in policymakers

Technological

- Technical limitations
- Lack of operational conditions
- Current linear resources flows

Environmental

- Pollution of environment
- Long-period to renew ecosystems
- Depraved urban resources

Circular Economy Entrepreneurship

Are these examples circular? Yes or No?

Write in the chat

Beer made out of old bread

Are these examples circular? Yes or No?

Write in the chat

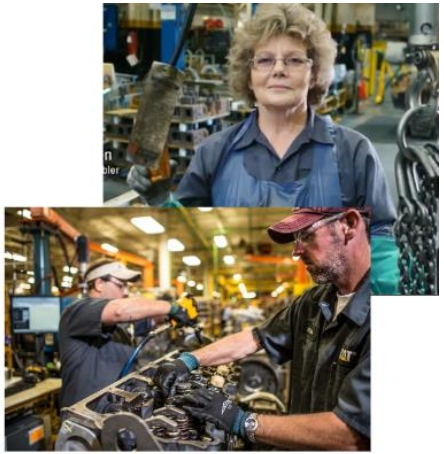
Shoes made out of a % of recycled plastic bottles

Are these examples circular? Yes or No?

Write in the chat

Repaired or Refurb electronics or remanufactured motors

https://www.fairphone.com/en/

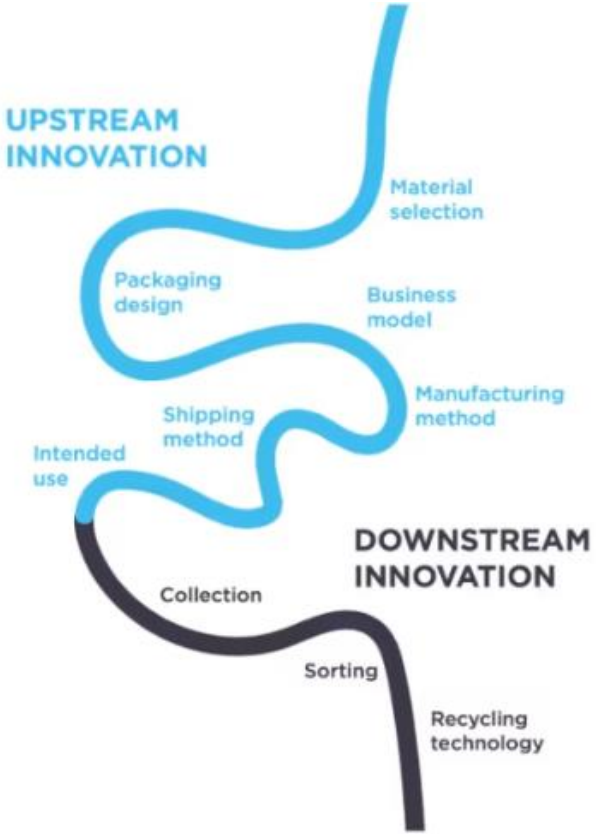


https://www.caterpillar.com/en/company/sustainability/remanufacturing.html

Are these examples circular? Yes or No?

Write in the chat

Bricks made out of plastic



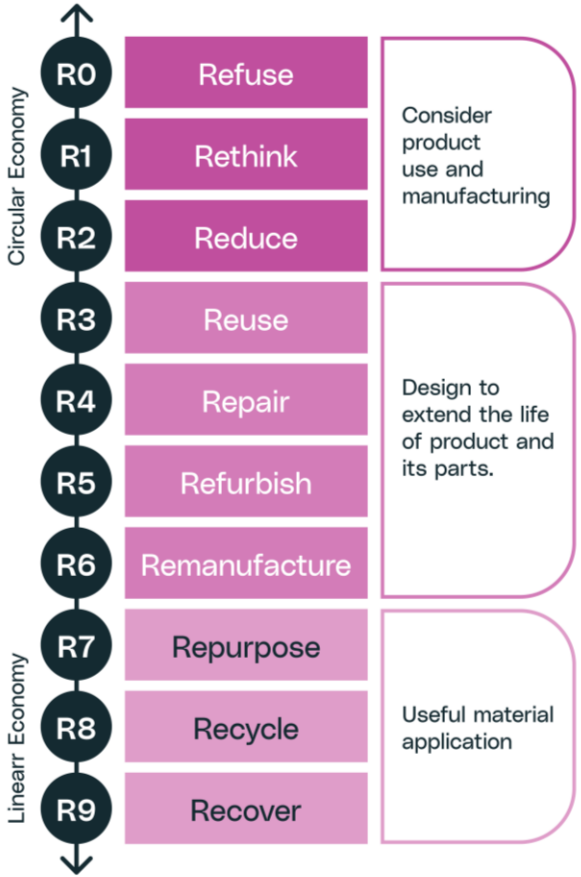
Design choices: Upstream vs downstream innovation

CE ENTREPRENEURSHIP

Why focus one the circural design of a product/service?

CE ENTREPRENEURSHIP

Product design determines up to 80% of a product's life cycle environmental impact!!!



9R Strategies

CE ENTREPRENEURSHIP

10 R's and The Circular Economy Loop Dimensions

Remember the fundamental principles and hierarchy of circular strategies discussed in section 1 in the Butterfly Diagram (technical and biological cycle). To apply these to the creation of circular business models we will dive deeper:

The 10 R's of the circular economy provide a framework for businesses and individuals to embrace sustainable practices and contribute to a more circular and resource-efficient world. Each "R" represents a key principle that guides the way resources are managed, from production to consumption and beyond.

Success Stories

Sparxell | The Next Big Thing | Circular Economy

Sparxell

United Kingdom – 2022 – Global Grand Finalist

Sparxell has developed 100% natural, biodegradable pigments derived from plant-based cellulose

Their technology is chemical-free, and replicates vibrant, fade resistant colours found in nature.

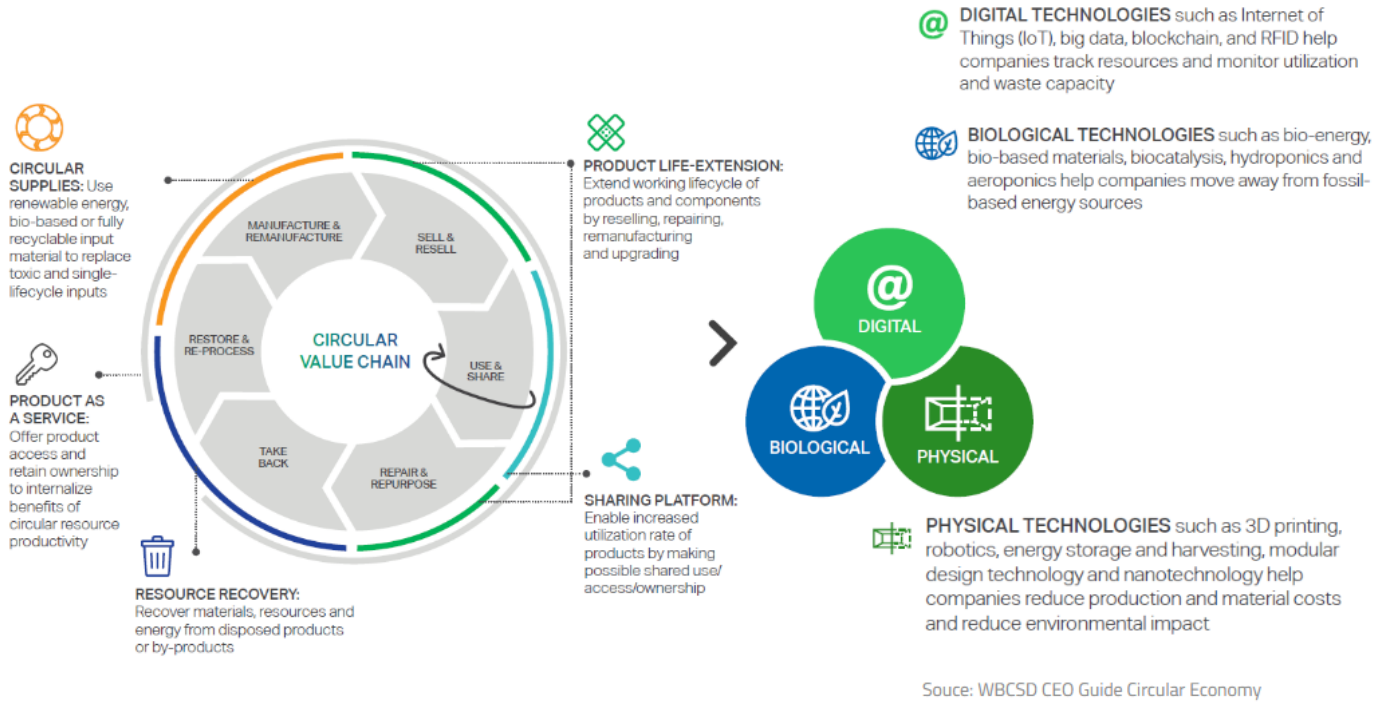
Sparxell's pigments have applications across cosmetics, fashion, packaging and food industries. By replacing harmful synthetic pigments, they reduce environmental pollution, while ensuring minimal ecological impact.

To date, Sparxell has raised a total of USD $3.2 million in investment from Joyance Partners and L'Oreal Group.

Find out more at www.sparxell.com.

A new global framework to drive circularity globally

CE ENTREPRENEURSHIP



Souce: WBCSD CEO Guide Circular Economy

Fibe

United Kingdom – 2022 – European Regional Finalist

Fibe creates sustainable textile fibres derived from potato stems and potato harvest waste.

They have developed a non-toxic process to transform agricultural byproducts into durable, soft natural fibres, offering an eco-friendly alternative to traditional textiles such as cotton and linen.

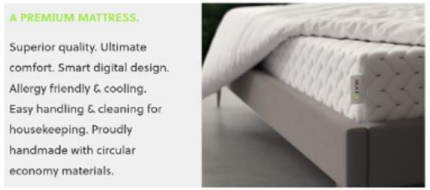
Fibe is actively developing supply chains, logistics and harvesting techniques to valorise potato waste, aiming to integrate seamlessly into existing textile manufacturing processes.

To date, Fibe has raised USD $1.3 million for their venture, supported by Patagonia's Tin Shed Ventures.

Find out more at www.fibe.uk.

MATR®

ClimateLaunchpad
2021 Global Winner



Product as a Service – PaaS

CE ENTREPRENEURSHIP

Pay per service unit Product renting

Benefits:

- Broader customer base
- Cheaper raw materials
- Recurring revenue
- Strategic cost constraints: easier asset control, refurbishment, remanufacturing, recycling
- Stronger and longer lasting relationship

Challenges:

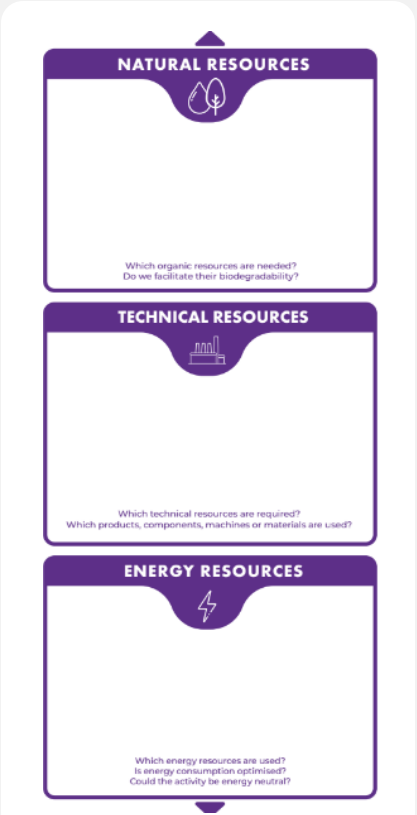
- Potentially large initial investment to keep ownership of products.
- Customers desire a convenient service with minimum hassle and simple payment terms.

Tool: Circular Business Model Canvas

CE ENTREPRENEURSHIP

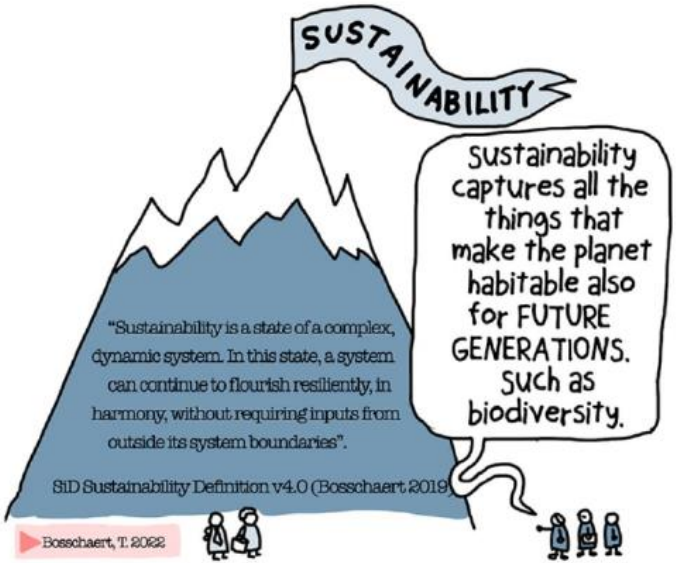
A circular business model creates, delivers, and captures value by closing resource usage loops:

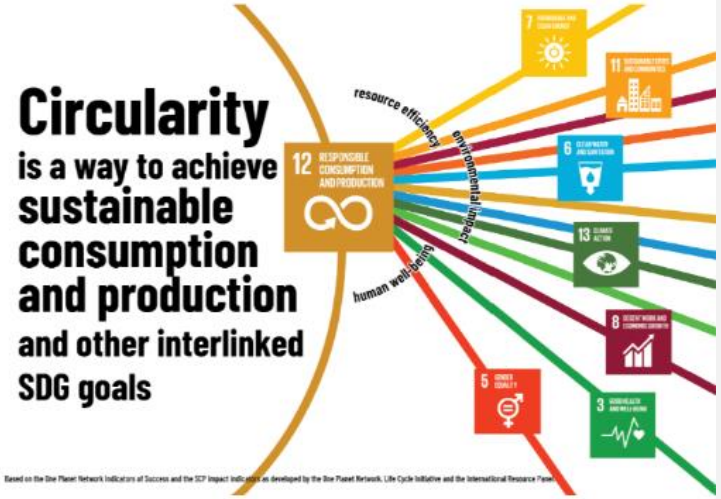
- Designing out waste and pollution
- Keeping products and materials in use at the highest value for the longest possible and
- Regenerating natural systems.

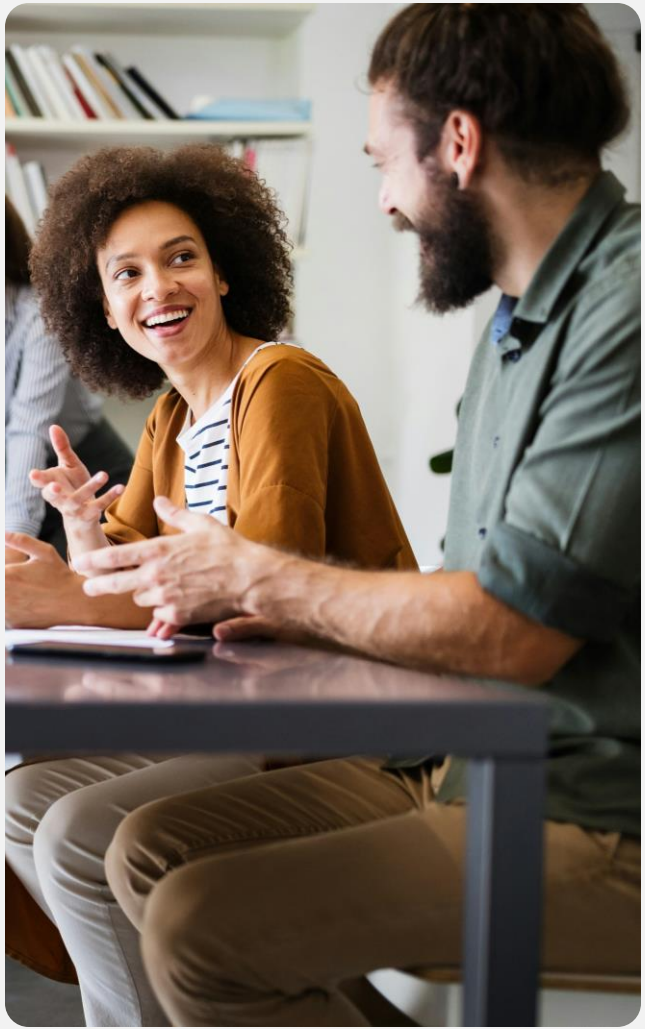

NATURAL RESOURCES
Which organic resources are needed?
Do we facilitate their biodegradability?
TECHNICAL RESOURCES
Which technical resources are required?
Which products, components, machines or materials are used?
ENERGY RESOURCES
Which energy resources are used?
Is energy consumption optimised?
Could the activity be energy neutral?


NEXT USE
What is the end-of-use scenario for the product/service and each of its components/packaging? Can it meet new needs at the end of the use cycle?
Can the product or its components be reused? Repaired? Recycled?
Can the user or partners be involved or rewarded for achieving the zero waste objective?

Is Circularity and Sustainability the same?







Discussion:

- Does your business model – product or service have circular elements?
- Opportunities – challenges to become circular?


Q&A

Climate KIC Academy

From ideas to impact.

Supported by

Irish Aid
An Roinn Gnóthaí Eachtracha
Department of Foreign Affairs

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