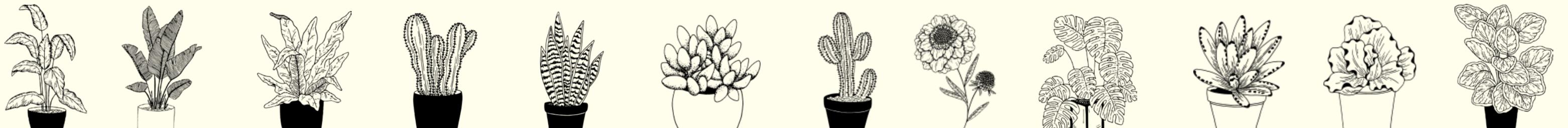




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Learning about the circular economy

U-ECO PROJECT



Introduction

‘Take-make-dispose’: this is the motto, and pattern, of our current economic model based on a linear economy.

However, this model is **unsustainable** in its core, and the planet is now reaching its tipping point, as it can no longer sustain a linear production model.

Human actions have indeed progressively, and highly, **pressured** and **stressed** natural systems.

The linear production model is causing significant negative environmental and economic effects.

There is an **urge** to **modify** our extraction and production systems, and lifestyles.



And, it is in this framework that the concept of the circular economy (CE) was developed.

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

(European Parliament, 2018)

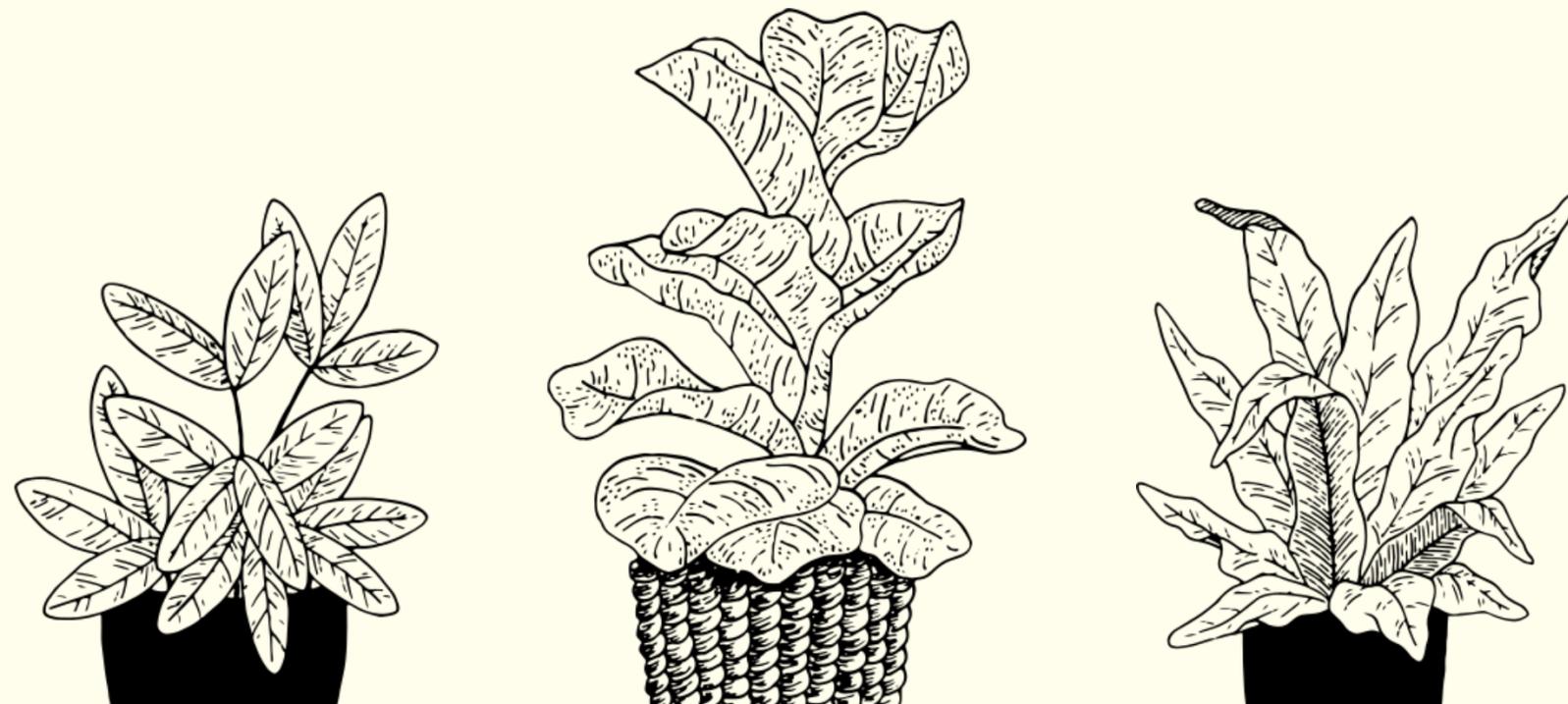
Entrepreneurship plays a **significant role** in our societies as one of the “major drivers of economic growth, of breakthrough innovations and job creation” (Heshmati, 2015).

Entrepreneurship has a considerable **potential** within a circular economy, as it can make a positive use of and contribute to its implementation, with its great power to create and develop.



MODULE 1

A LINEAR ECONOMY SYSTEM



1.1 Basics of a linear economy

- An industrial mentality in which production and resources are considered to be **unlimited**, and economic benefits are placed above all other criteria.
- Current production method based on a linear economy → natural resources are used to **create** a product which satisfies a consumer's need and once that need is met, the consumer **disposes** of the product (Ellen MacArthur Foundation, 2013; Sariatli 2017).



Features of the economic model:

- Heavily reliant on the non-realistic **abundance of natural resources** which are unevenly spread across the world (Ellen MacArthur Foundation, 2013);
- Large concentration of consumers in the **most developed regions** of the world (e.g. western societies), whose demands are being met by industrial nations who have the supply of cheap material resources and labour (Sariatli, 2017);
- A system that cuts on human labor and favours energy and raw materials → higher economic gains → but more **waste**: reuse and recycling are not contemplated (Ellen MacArthur Foundation, 2013).



So, what are the issues?

At the current rate of global growth, **neither industrial countries nor natural ecosystems will be able to provide the material and energy resources required to meet humanity's necessities** (Haas et al, 2015).



“The growth rate of demand is higher than the growth rate of supply.”

(Troester, 2012)

And, the system is subjected to high and unexpected **price volatilities** of natural resources and, consequently, products (Ellen MacArthur Foundation, 2013).



1.2 Negative impacts of a linear economy

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

Image source: Pikist



Image source: Canva

Unnecessary resource losses of the linear economic model (Ellen MacArthur Foundation, 2013):

- **“Waste in the production chain”**. The Sustainable Europe Research Institute (SERI) estimates that 21 billion tons of materials used in production do not get incorporated in the final product (ibid); E.g. food and fashion industries;
- **“End-of-life waste”**. “For most materials, rates of conventional recovery after the end of their (first) functional life are quite low compared with primary manufacturing rates” (ibid);
- **“Energy use”**. Elevated quantities of energy are employed in the linear production system: once a product/material is discarded, all the energy needed to create it gets lost (ibid);
- **“Erosion of ecosystem services”**. Humans are consuming much more natural capital than the Earth can generate. Ecosystem services provide “those benefits derived from ecosystems that support and enhance human wellbeing” (ibid).



Recap of Module 1

A Linear Economy System



Concept



Features



Issues

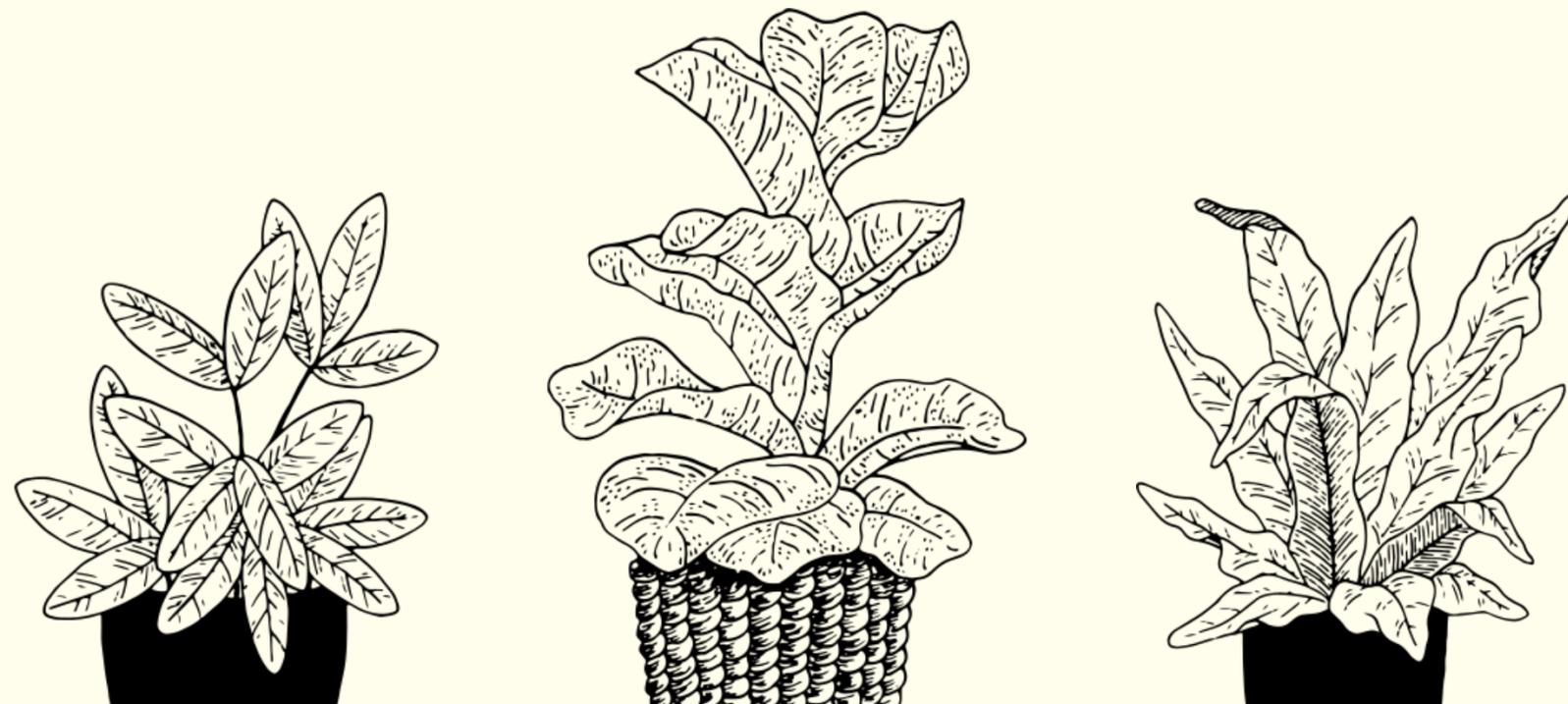


Negative impacts

Do you have questions so far?

MODULE 2

A CIRCULAR ECONOMY SYSTEM



Basics of a circular

economy

The circular economy concept cannot be traced or attributed to one specific author - it is fruit of multiple ideas and thoughts of different individuals.

These thoughts started to **emerge** already in **1700**, and progressively gained attention around the **1970s**, until its concretisation and labelling in current days (Ellen MacArthur Foundation, 2013; Cardoso, 2018).

The term “circular economy” was **first used** by **Pearce and Turner (1990)**.

What do you think a circular economy is exactly?



Let's see some definitions together

Stahel (2016)

“A ‘circular economy would turn goods that are at the end of their service life into resources for others, closing loops in industrial ecosystems and minimizing waste. It would change economic logic because it replaces production with sufficiency: reuse what you can, recycle what cannot be reused, repair what is broken, remanufacture what cannot be repaired.”

European Parliament (2018)

“A model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended.”

Ellen MacArthur Foundation (2013)

“An industrial economy that is restorative by intention; aims to rely on renewable energy; minimises, tracks, and eliminates the use of toxic chemicals; and eradicates waste through careful design.”

It can be **summarised** as:

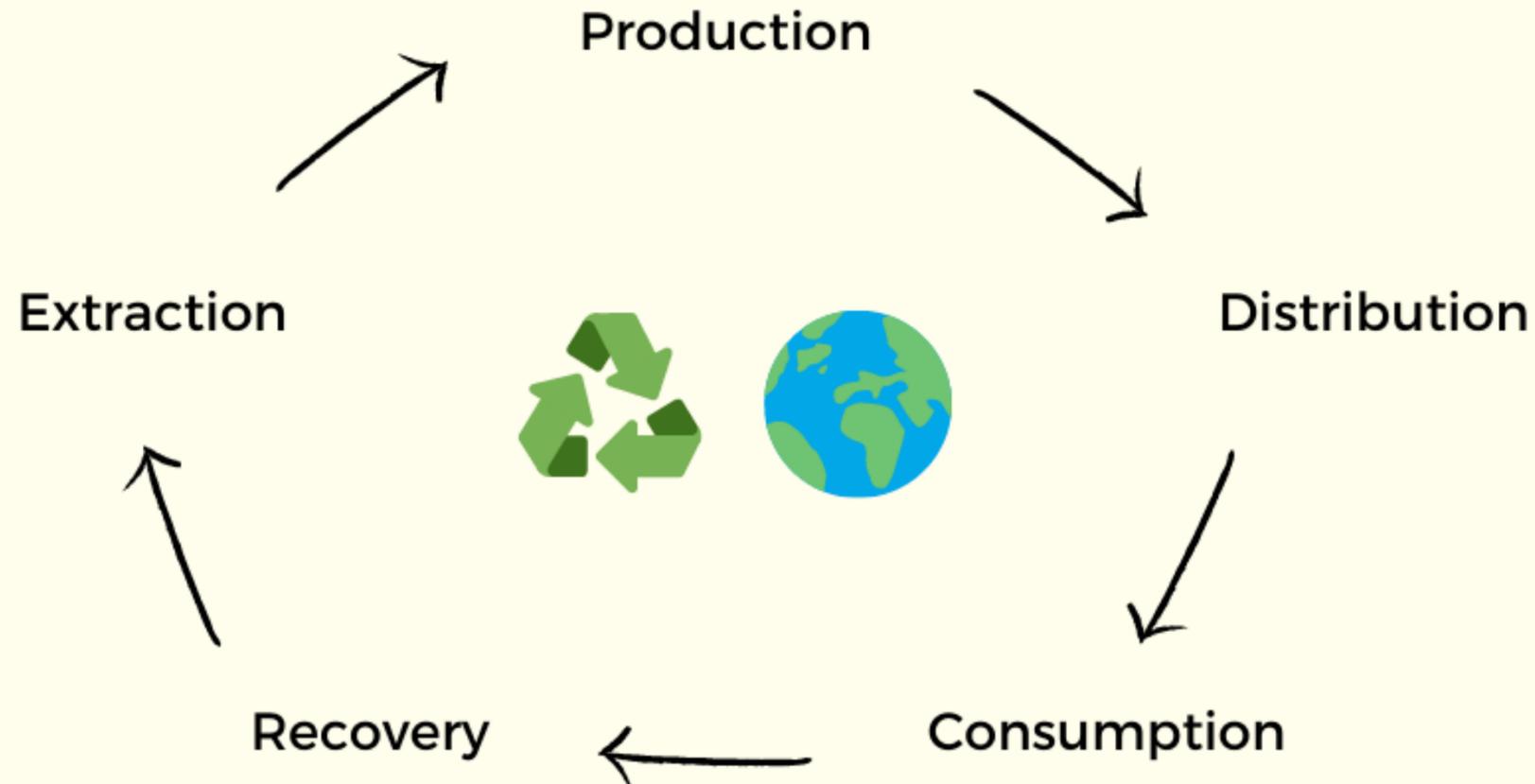
- An **industrial economy** that acts “by closing economic and ecological loops of resource flows” (Haas, Krausmann, Wiedenhofer and Heinz, 2015) through the entire **redesign** of a **whole system**,
- that aims to **minimise** environmental impacts and strives to **reduce** waste by **reusing, recycling** and **redesigning** products and materials.



A CE entails an **entire chain**: from **extraction** and **production**, to **consumption** and **end of life stage** of goods and services.



The objective of a circular economy **“is to maximize value at each point in a product’s life”** (Stahel, 2016).



What happens then at the end of a product's life in a CE?

A product will be either **reused** or a **new life** will be **given** to it.

“Circular-economy business models fall in two groups: those that foster reuse and extend service life through repair, remanufacture, upgrades and retrofits; and those that turn old goods into as-new resources by recycling the materials”.
Stahel (2016)

→ This requires **innovation**, coupled with **research**, on all levels, such as social, technological and commercial (ibid).

Digitalization is essential in a circular economy, allowing to diminish the use of materials and energy (Horbach, Rennings and Sommerfeld, 2015).



What are the concepts are the base of a CE?

According to the Ellen MacArthur Foundation (2013):

- “**Design out waste**”; “Waste does not exist when the **biological and technical components** (or ‘nutrients’) of a product are **designed** by intention to fit **within a biological or technical materials cycle**, designed for disassembly and refurbishment” (ibid). Note: when it comes to the biological nutrients, **their consumption cannot be faster than their regeneration** (Horbach, Rennings and Sommerfeld, 2015);
- “**Waste is food**”; “on the **biological nutrient side**, the ability to **reintroduce** products and materials back into the biosphere through non-toxic, restorative loops is at the heart of the idea. On the **technical nutrient side**, **improvements** in quality are also possible; this is called upcycling” (Ellen MacArthur Foundation, 2013);



- “Build resilience through diversity”; the whole system needs to be **versatile** and **adapt** to changes to build up resistance;
- “Rely on energy from renewable sources”;
- “Think in ‘systems’”; it entails a **holistic** approach to elements which “are considered in their **relationship** with their infrastructure, environment, and social contexts” (Ellen MacArthur Foundation, 2013).

Let’s not forget that a CE is fruit of a **multidisciplinary approach** and it involves different **disciplines**: architecture, engineering, ecology, design, IT etc.
(Prieto-Sandoval, Jaca and Ormazabal, 2018).





The CE is implemented on different **levels**:

- **Micro**;
- **Meso**;
- **Macro**.

Principles at the core of a CE:

- **The R framework**;
- **Sustainable design strategies (SDSs)**.

The R framework

R frameworks have been developed with the aim “**to achieve less resource and material consumption in product chains and make the economy more circular**” (Potting, Hekkert, Worrell and Hanemaaijer, 2017).

Different R frameworks exist: 3R, 4R, 6R, 9R.

9R framework → its practices range from the ones with **low** circularity to the ones with **high** circularity, as follows:

‘Recover, recycle, repurpose, remanufacture, refurbish, repair, reuse, reduce, rethink and refuse’ (Kirchherr, Reike and Hekkert, 2017; Potting, Hekkert, Worrell and Hanemaaijer, 2017).



Sustainable design strategies (SDSs)

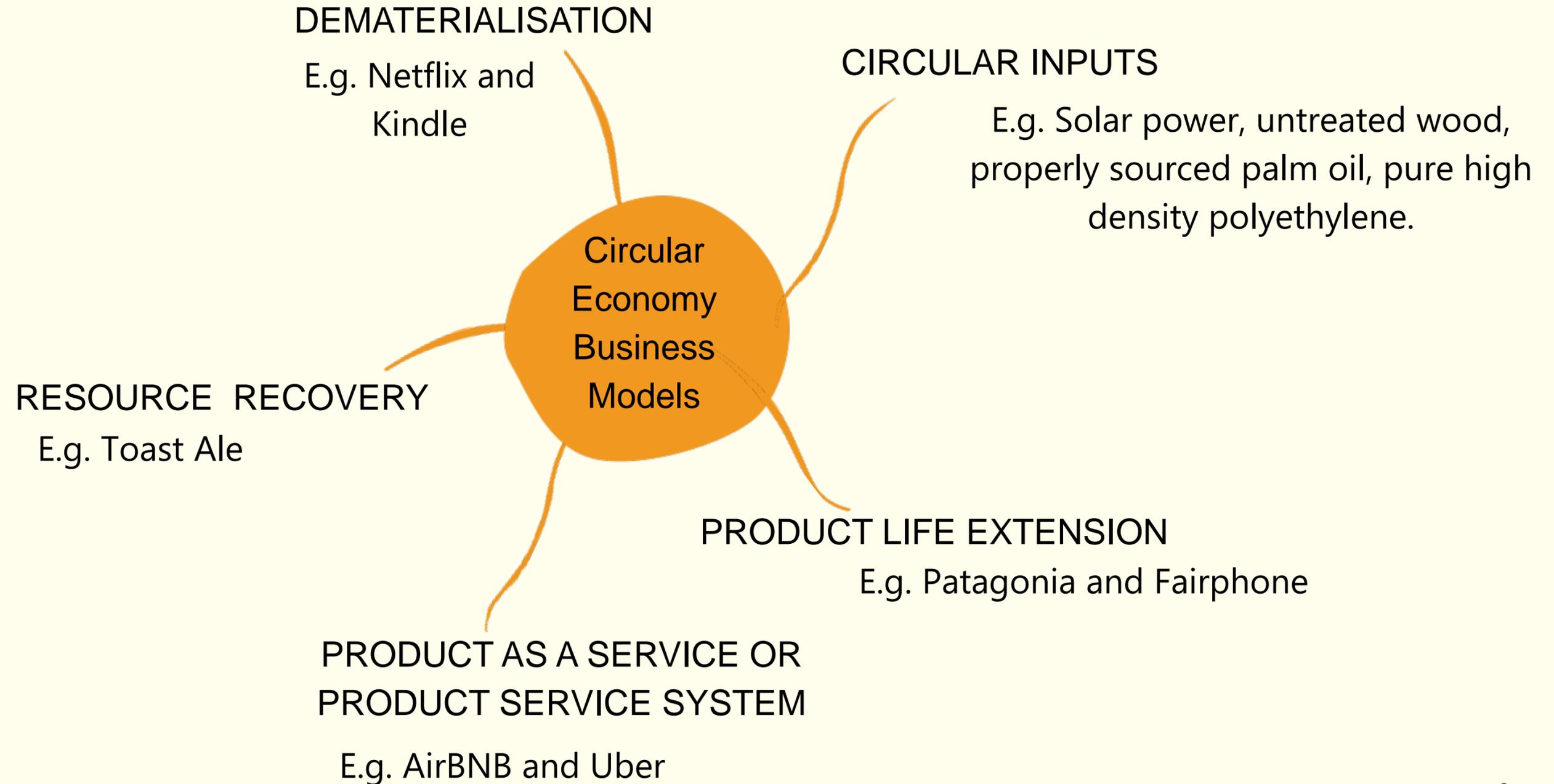
As instruments that “enable sustainable development challenges to be tackled in a coherent and dynamic way” (OECD, 2001).

Examples of SDSs:

- The **life cycle assessment (LCA)** of a product, “a technique for assessing the environmental aspects associated with a product over its life cycle” (Muralikrishna and Manickam, 2017);
- The practice of **eco-design** that “explores opportunities to reduce environmental impacts throughout entire product life cycles by improved product design (whether these products are goods, services, or processes)” (Andrae, Xia, Zhang and Tang, 2016).



Circular Economy Business Models



Recap of Module 2

A Circular Economy System



Definition



Concept



Principles

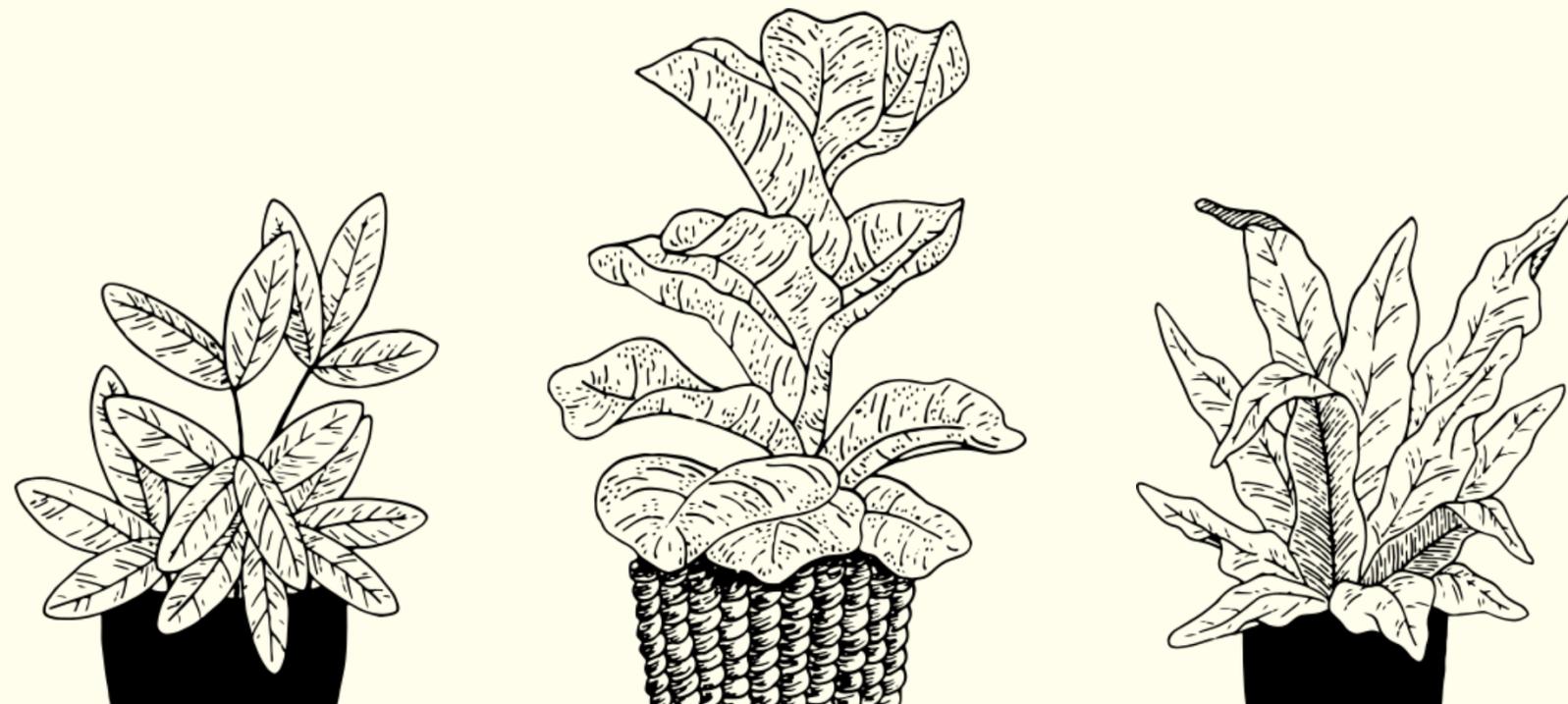


Business models

Do you have questions so far?

MODULE 3

WHY IMPLEMENTING A CIRCULAR ECONOMY?



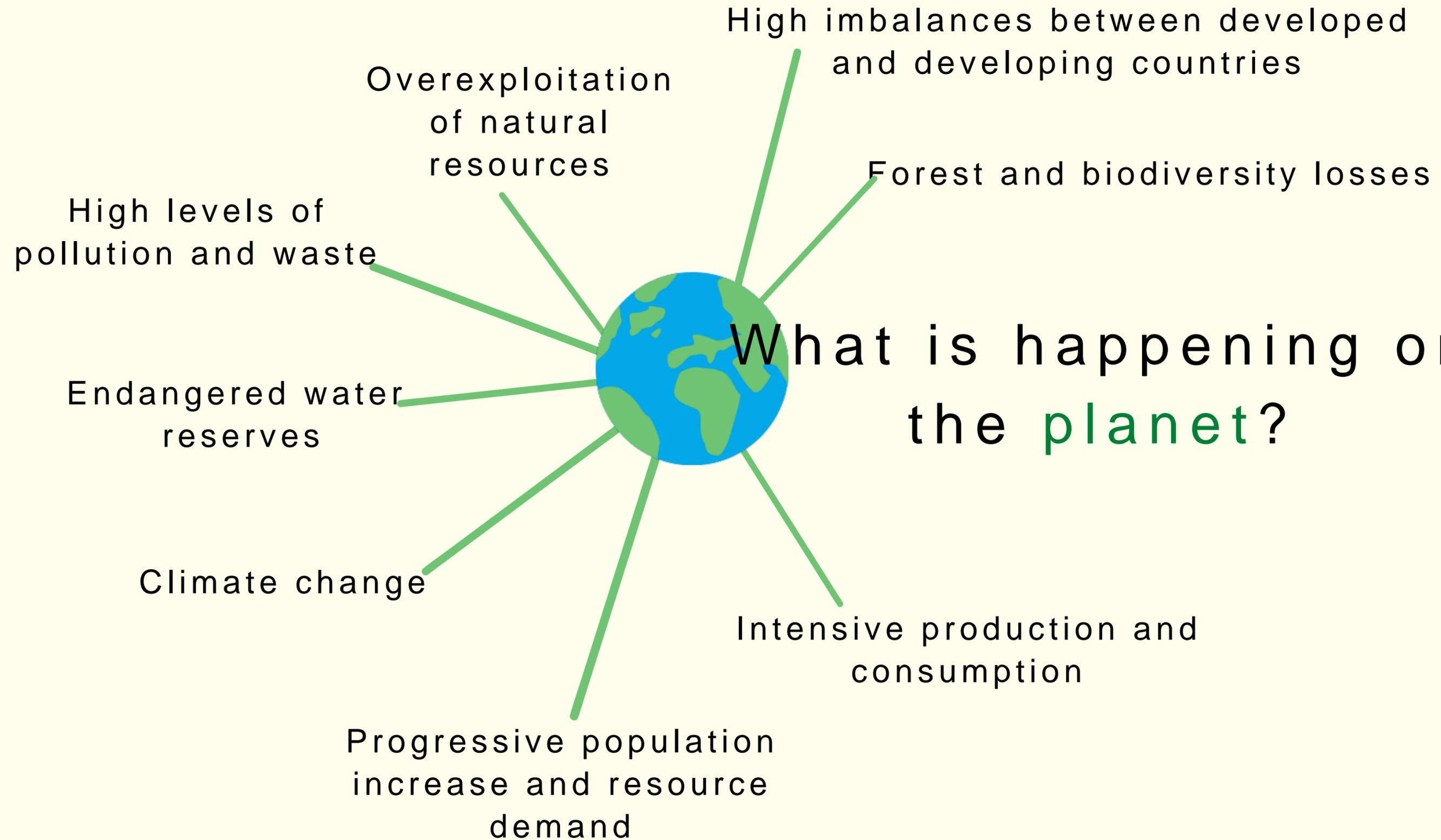
3.1 Why implementing a circular economy?

Because, simply, the Earth cannot keep up with our extraction, production and consumption rates.

Images' Source: Canva



What is happening on the planet?



“There is an urgent need for a new paradigm that integrates the continued development of human societies and the maintenance of the Earth system (ES) in a resilient and accommodating state.”

(Steffen et al., 2015)



So, what would a circular economy provide?

a “regenerative growth model that gives back to the planet more than it takes, advance towards keeping its resource consumption within planetary boundaries, and therefore strive to reduce its consumption footprint” (European Commission, 2020 a), without compromising economic development, but actually promoting and boosting it.

Natural resources are extremely valuable; not only in economic terms, but also in practical terms. They are at the core, and therefore allow, our daily survival.



A circular economy can help to achieve the following **UN sustainable development goals (SDGs)**:



3.2 Social, economic and environmental

A circular economy entails a **disruption** from the current economic model. Such transformation includes inevitable effects of different natures.

Economic impacts

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



It is expected that a circular economy will promote:

- **increased resource productivity**, namely “a measure of the total amount of materials directly used by an economy (measured as domestic material consumption (DMC)) in relation to GDP” (Glossary:Resource productivity, 20 16);
- **technological innovations** (The Circular Economy In Detail, n.d.);
- **new jobs creation** and the **re-introduction of old jobs** that had disappeared in recent times (Circular economy a source of job creation and re-creation, 20 18).

According to the European Commission (n.d.),

“**new jobs will be created in innovative design and business models, research, recycling, re-manufacturing and product development**”,

for a total of approximately **700,000 new jobs** (Cambridge Econometrics, Directorate-General for Environment (European Commission), ICF and Trinomics, 20 18).



Environmental impacts

A CE will lead to decreased GHGs emissions and resource use → allowing us to meet the goal set by the *2015 UN Paris Agreement* to keep:

“[...] a global temperature rise this century well **below** 2 degrees Celsius above pre-industrial levels and to pursue **efforts** to limit the temperature increase even further to 1.5 degrees Celsius.”

(The Paris Agreement, n.d.)

Why this **urge**?

“GHG emissions have **risen** at a **rate of 1.5 per cent per year** in the last decade, stabilizing only briefly between 2014 and 2016. Total GHG emissions, including from land-use change, reached a record high of 55.3 GtCO₂e in 2018.”

(United Nations Environment Programme, 2019)

Note: gigatonnes of CO₂ equivalent (GtCO₂e)



We need to look at the **big picture** because **GHGs emissions derive from different sources.**

Let's have a look at a study from Ellen MacArthur Foundation and Material Economics (2019).

Out of the total global GHGs emissions of 2010:

- 55% of it represented by **energy** (energy for transportation, for buildings and energy systems);
- 45% of it linked to the **production of materials, products, and food, and the management of land.**

According to the study, **renewable energy** and **energy-efficiency measures** alone, as one of the prerogatives of a circular economy, could tackle **55%** of the total current emissions (ibid).



What about the remaining 45%?

A circular economy could **complete the picture** by, for instance, doing so (Ellen MacArthur Foundation and Material Economics, 2019):

- If buildings and vehicles are made out of **recycled materials**, instead of brand-new extracted ones, the **demand** for those materials will **decrease**, as well as the **emissions** deriving from their production (ibid);
- In the food industry, implementation of **regenerative farming**; regenerative agriculture practices can help by “moving from carbon reduction to carbon sequestration” and by building soil fertility levels (ibid). Furthermore, a circular food industry would entail the **conservation** of all the materials in use and the **elimination** of waste in order to “avoid emissions related to uneaten food and unused by-products” (ibid).



Summary of the environmental impacts:

- **Decreased GHGs emissions and resource use;**
- **Supported land productivity and soil health** (Sustainable Europe Research Institute (SERI), Austria and GLOBAL 2000 (Friends of the Earth Austria), 2009; The Circular Economy In Detail, n.d.);
- Improved **conservation of biodiversity and landscapes** that have been subjected to tragic losses and depletion in recent times, given the increased soil health;
- **Decreased** dependency on **supplementary nutrients** such as chemical fertilizers, given the return of natural nutrients to the soil (The Circular Economy In Detail, n.d.).



Social impacts

- A **net employment increase**, encountering for approximately 700,000 new jobs (Cambridge Econometrics, Directorate-General for Environment (European Commission), ICF and Trinomics, 2018);
- **Job creation** in areas where unemployment is elevated (Rizos, Tuokko and Behrens, 2017);
- New jobs will demand **new skills**, and high-skilled positions, therefore leading to an **increase in high-skilled employment** (ibid);
- **Distributed impacts** among **varied income groups** is expected (ibid).



Recap of Module 3

Why Implementing A Circular Economy?



The situation of the planet



Economic impacts



Environmental impacts

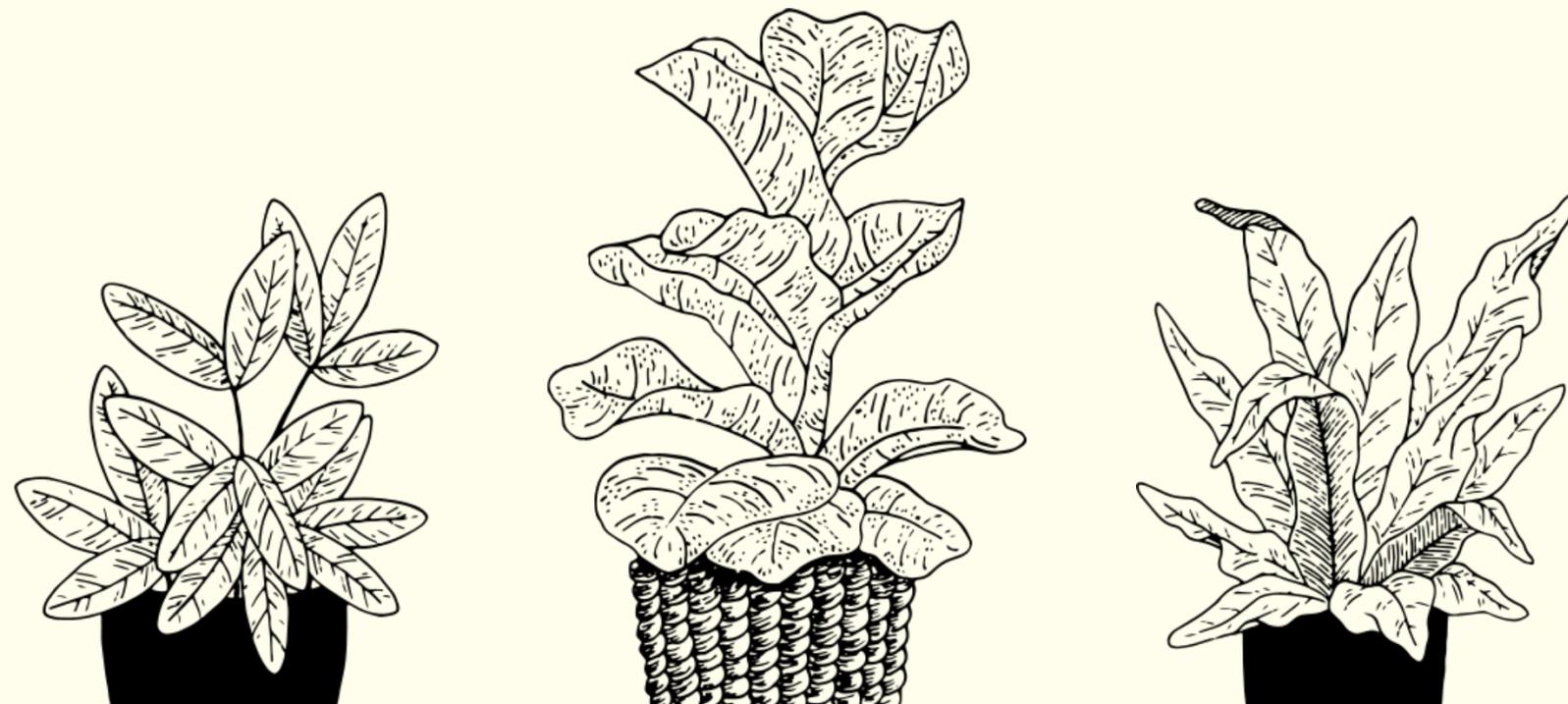


Social impacts

Do you have questions so far?

MODULE 4

THE POLITICAL FRAMEWORK



4.1 The importance of the political framework

The **political sphere** plays a **key role** in the process of starting to materialize an actual and sustainable transition towards a circular economy.

Indeed, **political incentives** and **consistent leadership** are beneficial to:

- The transition process;
- The producers' and consumers' behaviors.

Do you agree with these statements?

Why do you think the political framework is important?



Why is the political sphere key to the transition?

- Because several policies may **reinforce** behaviors that are at the core of the linear economy and make it difficult to transition to a circular economy;
 - E.g. policies that, through tax reduction or subsidy, make it easier and profitable to produce in large scale, or to dispose of excess food rather than distributing for re-use;
- Because the transition requires **collaboration** between **governments** and **businesses**, especially in the first stages;
- Because it is vital to **drive innovation** through the **creation of market** for new products and services and focusing on circular sustainability (Vinnova, 2019).



As such, **the political sphere** is a vital player in the **shaping of new behaviors**, attitudes, and production and consumption patterns.

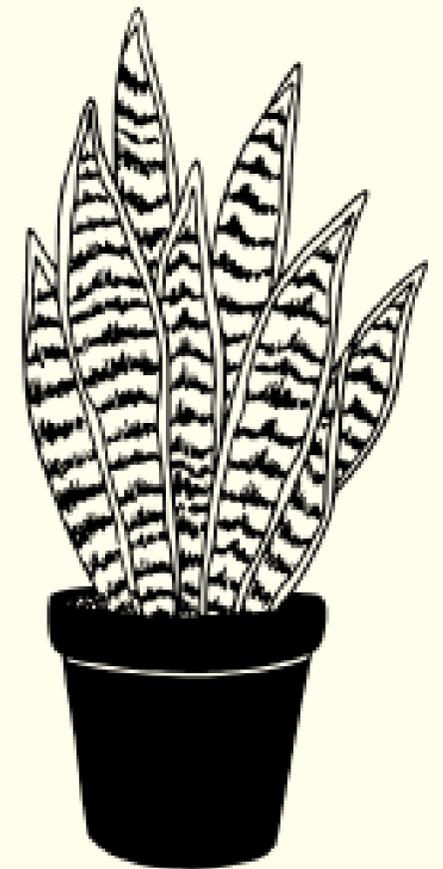
In the transition towards a CE, what should policies focus on?

- The creation of conditions by

“addressing barriers and enabling the development of **new markets and business models**, bringing in economic, social, and environmental benefits resulting from optimized use of resources in particular, the **creation of jobs and economic value** and to slow down resource depletion.”

(SB Insight, 2019)

- A **tax shift** towards decreasing taxation on resources such as labor (renewable) while increasing on finite resources (SB Insight, 2019).



4.2 Circular Economy and the European Political Framework



Image's source: Wikipedia

July 2019 - the Commission announced a budget of €1 billion to support a circular economy (European Commission, 2019).

The **EU circular economy package** targets:

- The loss of materials in the EU, proposing amends to the EU's waste legislation and to transform waste into a valuable resource;
- Job creation;
- Reduction of carbon emissions.

Member states have been encouraged to establish **laws to facilitate more circularity**, such as:

- VAT taxes drop on repair activities;
- Ban of single-use plastics;
- Ban of toxic chemicals in agriculture (SB Insight, 2019).

Working at **EU level** is **key** to driving investments and creating a common ground for the transition towards a circular economy, particularly for supporting the **removal of barriers** in the **single market**.



“**Policy makers** have to focus their work now on **enabling businesses** to **redesign** projects so that they use **less material** and access energy differently, to build a culture of **repair** and to invest heavily in the **remanufacturing** space. This would lead to factories coming back to Europe, not to feed the world, but ourselves, locally at human scale.”

(SB Insight, 2019)

But, what does “producing at human scale” mean?

For instance, practices such as repairing, reusing, redistributing, refurbishing and remanufacturing highly rely on **human employment**, and this is the reason why they should be preferred (ibid).

Valorizing natural resources is another essential component to **rebuild economies**:

“New tax regimes such as **Ex-Tax** [A tax system where natural resources are increasingly taxed, and labor is decreasingly taxed] [...]”

(ibid)



Initiatives and policies that encourage a transition towards a circular economy:

- **Seventh Environment Action Program (VII WFP)** to convert the EU into a low carbon economy, with efficient use of resources, ecological as well as competitive;
- **Paris Agreement on Climate Change (COP 21. 20 15);**
- **The 2030 Agenda for Sustainable Development (20 15) - the 17 Sustainable Development Goals (SDGs);**
- **The New World Urban Agenda (UN-Habitat 20 16).**



European policies for circular economy

Circular Economy Action Plan (2015)

- **Break policy silos** and **expand circular economy principles** across policy areas;
- **Revise legislative framework on waste** (Rizos, 2019);
- Adoption of a **Circular Economy Monitoring Framework** “to **measure progress** towards a circular economy at **EU** and **national level**” (SB Insight, 2019).

European Green Deal (2019)

- Main goal is to make the **EU climate neutral by 2050**;
- Focuses on the **financing tools** which are available, and on what investments are needed for this transition to happen (European Commission, 2020c);
- Provides a **roadmap** with actions “to boost the efficient use of resources by moving to a clean, circular economy and stop climate change, revert biodiversity loss and cut pollution” (European Commission, 2020d);
- Overall budget of at least **€100 billion** over the period 2021-2027.

Circular Economy Action Plan (2020)

- **Active involvement** of citizens;
- **Empowers** consumers while **producing more sustainably**;
- Targets **resource-demanding sectors** such as electronics, packaging, plastics, construction, textiles, construction, food and water and nutrients;
- Promotes the circularity of the entire **life cycle** of products (European Commission, 2020b);
- Seeks to ensure that “the **resources** used are **kept** in the EU economy for as long as possible” (ibid).



European policies for circular economy

The 2015 Circular Economy Action Plan

Was “a **first step** to a **long-term commitment** to **establish a European circular economy**” (European Commission’s “Circular Economy Action Plan” - United Nations Partnerships for SDGs platform, 2020). It was defined as a:

“political instrument with high replicability”, and “its focus on cooperation and comprehensive action, covering the entire product’s cycle, makes it suitable for different political and economic contexts.”

(ibid)



European policies for circular economy

The EU Green Deal

It has key policy areas topics, such as:

- “**From farm to fork**”, which seeks to ensure more sustainable food systems;
- “**Clean energy**”, which envisions opportunities for alternative, cleaner and renewable sources of energy;
- “**Sustainable industry**”, which targets more sustainable, environmentally-respectful production cycles;
- “**Building and renovation**”, which acknowledges the need for a cleaner construction sector;
- “**Eliminating pollution**”, which seeks to efficiently cut pollution (European Commission, 2020c).



European policies for circular economy

The 2020 Circular Economy Action Plan.

The Action Plan is based on the **Eurobarometer survey** published on March 2020 (European Commission, 2020e).



- 83% of the respondents believe EU legislation to be necessary to protect the environment;
- Citizens are willing to be more involved in this objective;
- Citizens consider changes in consumption and production patterns to be the “most effective ways of tackling environmental problems” (European Commission, 2020e).

What about you? What role do you believe the government plays in the transition to a CE? What role do citizens play?



European policies for circular economy

What kind of opportunities emerged from these initiatives?

- EU Green Deal - the Circular Economy Action Plan and the **Horizon Europe framework programme**;
- **European Green Deal Call** (May 2020); aim of responding to the urgency and ambition of the EU Green Deal within the current Horizon 2020 framework programme with a budget close to €1 billion.

The call seeks to mobilize **research** and **innovation** to foster the transition to a sustainable society through 11 areas, including “industry for a clean and circular economy” (European Commission, n.d.).



Political sphere – the obstacles for the adoption of a CE in the EU

- **Different national legislations**, e.g. related to recycling and reuse → more waste;
- Inconsistent “**best before**” and **VAT legislations** for donated food → **food waste**;
- The **global material flow** (imports and exports) may disguise consumers of the effects of their own consumption;
- Lack of support supply and demand network, of capital, and of government support (Rizos, 2019).

Particularly, **obstacles to a CE** include (Rizos, 2019):

- High **administrative burden** and **costs** of shipment of waste for materials’ recovery within the EU;
- **Uncertainty** about substances included in products;
- **Low progress** in setting eco-design requirements for non-energy related products;
- **Lack of emphasis** and **evidence** on the merits and de-merits of circular options;
- **Wide differences** in waste management performance across member states and a lack of waste collection and processing infrastructure in several countries.



→ The implementation of a CE has been **limited in most EU Member States**.

Do you know what the situation is in your country?

*Recent researches show that **cultural barriers** play a key role in hindering a CE (Kirchherr et al., 2018).*

Consumers' preferences as the main barrier: **consumers may prefer new products** → it indicates that CE principles have still not been internalized in our societies as the norm, nor as the most suitable approach to production and consumption.

What about you? Do you prefer new products, or do you buy second-hand?

Market-related barriers (Kirchherr et al., 2018):

- “Low virgin material prices”;
- “High upfront investment costs” of CE business models.

Regulatory and political framework barriers (ibid):

- Lack of a “smart regulation”;
- Lack of a “supportive policy frameworks”;
- The fact that regulation tends to prevent “cascading material across international borders” (Kirchherr et al., 2018).



However, in an **EU context**:

- **Regulation** does not impose a crucial barrier - perhaps a result of the extensive policy and financial incentives (Kirchherr et al., 2018);
- **Technological** barriers appear not to be as much pressing as **cultural and market barriers**.

Conclusions (ibid):

- A need to shift the focus from incentives to research and innovation;
- Incentives to lower the costs of virgin material;
- Upfront investment needed to transition towards a CE, which may in turn drive crucial cultural changes needed in this transition.

The political framework and active investment in political initiatives to support the transition to a CE are vital for achieving the goal.



4.3 Circular economy and the Belgian Political Framework

Introduction

Given the federal structure of Belgium, most environmental issues are a regional competence.

The three regions (Flanders, Wallonia and Brussels Capital Region) have authority regarding socio-economic matters, such as zoning and planning, housing, agriculture, employment, and energy.

The Federal Government and the regions **share** competences on the environment—so while the **Federal Government** is in **charge** of the **protection and management of coastal waters**, the **regions** define policies for **waste, green areas, forests, continental waters, and waterways** in their respective regions.



5th of May 1997 → **First Federal strategy for sustainable development.**

The strategy developed in consultation with the **four actors** responsible for specific and additional policy tasks: (note → each of the following has a **sustainable development policy cell**)

- **Federal Institute for Sustainable Development (FIDO)**; Mission: "policy preparation for sustainable development, coordination of the implementation of sustainable development policy, provision of expertise" (FIDO, 2020).
- **Interdepartmental Commission for Sustainable Development (ICDO)**; Main task: transversal policy preparation.
- **Sustainable Development Task Force of the Federal Planning Bureau (TFDO)**; Main task: it makes studies and prospects on economic, social and environmental policy issues and studies the integration of those policy issues in a context of sustainable development.
- **Federal Council for Sustainable Development (FRDO)**. It is primarily an advisory body and includes representatives of various social groups.

Further initiatives: comprehensive roadmap with its "21 measures to boost the circular economy" (Samen de economie doen draaien dankzij de circulaire economie in ons land, 2016). Several studies followed from this.



Initiatives in the **three regions**:

Brussels Capital region

- Regional Programme for Circular Economy (GPCE), also known as BeCircular, launched in 2016. Three general objectives:
 - Transforming environmental objectives into economic opportunities;
 - Anchoring the economy in Brussels to, when possible, produce locally;
 - Contributing to job creation.

Flemish region

- Vlaanderen Circulair (2017). It focuses on three pillars of action: circular procurement, circular cities and circular businesses and entrepreneurship. This is done through five themes: materials, biomass, water, environment and energy (Vlaanderen Circulair, 2020);
- Green Deal on Buildings and Construction (2019);
- Food Supply Chain Roadmap on Food Loss (2015).

Walloon region

- CE already present in several areas in Wallonia. It is mainly developed in terms of waste prevention and management, in particular with the adoption of the Walloon waste-resource plan (2018);
- Green Deal Circular Procurement (2019);
- Initiatives for eco-design;
- Food waste reduction objective.



Obstacles for the adoption of a CE in Belgium

- **Need for policy integration;**

- Challenges for integrated planning, coordination and decision making remain at **all levels of policy-making**: European, Federal, regional and local;
- Also crucial to achieve maximum coordination with other policy areas such as climate, water, space, mobility and transport (Sociaal-Economische Raad van Vlaanderen, 2019).

- **Waste law in a circular economy and the classification of a material and/ or product as waste;**

The term “waste” appears to offer insufficient guidance to be able to determine in a sustainable (business) process whether waste law may or may not apply;

- **Sustainable / circular public procurement rules in Belgium and its regions;**
- **Product standardization;**

The lack of circularity in product standards is considered to be one of the obstacles to the transition to a CE;

- **Lack of clear definition of sharing platforms and product-as-service.**



4.3 Circular economy and the Polish Political Framework

Introduction

Current environmental and economic challenges in Poland:

- The depletion of non-renewable resources;
- The prices' increase of non-renewable resources;
- The growing dependence of Poland on supplies from abroad.

In this context, it is **necessary** to take immediate action by the **public sector** → supporting the transition towards a CE is important in creating a low-carbon, resource-efficient, innovative and competitive Polish economy (GOZ, 2019).



Towards a CE implementation

- September 2019, adoption of the **CE road map project** by the Polish Council of Ministers. It is one of the projects of the **Strategy for Responsible Development** (Serwis Rzeczpospolitej Polskiej, 2018).

The CE road map is a document containing a **set of tools**, not only legislative, which are designed to creating conditions for the implementation of a new economic model in Poland. Topics:

- "Sustainable industrial production";
- "Sustainable consumption";
- "Bioeconomy";
- "New business models";
- Implementation and monitoring of a CE;
- LCA (lifecycle assessment).



Current stage

At present, Poland is at the stage of developing detailed documents and a CE implementation strategy.

Obstacles for the adoption of a CE in Poland

Three main barriers for the implementation of the CE in Poland :

- **Legislative barriers.** Legislative paths in Poland are very long and complicated. In addition, the CE theme in the light of the legislation must be in line with EU guidelines which further extends the bureaucratic process;
- **Infrastructural barriers.** Changing and adapting the infrastructure to the needs of CE takes a lot of time but, above all, it requires huge financial outlays;
- **Mentality barriers,** the most difficult to be overcome, and they require a long-term impact strategy; it needs to reach many categories (GOZ, 2019).



4.3 Circular economy and the Romanian Political Framework

Introduction

In recent years, Romania has made continuous efforts to **align itself** to the new plan for a EU circular economy.

It has also made efforts to **optimize** its own resources in order to **minimize** waste production and to improve and maximize reuse.

In spite of these initiatives, the country is still falling behind when compared to other European member states in the process to promoting a circular economy (Târțiu et al., 2018).



Regulations adopted by Romania to facilitate the transition towards a CE:

- **DECISION no. 3 of February 2, 2016 on the Circular Economy Package "Closing the loop - an EU action plan for the circular economy";**
 - Through this decision, Romania declared its commitment to promoting a public policy towards a circular economy.
 - It supports the main objective of the Circular Economy Package
- **Emergency Ordinance no. 68/2016 for the amendment and completion of Law no. 211/2011 on the waste regime;**
 - It encourages the design of products that have a low environmental impact;
 - It encourages the production and marketing of multi-use products which are technically sustainable and that can be recovered (Monitorul Oficial, 2016).
 - It points out that in order to facilitate and improve recovery, waste should be collected separately, ensuring technical, economic and environmental protection.
 - A key issue that arises from the Ordinance → instrument of “pay for what you throw away”.



- **National Strategy for Sustainable Development of Romania Horizons 2013–2020–2030;**

- Halve per capita food waste at the level of retail and consumer;
- Reducing food loss along production chains and supply, including losses post-harvest;
- Recycling 55% of municipal waste by 2025, and 60% by 2030;
- Separating waste collection of hazardous household waste by 2022, of bio-waste by 2023 and of textiles by 2025;
- Establishing a mandatory scheme of extended liability to manufacturers for all packaging by 2024 (Descrierea CIP a Bibliotecii Naționale a României, 2018).

Romania further follows the following EU legislative initiatives:

- **Environmental management system (EMAS);**
- **EU Ecolabel;**
- **Green Public Procurement, 2016, Law no. 69 on green public procurement.**

Regarding the country's **waste management policy**, the Romanian Government aims to **align** the national waste management policy with the objectives of the European waste prevention policy.



Obstacles for the adoption of a CE in Romania

Identified obstacles (Târțiu et al., 2018):

- Necessary infrastructure costs;
- Lack of high-performance recycling solutions in Romania;
- Lack of a public-private partnership;
- Operating costs;
- Lack of viable economic instruments, inefficiency of state institutions.

Threats that slow down the process and transition to a circular economy in Romania (ibid):

- Tendencies towards excessive consumption and only few actions to increase resource productivity;
- Delays in implementing measures to a separate collection;
- Lack of national and local environmental authorities (including Environmental guards);
- Lack of tools for strategic planning at the decision-making process;
- A low degree of awareness among the population regarding the importance of a sustainable consumption model focused on waste prevention, reuse and recycling.



4.3 Circular economy and the Spanish Political Framework

Introduction

The circular economy has been a priority in Spain for a long time. Traditionally the efforts have been made in the **area of waste management** but, more recently, a **more systemic approach** is being implemented, with specific circular economy plans and strategies.

Strategies at national level	Spanish Strategy for Circular Economy 2030 (June 2020);	It lays the foundations to promote a new model of production and consumption in which the value of products, materials and resources remain in the economy for as long as possible. It is aligned with the objectives of the two circular economy action plans of the EU, in addition to the European Green Pact and the 2030 Agenda for sustainable development.
	Draft Law on Climate Change and Energy Transition (May 2020), Ministry for Ecological Transition and Demographic Challenge;	The normative and institutional framework to facilitate the progressive adaptation of our reality to the demands that regulate climate action.
	Action Plan for the Implementation of the 2030 Agenda, towards a Spanish Strategy for Sustainable Development;	
	Spanish Urban Agenda;	The roadmap that will set the strategy and actions to be carried out until 2030, to make towns and cities areas of friendly, welcoming, healthy and aware coexistence.
	State Program for the Prevention of Waste 2014-2020 and the State Plan for Waste Management 2016-2022;	Through those, the generation of all types of waste is expected to be reduced by 10% in 2020 by 10% over 2010 levels.
	Spanish Bioeconomy Strategy Horizon 2030 (2015);	This strategy defines the bioeconomy as the set of economic activities that obtain products and services, generating economic value, using, as fundamental elements, resources of biological origin, in an efficient and sustainable way.
	Ecological Public Procurement Plan (2019);	It will serve as an instrument to promote and facilitate economic growth, based on a circular, low-carbon, resource-efficient, waste-free, non-polluting and eco-innovative economy.
	National Plan for Treatment, Sanitation, Efficiency, Savings and Reuse Plan - DSEAR Plan	Planned for publication in 2020.



Strategies at regional level	Strategy to Promote the green economy and the circular economy of Catalonia (2015);
	Smart Development Strategy of Navarra (2016);
	Andalusian Strategy for Sustainable Development 2030 that includes the development of the Circular Economy (2018), Andalusian Strategy for Circular Bioeconomy (2018);
	Extremadura 2030: Strategy for green and circular economy (2018)
	Euskadi Circular Economy Strategy 2030 (2019) ;
	Circular Economy Strategy of the Region of Murcia (2019);
	Circular economy law of Castilla la Mancha, first CCAA that legislates the Circular Economy of Spain (2020);
Strategies at local level	Circular Economy Strategies of the Canary Islands, Galicia, and Castilla y León are under development
	Pact for a Circular Economy (2017) Ministry of Agriculture, Fisheries, Food and Environment;
	Local Strategy of Circular Economy promoted by the Spanish Federation of Municipalities and Provinces (2019).

Obstacles for the adoption of a CE in Spain

Main barriers for the adoption of a CE (Cotec, 2017):

- **Legislation and regulations;** integration and harmonization between the different European legislative levels with the national, regional/ autonomous and local levels in the management of material/energy and waste resources;
- **Economy/ finance;** Comprehensive Tax Reform in the medium term, which includes measures to direct society towards sustainability, through incentive systems, monetary and non-monetary;
- **Education and training;**
- **Technology;**
 - To develop cutting-edge technologies that can favor the reduction of raw materials and the reuse and recycling of these materials at the end of their life cycle;
 - To increase energy efficiency and economic viability of renewable sources.
- **Business models;** Promotion and development of new business models, both for the transformation of existing economic activities and for the creation of new ones.



4.3 Circular economy and the Swedish Political Framework

Introduction – A circular economy pioneer?

Historically, the Nordic countries have been characterized by their **high environmental awareness** and **technical innovation initiatives**.

Regionally, as well as internationally, **Sweden** is one of the countries that is particularly exploring its role as a consistent **green leadership**.

- People in the Nordic countries seem to be generally **receptive** to shifts in the tax paradigm towards increasing the taxation on physical goods and decreasing it on services and labor (SB Insight, 2019);
- Over **99%** of the Swedish **household** waste is **recycled** (Nederlandwereldwijd.nl, 2018).



Governmental encouragement, business initiatives

In the last years, the Swedish coalition government has adopted **ambitious policies and goals towards transitioning to a green economy** (Un-page.org., n.d.).

This is linked to the **Fossil-Free Sweden** initiative → aims at making Sweden one of the world's first **fossil-free** welfare states.

For instance, Sweden has increased budget for **investments in renewable and sustainable energy sources**, particularly solar energy

In response, several businesses are incorporating this green approach, exploring green innovation and circular perspectives.

Large **Swedish companies** are **investing** in ambitious and innovative initiatives (SB Insight, 2019):

- **H&M**, that aims to achieve 100% circularity in 2030;
- **IKEA**, which implemented circular initiatives of reuse and sharing and has committed to phase out all single-use plastics from stores and restaurants by 2020;
- **Mathem.se**, which partnered with online stores to offer efficient returns.



Initiatives	Description
Climate and energy coaches	In between 2016-2019, municipalities could apply for getting help covering the cost of special climate and energy coaches. These coaches provided targeted advisory services to small and medium-sized enterprises to increase energy efficiency and reduce GHGs emissions while boosting a company's competitiveness and opening new opportunities for growth at reduced costs (Swedish Energy Agency, 2017).
Delegation for Circular Economy	Appointed by the government in 2017 “to investigate and put forward policy recommendations” (SB Insight, 2019). The government has been allocating SEK 5 million per year since 2018, to support the delegation and stimulate the transition to a resource-efficient and circular economy.
Reduction of VAT reliefs on repairs of bicycles, clothing, textiles and leather goods	From January, 1st 2017, they were reduced from 25% to 12% (ibid).
National Strategy for Sustainable Consumption	Launched by the government in 2016. This strategy focuses on “what the State can do, together with municipalities, the business sector and civil society, to make it easier for consumers to act sustainably” (Regeringskansliet, 2019).
National Food Strategy	A platform that directs the Swedish Food Policy until 2030 to create stability and ensure a long-term plan that includes the whole food supply chain (Government Offices of Sweden, 2016/17).



Obstacles for the adoption of a CE in Sweden

In spite of the initiatives previously mentioned, **what is missing?**

- The Swedish political framework can still adopt **further measures** to **enforce** the transition towards a circular economy, especially by emphasizing the areas that have the greatest potential and supporting a clear common national strategy for what to prioritize (Vinnova, 2019);
- Establishing **parameters** to measure the circularity of a product and/or initiative in a standardized manner (ibid);
- **Countering** the high private consumption of new goods;
 - A research in Sweden has shown that the population is still **resistant** to renting products;
 - Many also find it cheaper and easier to buy new products instead of repairing old things;
 - **32%** of Swedes believe that selling secondhand items takes too much time (SB Insight, 2019).



Obstacles for the adoption of a CE in Sweden

- Although Sweden is very successful in its recycling strategy, it is important to note that **recycling an end product is very much aligned with a linear economy**.
→ There is a great need to **invest** in initiatives to **reuse** and **recycle** resources throughout the whole supply chain, as well as in repairing and other circular practices;
- A research has shown that although 20% of the Swedish consumers actually want to actively save or invest in circular companies, funds or stocks, most consumers are **unaware** of the possibilities to invest in circular companies.

Have you thought of this before?
What do you think could be done to tackle this?



4.4 Micro, meso and macro levels of a circular economy

Actions to transition to a CE and new policies and trends may occur on different levels and have effects in distinct spheres.



This makes it hard to monitor and measure its effects.



So, understanding the distinction between indicators occurring on a **micro**, **meso**, and **macro** levels is crucial to have an **accurate perception** of the progress made, issues and barriers that emerge, and possible solutions.

Given the different scope of each level, categorizing indicators according to them may **facilitate** the **monitoring** process of a CE.

However, “a detailed understanding of how to measure and document progress towards a circular economy is lacking, especially on a **micro** level”. (Kristensen and Mosgaard, 2020)



Miso

- It refers to indicators occurring in a **single firm or product and consumers** (Kristensen and Mosgaard, 2020);
- It supports **decisions concerning**:
 - The implementation of policies and decisions in areas such as product policies, energy efficiency, and integrated waste management.
- It sets **emphasis on**:
 - The business;
 - Local level;
 - A specific substance;
 - Individual products.
- Microeconomic indicators describe the economic, environmental or social performance of a **city, product or company**.

Meso

- It concerns **companies belonging to an industrial symbiosis**, namely eco-industrial parks, whose actions benefit regional economies and natural environments (Kirchherr, Reike and Hekkert, 2017);
- It supports **decisions concerning**:
 - Material flows within the economy, distinguishing not only categories of materials, but also industries or branches of production and categories of consumption.
- It sets **emphasis on**:
 - Industry;
 - Consumption activity or particular material level helping to detect waste of materials;
 - Pollution sources;
 - Opportunities for efficiency gains in specific sectors or consumption domains.
- Meso-economic indicators describe the economic, environmental or social performance of a **region, a product group or an industry**.

Macro

- It compiles indicators related to the **political and regulatory framework within the overall economy**, overreaching from a global to a municipal sphere (Prieto-Sandoval, Jaca and Ormazabal, 2018);
- It supports **decisions concerning**:
 - Economic, trade and environmental policy integration;
 - Sustainable development strategies;
 - Action plans;
 - National waste management;
 - Resource conservation policies.
- It sets **emphasis on**:
 - (Material) exchanges between the economy and the environment;
 - International trade;
 - Material accumulations in national economies, rather than on flows within the economy.
- Macroeconomic indicators describe the characteristics of a **country or larger region** mostly in relation to interactions with the rest of the world through trade flows.



Recap of Module 4

The Political Framework



Why is the Political Framework important?



Circular economy in the EU



Circular economy in your country

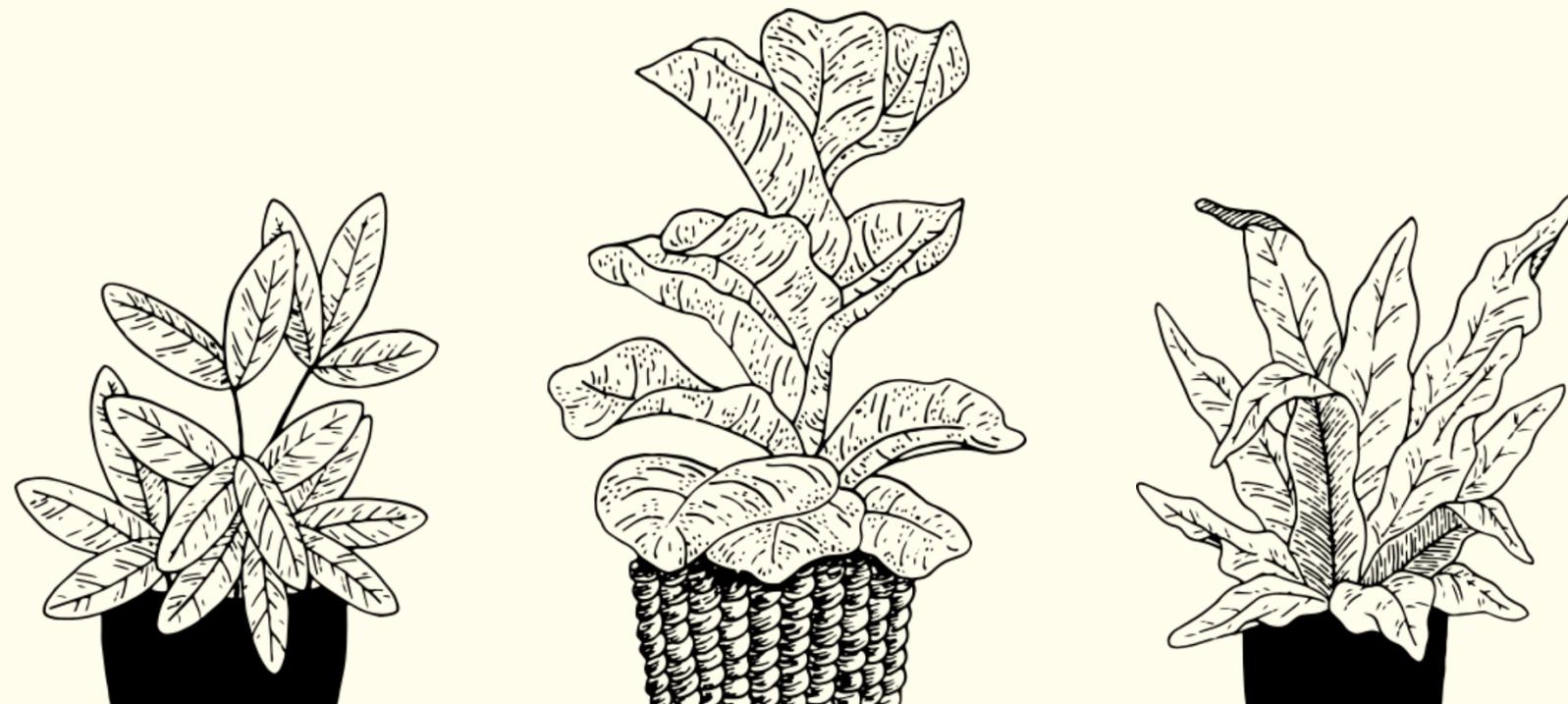


Levels of a circular economy implementation

Do you have questions so far?

MODULE 5

10 CIRCULAR PRACTICES

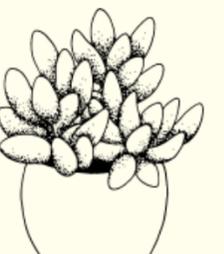


5.1 Introduction

Introduction

- Current unsustainable economic model and its impacts → urge to shift towards a sustainable and circular model;
- The political sphere is also intervening;
- **Circular practices** → actions that contribute to rethinking the economy and building other ways of doing and making;
- Simple actions that become powerful strategies to break the dynamics of "buy-use-throw away".

[Video](#)



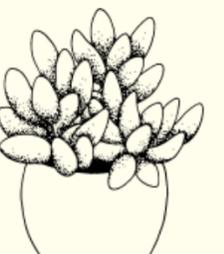
5.1.1 Recovery

Waste is the **final stage** in the life cycle and supply chain of a substance/product.

Within the **recovery** cycle, the process focuses on the recovery of the substance from that waste.

What does recovery do?

It **converts waste into resources and transforms them into new products/substances** (such as compost or energy, heat, fuel) (Rgang, n.d) → elimination of waste.

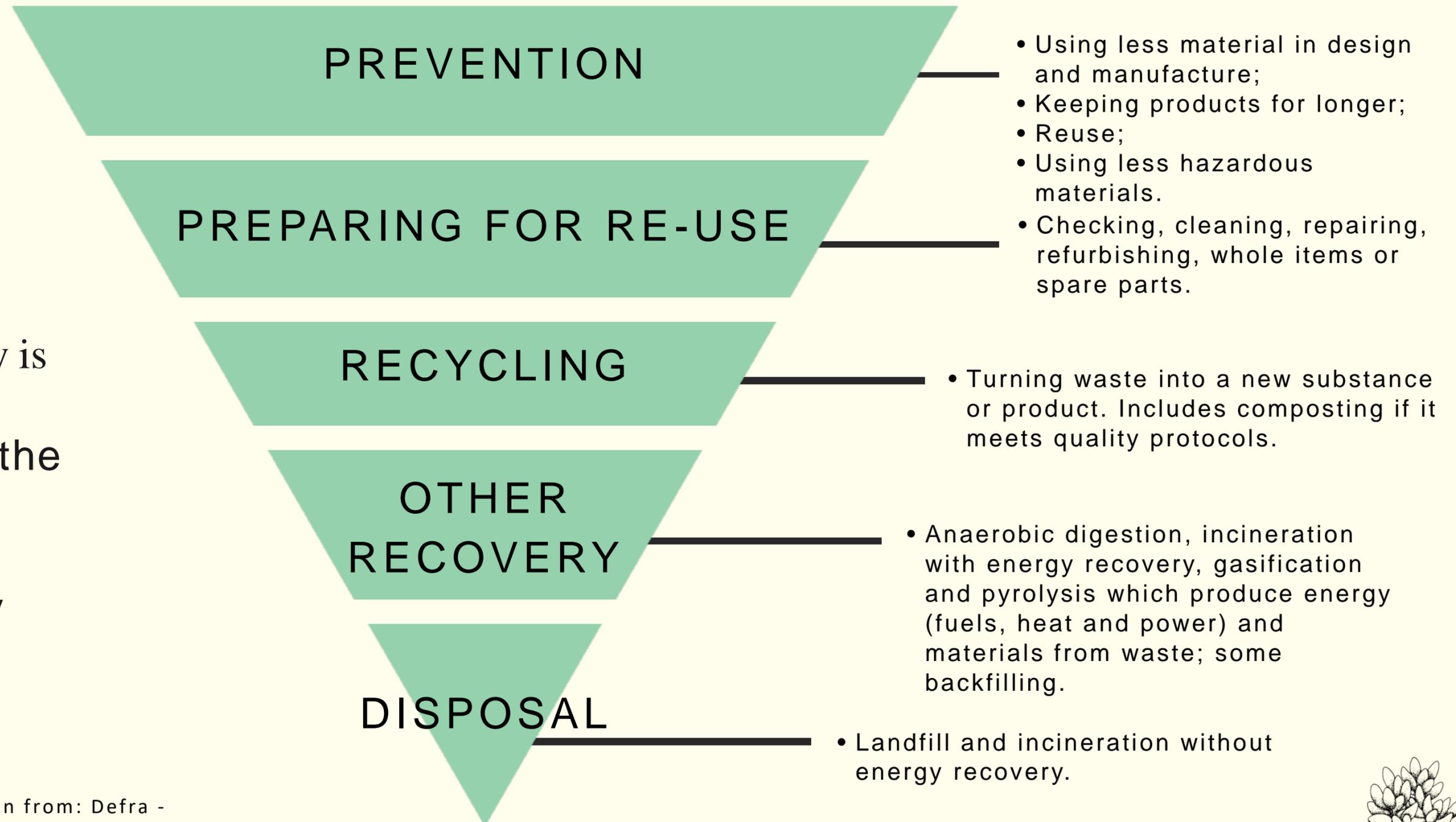


Waste hierarchy

HOW? 

Purpose:
to present waste management alternatives.

In a circular economy vision, the main priority is to **prevent** waste. When waste is created, the priority should be to prepare it for **re-use**, **recycling**, then **recovery** and, the last option, **disposal**.

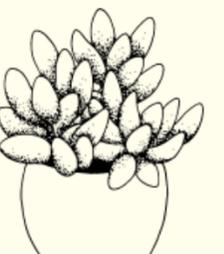


How much waste do we generate?

“Approximately 2.6 billion tonnes of waste were generated in the EU-28 in 2014” (Hollins, 2017). And, where does it go?

Other definitions within recovery

- **Material recovery**, “any recovery operation, other than energy recovery and the reprocessing into materials that are to be used as fuels or other means to generate energy. It includes, inter alia, preparing for re-use, recycling and backfilling” (EUR-LEX.eu, 2008);
- **Backfilling**, “any recovery operation where suitable non-hazardous waste is used for purposes of reclamation in excavated areas or for engineering purposes in landscaping” (ibid);
- **Energy recover**, “after recyclable materials have been removed, the remaining waste can be treated to release energy. There are two types of technologies used generally for converting waste streams into energy: thermal and biological. Thermal waste-to-energy is created by burning trash, while biological processes are typically centered on anaerobic digestion” (Fluencecorp.com, 2017).



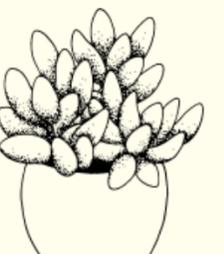
Good recovery practices/examples:

- **Hazelmere Resource Recovery**

Purpose of the park: “to recover resources from some waste streams thus diverting waste from landfill and providing an opportunity to re-use materials” (Hazelmere Resource Recovery Park, n.d.).

- **Waitaki Resource Recovery Park from New Zealand**

The aim of the park is to transform rubbish into resources (About WRRP, n.d.).

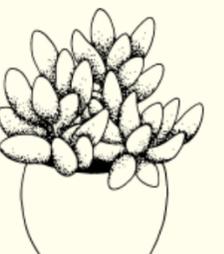


5.1.2 Recycling

Recycling allows materials and resources to return back to the economy and to be used again.

“Any recovery operation by which waste, materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.”

(Eur-lex, 2008)



Benefits of recycling (Cleanpedia.com, 2019):

- It reduces the amount of waste sent to landfills and incinerators;
- It conserves natural resources such as timber, water and minerals;
- It prevents pollution by reducing the need to collect new raw materials;
- It saves energy and reduces greenhouse gases emissions;
- It helps to create jobs in the recycling and manufacturing industries.

...And, if we don't recycle?



How does recycling work?

It is composed by the following activities: **collection**, **separation**, and **processing** (mechanical and chemical) of waste. Those are ensured and stipulated by European laws.

Recycling is recommended only if **reducing** and **reusing** processes are not possible → **requires time** and **energy**.

However, **before** recycling any individual/ company/ manufacture should consider to:

1. Reduce the amount of waste created;
2. Reuse a product again, instead of throwing it away.

Recycling rates are growing in the EU (Eurostat, 2019):

- “The EU recycled around **55% of all waste excluding major mineral waste** in 2016 (compared with 53% in 2010),
- the rate for recovering **construction and demolition waste** reached **89%** (2016),
- the recycling rate of **packaging waste** exceeded **67%** (2016, compared with 64% in 2010)
- while the rate of **plastic packaging** was over **42%** (2016, compared with 24% in 2005).
- The recycling rate for **municipal waste** stood at **46%** (2017, compared with 35% in 2007)
- and for the **waste of electrical and electronic equipment** [...] reached **41%** (2016, compared with 28% in 2010)” (ibid).

“[...] on average **only 12% of material resources used in the EU in 2016 came from recycled products and recovered materials** - thus saving extraction of primary raw materials” (ibid).



Let's learn some symbols!

Understanding the symbols and plastic codes will help consumers to choose plastics and to know which plastics to recycle.



Image source:
Wikipedia

Cut bin symbol

For the recycling of WEEE products Recycling Symbols, n.d.).



Image source:
Wikipedia

Mobius loop

The object can be recycled (Coda blog, 2016).



Image source:
Openclipart

The Green Dot

The manufacturer has contributed financially to the recovery and recycling of packaging in Europe (The Green Dot Trademark, n.d.).



Image source:
Wikipedia

The symbol asks the consumer to dispose glass bottles and jars in glass containers.

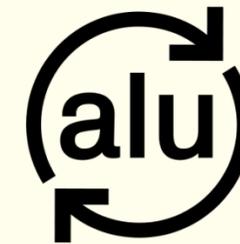


Image source:
Wikimedia

The aluminium from which the packaging is made can be recycled (Breniuc, 2015).



Image source:
Wikimedia

“Products that have obtained the right to display this symbol can be turned into compost” (Breniuc, 2015).



Some more symbols!

Identification coding system for plastics.

resin identification coding system

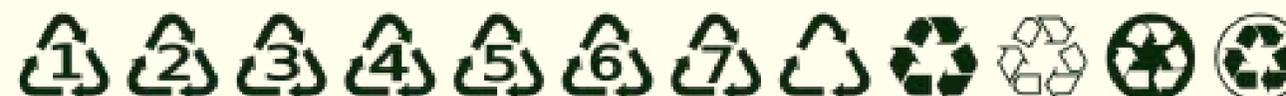


- 1 : PET Polyethylene terephthalate
- 2 : HDPE High-density polyethylene
- 3 : PVC Polyvinyl chloride
- 4 : LDPE Low-density polyethylene
- 5 : PP Polypropylene
- 6 : PS Polystyrene
- 7 : OTHER Other plastics, including acrylic, acrylonitrile butadiene styrene, fiberglass, nylon, polycarbonate and polylactic acid.



The Green Dot Symbol :

UNICODE :



5.1.3 Repurpose

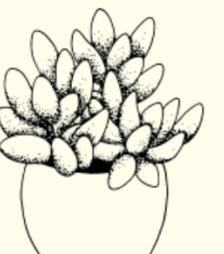
“Repurposing is the **use** of a **product** or **material for different function** than it was **originally produced for**” (Ceguide, 2018).

It allows the life extension of a product → **entire discarded product** or **parts** of it can be converted into new products with a different function or purpose.

Repurpose can be referred both as **downcycling** and **upcycling** (Circle Economy and MVO Nederland, 2015).

Benefits of repurposing:

- It **reduces waste**;
- It **saves energy**;
- It **extends** the **life of a product**;
- It **preserves** the **value of a product**.



Repurposing examples:

- **Clothes** → creation of new items from old clothes; e.g. hand bags from T-shirts, pillows from sweaters etc.;
- **Buildings and furniture** → abandoned buildings can be transformed into something new and updated. Note: “repurposing might not always be environmentally friendly or cost-effective. For example, an old building could be converted to a new use but not updated enough to reduce energy costs” (Kenton, 2019);
- **Cars and Trucks** → car sharing, or less efficient cars and trucks can be sold and to other individuals or companies.

Repurposing good practices:

- [SuperUse Studios](#) (Rotterdam, Netherlands) → architecture firm that has been involved in a number of projects that repurpose products and components.
- [HYLA mobile](#) → it has created a viable model for circular economy by repurposing mobile devices.



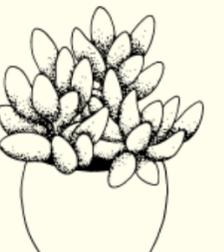
5.1.4 Remanufacture and Refurbish

Remanufacturing and Refurbishing promote waste limitation and resource conservation through the **re-use of products** and **materials** that are recovered.

“The products’ ‘core’ parts are restored so as to **maintain** the **value added** of the materials” (Rizos, Tuokko and Behrens, 2017).

Similar processes, yet **different** (Ellen MacArthur Foundation, n.d.):

- Within **remanufacturing**, the product is “disassembled to the component level and rebuilt (replacing component when necessary) to as new condition with the same warranty as a new product” (ibid);
- **Refurbishment** is “largely a cosmetic process whereby a product is repaired as much as possible, usually without disassembly and the replacement of components” (ibid).

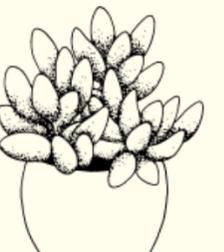


Benefits of remanufacturing:

- Lower prices for consumers;
- Lower use of energy, higher resource efficiency and lower CO₂ emissions (Remanufacturing, n.d);
- Longer product's life and waste reduction;
- Better customer relationship.

Benefits of refurbishing:

- It improves the environmental credibility of the manufacturer in the eyes of its customers;
- Increased market share;
- It “helps a manufacturer achieve higher profit margins, by giving products and parts a second or third life” (D11group, 20 18);
- It triggers a change of mindsets among consumers;
- Lower maintenance costs by giving a longer building lifecycle.



WHAT CAN ONE
REMANUFACTURE?



ANYTHING!

Some examples:

- Mobile phones;
- Tires;
- Furniture;
- Vehicular parts;
- Laser toner cartridges;
- Computers;
- Medical equipment;
- Electrical equipment.

SUITABLE SECTORS FOR REFURBISHING AND
REMANUFACTURING:

- Automobile;
- IT and electronic;
- Building;
- Furniture;
- Transportation.

Circular business example in remanufacturing:

- **Canon** → approach to produce tools and devices as well as entire systems in a way in which they eliminate waste and close the loop.

Circular business example in refurbishment:

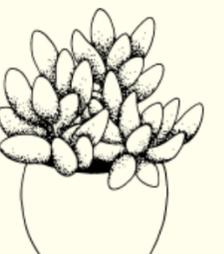
- **Tata motors** → reconditioned aggregates are provided to customers in exchange for old aggregates which subjected to simple acceptance standards.



5.1.5 Repair

Repair is the first and most preferred method in a circular economy (Circular Repair, n.d.).

- The ultimate **purpose** of this practice is to **maintain the utility of the products for as long as possible while only replacing the worn and broken components** (ibid);
- “The faulty part of a product is to be **fixed** and **restored** to a usable condition” (ibid);



Benefits of repairing:

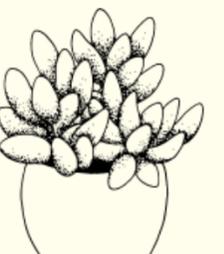
- It **prolongs** a product's life, preserving the energy and materials used to create the product (Circular Repair, n.d.);
- It **reduces and avoids waste**, especially of electrical waste and electronic equipment (Repair Café, 2015);
- It **reduces premature obsolescence** of objects, transmitting and perfecting the skill of tinkering (ibid);
- It **promotes manual work** (ibid);
- It creates **social ties** → promotion of cooperation and solidarity (ibid);
- It raises **public awareness** of environmental problems (ibid).

Relevant issues within the repairing sector (Ellen MacArthur Foundation, eBay, HP and iFixit, 2016):

- **Lack of information**;
- **Elevated cost of the spare parts**;
- **Timeframe**.

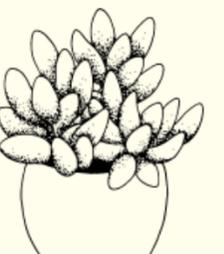
These issues can be dealt with by (ibid):

- **Increasing the availability of repair information**;
- **Increasing the availability of spare parts and accessories**;
- **Designing repairable products**.



Good repairing practices/examples:

- **The Repair Café** → At Repair Café, one can repair any sort of item that breaks down: bikes, TV players, clothes, furniture, etc. The people who repair attend informative meetings at the Repair Café. It promotes socialisation and handicraft skills (Biznes Alert, 2016);
- **iFixit** → wiki-based platform that brings together a worldwide repair community, teaching people how to repair various products. It introduces people to the repair model and spares parts and/or tools.

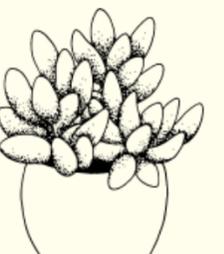


5.1.6 Reuse

“**Reuse** is a generic term covering operations where end-of-life products are put **back into service**, essentially in the same form, with or without repair or remediation.”

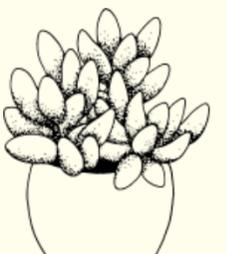
(Cole, Gnanapragasam and Cooper, 2017)

- Reuse **eliminates** waste → it is one of the most essential practices of a CE;



Benefits of reusing:

- General cut down of costs (Ellen MacArthur Foundation, 2019);
- Lower environmental footprint;
- Preservation of the product's value (Circle Economy and MVO Nederland, 2015).
- Reuse can be implemented through **formal routes** (e.g. some businesses and charity shops), as well as **informal** ones, including giving items to friends or relatives, and other informal selling platforms;
- As waste disposal costs are high, e.g. retailers started applying **reverse logistics** (Cole, Gnanapragasam and Cooper, 2017);
- Reuse is not to be mistaken with recycling.



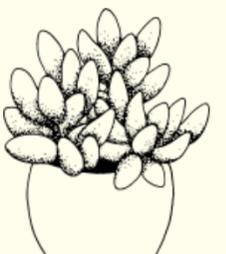
Good reusing practices/examples:

There are services like reuse centres and virtual exchange **facilitating the transaction and redistribution of unwanted materials and equipment, which still can be used**, from one person to another:

- **Reuse centres** → use of a physical space; they make the donated materials available for redistribution or sale, usually maintaining warehouses and trucks;
- **Virtual exchange** → they act as a matching service and do not have physical space; their users can post listings of materials available and wanted on an online materials exchange website.

Businesses, non-profits, schools, community groups, and individuals benefit from the both sides of this service, e.g. being buyers and sellers.

Examples: [Goodwill Industries](#) (USA) or [Salvation Army](#).



5.1.7 Reduce

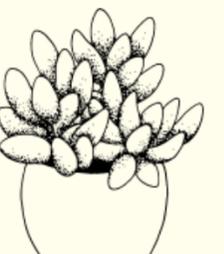
Reducing is an important concept within a circular economy.

Due to our current unsustainable model, the planet calls for reduction.

Reducing therefore implies a **direct and concrete decrease of all those practices and activities that are unsustainable at its core**, negatively impacting the environmental and social sphere.

E.g. necessity of waste reduction.

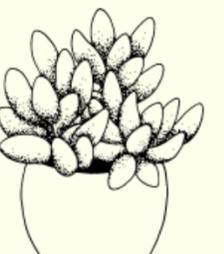
The EU alone produces more than 2.5 billion tons of waste every year (Circular economy: definition, importance and benefits, 2018) → legislation aimed at reducing waste whilst promoting and transitioning towards a CE (ibid).



Why reducing waste (Waste Reduction, 2020)?

- Less waste going to landfill;
- Less use of natural resources;
- Lower CO₂ emissions - e.g. from producing, transporting and using materials and recycling or disposing of the waste materials;
- Lower risk of pollution incidents;
- Economic savings;

Anyone can contribute: from the singular individuals to businesses and institutions.



**WHAT CAN
ONE DO?**

Buy remanufactured or rebuilt products, or products that can be refurbished

Use products in a more efficient way

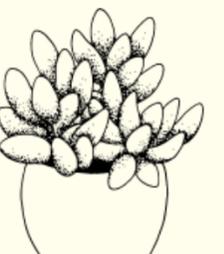
Reuse products

Buy more durable and high quality products

Buy products that have a sustainable packaging option

Donate or exchange products/materials

Instead of purchasing brand new products, rent or lease products



Going shopping? Bring your own reusable bag

Do not buy plastic water bottles

**SMALL
EVERYDAY
ACTIONS**

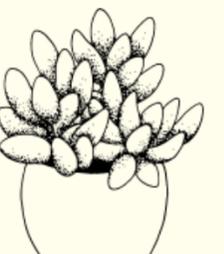
Going to a coffee shop? Bring your own thermos

Do not use plastic straws

Be aware of what is contained in the products that you buy

Good reusing practices/examples:

BMW, in 2016 winner of the title for the most sustainable automotive company according to the Dow Jones Sustainability Indexes (DJSI) (BMW, 2016); the latest performance improvements have led to a reduction of 3.3% of CO₂ emissions per kilometre from BMW cars over the past year (Nestle, n.d.).



5.1.8 Rethink

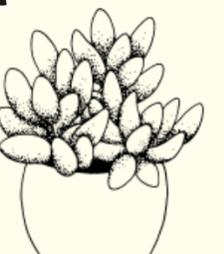
Rethinking is at the core of a circular economy: **a circular economy itself involves a whole rethinking and resetting of an entire system.**

Rethinking can be applied to any sector and practice; it involves a change in how practices are executed in such a way that they are **more circular.**

An example:

- **Agriculture** → one of the most significant sources of waste and pollution nowadays → rethinking it in a way that its environmental impacts can be minimized, if not depleted; *manure management* as an example of rethinking.

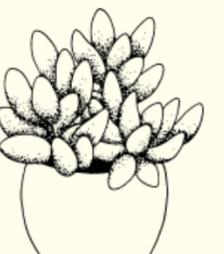
In a circular way of thinking, manure can be used to produce electricity and heat (Degórski, 2017).



Rethinking the approach of **producers** and **consumers**;

An example:

- **Clothing industry** → low quality clothing items have a very short life span and are made using harmful substances for the environment; high quality clothes have a longer life, and can be used again → a change in the purchasing habits will lead to:
 - a lower demand for low-quality textile products,
 - thus decreasing the consumption and spread of environmentally harmful substances;
 - This will contemporaneously lead to a decrease in the discard of textiles products (Szewczyk, 2017).



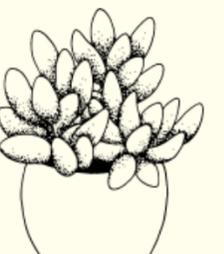
Good rethinking practice/example:

Water is an extremely valuable and precious resource that needs to be used consciously and, therefore, needs to be protected.

→ this requires a whole rethinking of the use of water:

E.g., in a household, *grey water* can be a valuable alternative → the water that is used for washing clothes.

By collecting it, it can be used in the toilet, where it will be discharged into the biological treatment plant, a sewage that allows its treatment; once treated, it will end up in a tank and used for watering the garden.



5.1.9 Refuse

Refuse in a circular economy can be applied both to different manufacturing industries as well as to households → household refuse accounts for a significant percentage of its total amount.

- The **TFL** (transport, forwarding, logistics) industry → negative environmental impact → operation of recovery logistics, based on the PDCA (plan-do-check-act)(Golba and Toruń, n.d.).

Images' source: Canva

Different legal acts in the EU that regulate **refuse management**;



Types of refuse:

- **Municipal refuse;**
- This type of refuse can be prevented in many ways; e.g. financial incentives that promote less refuse, such as environmentally friendly packaging. Two directives address this refuse:
 - *Refuse Framework Directive (75/442/EEC)*, the act establishing the general framework for conducting refuse management. Priority: refuse prevention.
 - *The Landfill Directive (99/31/EC)* has extremely significant effects on the organization of the municipal refuse management system. It sets strict operational and technical requirements for refuse landfills in order to reduce their negative environmental impact.
- **Agricultural refuse;**
 - Agricultural production generates **various types** of refuse, which depend on different variables (e.g. the kind of production in the farm, their quantity within the volume of production etc.)(Kostuch, 2019);
 - Most refuse produced on a farm has a high content of **valuable nutrients** → improves soil fertility and increase crop yield (ibid).
 - Various **biological** and **chemical processes** are used to process organic refuse from agriculture and the agri-food industry.



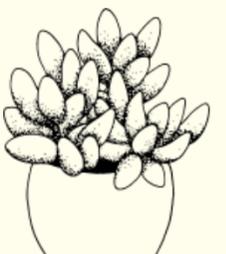
- **Refuse segregation;**

- Segregation of municipal refuse means the waste generated in households, i.e. waste directly related to non-industrial human activity. Municipal refuse is also called household waste.

Good rethinking practice/example:

Within 5 years, the small rural municipality of Palarikovo, Slovakia, managed to reduce the amount of mixed municipal refuse deposited at the landfill by 70% (Guła, 2010).

Their key to success: *selective refuse collection, home composters and environmental education.*



5.2 Exercise

1. According to the Circular Economy hierarchy of practices, which one is the most preferred method?

- Reuse
- Repair
- Remanufacture

2. Repair is about:

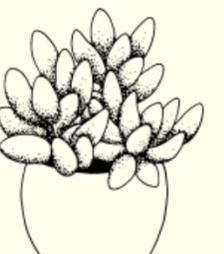
- Fixing the faulty part of a product and restoring it to a usable condition
- Recycling a product
- Remanufacturing products to improve their quality

3. Rate the following statement: “Some of the advantages of the repair method are: reducing waste, fighting about premature obsolescence of objects, raising public awareness of environmental problems linked to waste and overconsumption”.

True
False

4. Repair is beneficial to conserve:

- Energy
- Materials
- Water
- All of the above



5. The main point of a “Repair Cafe” is that:

- The members of the meeting send broken objects to their volunteer fixers
- The members of the meeting repair broken objects themselves
- The members of the meeting just talk about what could be done in terms of repair

6. What you can do with waste? Choose the best alternatives.

- Reduce, Reuse, Recycle
- Reduce, Repurpose, Recover
- Refurbish, Repurpose, Recover

7. What can you do with a PET (plastic bottle) using the following methods?

- Repurpose
- Reuse
- Upcycling

Think about it, and give some examples of items that can be created for each method.

8. Can trash be used to create energy?

- Never
- Only the recyclable materials
- Only the non-recyclable materials
- Always



9. According to the EPA, what kinds of materials are commonly recycled?

- Paper, glass, plastic, metal, batteries, and compostable materials
- Paper, glass, plastic, batteries, and metal
- Glass, plastic, metal, and compostable materials
- Paper, plastic, metal, and batteries

10. How do you believe the obstacles to Repair could be overcome?

.....

11. In Reuse:

- Broken products are repaired
- End-of-life products are put back into service
- End-of-life products are recycled

12. Rate the following statement: “Reuse and recycling are the same thing”.

True
False



13. One of the problems of reuse is that (more than one answer can be selected):

- The broken components are often very expensive or unavailable
- Sorting and preparing items for reuse takes a long time
- It requires special skills

14. Rate the following statement: “Bio-ethanol is a profitable concept to removing residue from the farm production waste stream ”.

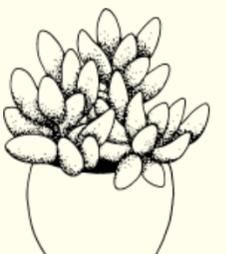
True
False

15. Rate the following statement: “The reuse method works best for cheap or frequently used products”.

True
False

16. The reduce concept leads to (more than one answer can be selected):

- Increasement of spending
- Saving money
- Environment protection



17. Rethinking means:

- Meditation on own life
- Changing the approach to the use of various products and practices
- Thinking more about income

18. The use of a vessel for rain water collection deploys which of the following practices?:

- Rethinking practice
- Refuse practice
- Recycle practice

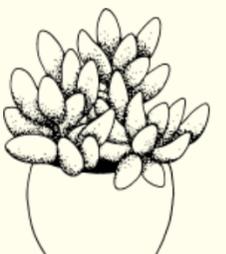
19. How do refurbishment and remanufacture differ?

20. The use of “grey water” in a household deploys which of the following practices? (more than one answer can be selected):

- Reuse
- Reduce
- Recycle

21. The practice of making house waste segregation fulfils the assumptions of which of the practices below? (more than one answer can be selected):

- Refuse
- Reduce
- Rethink

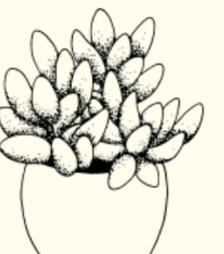


22. Taking into consideration what you have learned so far, and reflect on this quote:

“The goods of today are the resources of tomorrow at yesterday’s
resource prices”
(Walter Stahel)

Answer to the following questions:

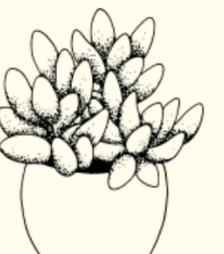
- How does that work?
- Are there any existing examples of this already?



23. Think about a product that we use in our everyday life; for instance, our phone.

Reflect on each stage of the lifecycle of this product: from extraction, to manufacturing, transportation, use and, finally, end of life.

Once you have reached the end of life, find alternatives which fit with the circular economy principles.



Recap of Module 5

10 Circular Practices



Why having circular
practices



Recap of the
practices

Do you have questions so far?

MODULE 6

TIPS AND EXAMPLES ON HOW TO IMPLEMENT A CIRCULAR ECONOMY



6.1 Good practices and successful stories on an international level

Introduction

- Circular economy business models are rapidly **growing**;
- They range from completely new business models to circular approaches in traditional business;
- The transition to a CE will catalyse changes in businesses at very **different levels** → need to use systems thinking to understand the transition;
- **Classification** of the case studies under certain topics.



Kalundborg Symbiosis

Category: Industrial symbiosis

- “The world's first functioning example of industrial symbiosis. [...] the symbiosis is based on **public-private partnerships**, with **exchanges** of **energy**, **water** and **materials** in **closed loops**” (Effective industrial symbiosis, n.d.).
- Purpose: “[...] to create loops of technical or biological materials while minimising the leakage and waste in the loops - demonstrating some key parts of a circular economy, at a local scale” (ibid).

MUD Jeans

Category: Access over Ownership, Product Life Extension

[Video](#): 0.40-2.12



Cora Cup

Category: Product life extension

A sustainable period care option
→ a reusable solution to avoid creating big amounts of waste due to the use of descartable sanitary products.

They offer menstrual cups and other reusable options such as period underwear.

Re-Tek

Category: Refurbishment, Reverse Logistics

- “Re-Tek provide reverse logistics and data destruction services for redundant IT equipment.
- Refurbishing equipment for re-sale or donation to charitable causes, Re-Tek divert equipment from energy hungry recycling processes,
- extend the life of the asset and
- minimise environmental impact”
(Establishing a reverse supply chain for electronics, n.d.).



Toast Ale

Category: Biological Cycle

[Video](#)

The City of Phoenix Clean Palm Program

Category: Biological Cycle, Cascade

[Video](#)

Piñatex

Category: Biological Cycle, Cascade, Supply Chain

[Video](#)

Superuse Studios

Category: Cascade, Design

“[Villa Wepeloo](#) is a house in the Netherlands constructed from 60 percent salvaged material” (Finding and utilising 'waste' materials for construction purposes, n.d.).



6.2 Exercise/roundtable

Introduction

PART 1

Read about these two business models, compare and analyse them.

Beyond Coffee - Coffee grounds into mushrooms (DENMARK)	Kaffe Form - Coffee cups made from coffee grounds (GERMANY)
http://www.beyondcoffee.eu/	https://www.kaffeeform.com/en/story/
<p><i>“When you make coffee, you only use 0.2% of the coffee's nutrients. Only the coffee aroma ends up in the coffee you drink. The remaining 99.8% are disposed as coffee grounds. That is a waste of resources! Instead of disposing the coffee grounds, Beyond Coffee collects it. We use it to grow delicious oyster mushrooms. Because the oyster mushroom loves coffee grounds.”</i></p>	<p><i>“A bicycle courier collective gathers used coffee grounds from selected cafes and roasteries in Berlin and then brings them to a social workshop. There, the grounds are dried and preserved. At small plants in Germany, the material is then compounded and shaped into coffee cups. Once back in the social workshop in Berlin, the cups receive their final polish, are packaged, and sent to cafes, shops, and end customers.”</i></p>

PART 2

Read the [article](#) “*Reusable coffee cups life cycle assessment and benchmark*” and discuss the results presented with your peers.

Reflect on how “the best” product solutions highly depends on the posterior use.



Recap of Module 6

Tips and examples on how to implement a circular economy



Circular business
models in modern times



International case
studies

Do you have questions so far?

MODULE 7

WORKSHOP

HOW TO IMPLEMENT CIRCULAR
PRACTICES AIMED AT UPCYCLING A

PRODUCT



7.1 Introduction

What is **upcycling**?

It entails the “reuse (discarded objects or material) in such a way as to create a product of higher quality or value than the original” (Lexico, n.d).

Upcycling in the circular economy context means:

- **Reusing** materials and **adding** extra value;
- **Producing** new products.

It is a **form** of recycling, but it differs from it.

Example of business that works with upcycling: *Geetanjali Woollens*.



Benefits of upcycling

Environmental:

- It prevent sending materials to landfill;
- Reduced air pollution;
- It extends the lifetime of the used product components or materials, with minimal use of natural resources;
- Reduced energy consumption;
- Reduced manufacturing costs.

Social and economic:

- It saves money and promotes creativity;
- It provides an alternative of dealing with different types of waste;
- It creates business opportunities.



7.2 Workshop

Let's start!



MODULE 8

AREAS THAT ARE EXPECTED TO GROW IN A CIRCULAR ECONOMY CONTEXT



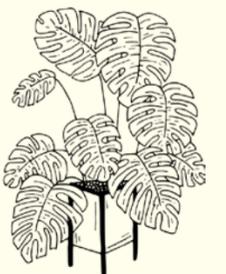
8.1 How does your sector look like right now? How can it become more circular?

Introduction

A circular economy can be applied to **any** sector. However, some present **more** relevant opportunities than others.

“The Circular Economy Action Plan” focuses on some **key value chains** that pose a sustainability challenge, setting coordinated actions for a CE to develop. It prioritizes the following **key sectors** within a CE (European Commission, 2020a):

- Electronics and ICT;
- Batteries and vehicles;
- Packaging;
- Plastics;
- Textiles;
- Construction and buildings;
- Food, water and nutrients.



Electronics and ICT

How does it look now?

- Electrical and electronic, one of the fastest growing waste streams in the EU → current annual growth rates of 2%;
- It is estimated that **less than 40%** of electronic waste is recycled in the EU (Eurostat, 2016);
- About two in three Europeans would like to keep using their current digital devices for longer (Eurobarometer, 2020).

How can it become more circular?

The Commission will present a 'Circular Electronics Initiative' that will promote longer product lifetimes and include the following actions:

- Regulatory measures for electronics and ICT under the Ecodesign Directive;
- Focus on electronics and ICT as a priority sector for implementing the 'right to repair';
- Regulatory measures on chargers for mobile phones and similar devices;
- Improving the collection and treatment of waste electrical and electronic equipment (Directive 2012/19/EU);
- Review of EU rules on restrictions of hazardous substances in electrical and electronic equipment (Directive 2011/65/EU) and provide guidance to improve coherence with relevant legislation, including REACH (EC Regulation No 1907/2006) and Ecodesign.



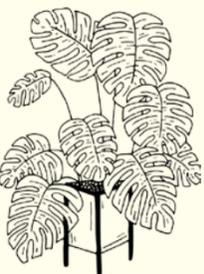
Batteries and vehicles

How does it look now?

- Electrical Sustainable batteries and vehicles underpin the mobility of the future;
- This year the Commission will propose a new regulatory framework for batteries.
- This legislative proposal will build on the evaluation of the Batteries Directive (Directive 2006/66/EC) and the work of the Batteries Alliance with the consideration of the elements listed on the right:

How can it become more circular?

- Rules on recycled content and measures to improve the collection and recycling rates of all batteries, ensure the recovery of valuable materials and provide guidance to consumers.
- Addressing non-rechargeable batteries;
- Sustainability and transparency requirements for batteries;
- The Commission will also propose to revise the rules on end-of-life vehicles (Directive 2000/53/EC);
- The forthcoming Comprehensive European Strategy on Sustainable and Smart Mobility will look into enhancing synergies with the circular economy transition.



Packaging

How does it look now?

- The amount of materials used for packaging is growing continuously.

How can it become more circular?

The Commission will review Directive 94/62/EC27 (European Commission, 1994) to reinforce the mandatory essential requirements for packaging to be allowed on the EU market and consider other measures, with a focus on:

- reducing (over)packaging and packaging waste;
- driving design for re-use and recyclability of packaging;
- considering reducing the complexity of packaging materials.



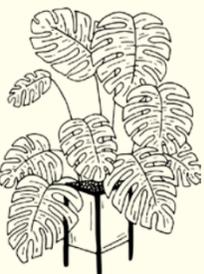
Plastics

How does it look now?

- The EU Strategy for Plastics in the Circular Economy (European Commission, 2018) has set in motion a comprehensive set of initiatives responding to a challenge of serious public concern;
- However, as consumption of plastics is expected to double in the coming 20 years, the Commission will take further targeted measures.

How can it become more circular?

- The Commission will propose mandatory requirements for recycled content and waste reduction measures for key products;
- In addition to measures to reduce plastic litter, the Commission will address the presence of microplastics in the environment;
- Development of policy framework on sourcing, labelling and use of bio-based plastics, and on the use of biodegradable or compostable plastics;
- The Commission will ensure the timely implementation of the new Directive on Single Use Plastic Products (EU Directive 2019/904) and fishing gear to address the problem of marine plastic pollution while safeguarding the single market.



Textiles

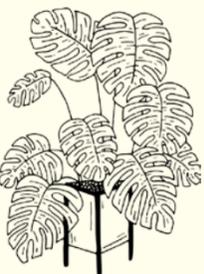
How does it look now?

- Textiles are the **fourth highest-pressure category** for the use of primary raw materials and water, after food, housing and transport, and fifth for GHG emissions (EEA, 2019);
- It is estimated that less than 1% of all textiles worldwide are recycled into new textiles (Ellen McArthur Foundation, 2017);
- 60% by value of clothing in the EU is produced elsewhere.

How can it become more circular?

The Commission will propose a comprehensive EU Strategy for Textiles. Set of measures:

- Applying the new sustainable product framework to textiles;
- Improving the business and regulatory environment for sustainable and circular textiles in the EU;
- Providing guidance to achieve high levels of separate collection of textile waste, which Member States have to ensure by 2025;
- Boosting the sorting, re-use and recycling of textiles.



Construction and buildings

How does it look now?

- The sector accounts for about **50%** of all extracted material;
- It is responsible for over **35%** of the EU's total waste generation (Eurostat, 2016b);
- GHGs emissions from material extraction, manufacturing of construction products, construction and renovation of buildings are estimated at **5-12%** of total national GHGs emissions;
- Greater material efficiency could save 80% of those emissions (Hertwich et al., 2020).

How can it become more circular?

- By ensuring coherence across the relevant policy areas;
- By promoting circularity principles throughout the lifecycle of buildings;
- Promoting initiatives to reduce soil sealing, rehabilitate abandoned or contaminated brownfields and increase the safe, sustainable and circular use of excavated soils;
- Through the action of the 'Renovation Wave' initiative announced in the European Green Deal.



Food

How does it look now?

- The food value chain is responsible for significant resource and environmental pressures.

How can it become more circular?

- The Commission will propose a target on food waste reduction, as a key action under the EU Farm-to-Fork Strategy;
- The Commission will consider specific measures to increase the sustainability of food distribution and consumption;
- The Commission will launch the analytical work to determine the scope of a legislative initiative on reuse to substitute single-use packaging, tableware and cutlery by reusable products in food services.



Water and nutrients

How does it look now?

- The world water market is growing rapidly;
- It is estimated that a **1%** increase in the rate of growth of the water industry in Europe could create up to 20.000 new jobs (European Commission, 2020);
- At present, about **1 billion cubic meters** of treated urban wastewater is reused annually, which accounts for approximately **2.4%** of the treated urban wastewater effluents and less than **0.5%** of annual EU freshwater withdrawals (ibid).

How can it become more circular?

- The new Water Reuse Regulation will encourage circular approaches to water reuse in agriculture;
- By facilitating water reuse and efficiency;
- By developing an Integrated Nutrient Management Plan, with a view to ensuring more sustainable application of nutrients and stimulating the markets for recovered nutrients;
- By reviewing directives on wastewater treatment and sewage sludge.



Recap of Module 8

Areas that are expected to grow in a circular economy context



Areas expected to
grow in a CE context

Do you have questions so far?

MODULE 9

FINDING A CAREER PATH WITHIN THE CIRCULAR ECONOMY



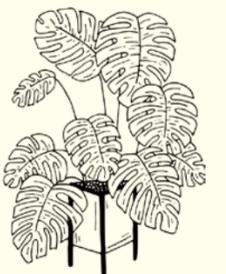
9.1 Areas with the highest growth and employment potential within a CE

Circular economy means an unprecedented paradigm, and new opportunities → necessary for employers and employees to adopt new perspectives and skills.

The Key Product Value Chains mentioned in 8.1 can give an idea of the main areas to take into consideration.

Circular jobs regarded as all jobs contributing to the so-called **DISRUPT** framework (Dufourmont and Goodwin Brown, 2020); they are either core circular jobs or enable them:

- **D**esign for the future - enabling job;
- **I**ncorporate digital technology - enabling job;
- **S**ustain and preserve what's already there - core job;
- **R**ethink the business model - enabling job;
- **U**se waste as a resource – core job;
- **P**rioritise regenerative resources - core job;
- **T**eam up to create joint value - enabling job.



- **Recycling, repair and up-cycling, waste management;**

Labour intensive CE transition. The transition towards a CE does not mean the sudden disappearance of waste → jobs related to waste management of high importance.

- **Design, engineering and architecture;**

Up to 80 % of products' environmental impacts are determined at the design phase (European Commission, 2020 a) → importance of eco-design.

- **Resources, food and water management;**

A shift to more sustainable resources is needed, thus this area will provide new opportunities.

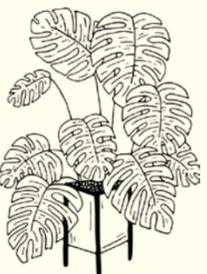
Agriculture and stock breeding → high need of water and responsible for high waste generation → necessary to reduce raw material loss.

- **IT and digitalisation;**

The tracking and optimisation of the use of resources, and the strengthening of connections between supply chain actors, will highly benefit from digital and online platforms and technologies.

- **Management and public sector.**

All areas of growth and jobs will require management and monitoring. The public sector is the biggest purchaser of green solutions, which is beneficial for the European Commission (ibid).



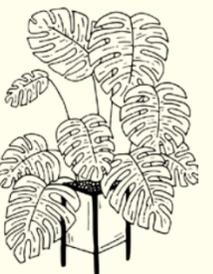
9.2 Job profiles that are expected to be more demanded

Considering the five main areas just described, several job profiles can be presented.

- Recycling, repair and up-cycling, waste management.
 - Processes such as reverse logistics, resource and waste sorting, the cleaning of components in the refurbishment of products;
 - Repairing;
 - Drivers;
 - Managerial roles.

There will be both direct and indirect employment.

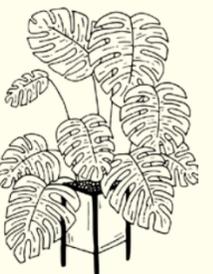
E.g. packaging and batteries are two of the Key Product Value Chains (European Commission, 2020a) → the recycling of those and their materials is a big employment source.



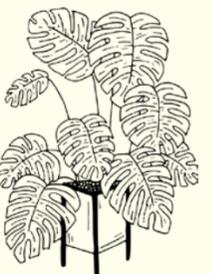
- Design, engineering and architecture.

Some of the Key Product Value Chains (European Commission, 2020a):
packaging, plastics, textile and buildings.

- Environmentally conscious designers;
 - Green engineers and architects.
- Resources, food and water management.
 - Process operators → circular and sustainable management of water as a resource, and food production (as well as for food for livestock);
 - Agronomic advisors → support healthy soil nourishment with organic fertiliser from composted manure and crop remnants. They combine strong interpersonal skills with ecological knowledge.



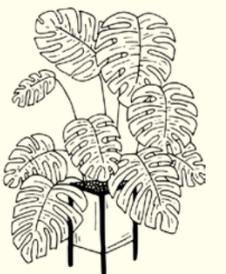
- IT and digitalisation.
 - Building information managers → integration and interpretation of virtual information management systems;
 - Data analysts;
 - Software developers → software for the tracking, supervision, and support;
 - Repairing roles for electronic devices.
- Management and public sector.
 - Decision-making roles → negotiations and organisation of the CE transition;
 - Public workers who must negotiate, bring dialogue with the citizens and organise calls to find opportunities.
 - E.g. managers, public procurers, civil servants, regional and national practitioners, advisors, demand planners.



9.3 Skills that are expected to be more demanded

Two types of skills:

- **Soft skills** → those comprising attitudes or intuitions. They entail the communication with individuals, management, decision making processes, conflict resolution abilities. They can be grouped as (European Commission, 2018):
 - **Communication skills;**
 - **Creativity skills;**
 - **Analytical skills.**
- **Hard skills** → those related to one's expertise; the skill set required for a job. Hard skills are acquired by one's qualifications, training or experience (Doyle, 2020).



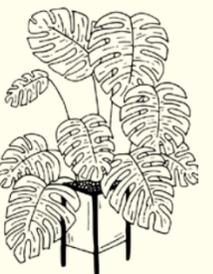
- Recycling, repair and up-cycling, waste management.

The jobs in this area require **hard skills**, since they will probably be labour intensive:

- Organisation and machinery use comprehension, which come from a practical use and training;
- Technical skills (e.g. when repairing/upcycling depending on the materials or products);
- Note: physical endurance, as those will entail practical and physical jobs.

For all these jobs, **soft skills** are also important:

- Teamwork abilities;
- Organisational skills;
- Management and leadership skills;
- Interpersonal skills.



- Design, engineering and architecture.

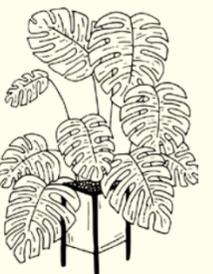
Hard skills, the most important ones. However, **creativity** plays an essential role, as well as communication skills.

For designers → important to have a strong training foundation, and to provide innovative solutions.

For engineers/architects → hard skills are the most important ones, since it is a more technologically driven job and that requires elevated complex-problem solving skills.

- Resources, food and water management.

- **Hard skills** are the key. Specific technical knowledge is indeed necessary;
- **Soft skills** are also essential to interact with the involved entities/individuals, and to solve complex problems/to find innovative solutions.



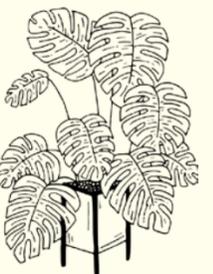
- IT and digitalisation.

Hard skills are primarily needed, such as:

- Mechanical skills;
- Cloud computing;
- Scientific computing;
- Database management.

For managerial roles, **soft skills** are also fundamental → essential good communication and organisation skills.

- Management and public sector.
 - **Soft skills** have a relevant importance:
 - Communication skills;
 - Leadership and managerial skills;
 - Ability to work in teams;
 - Interpersonal skills.



Recap of Module 9

Finding a career path within the circular economy



Areas with the highest growth and employment potential within a CE



Job profiles in a CE



Soft and hard skills

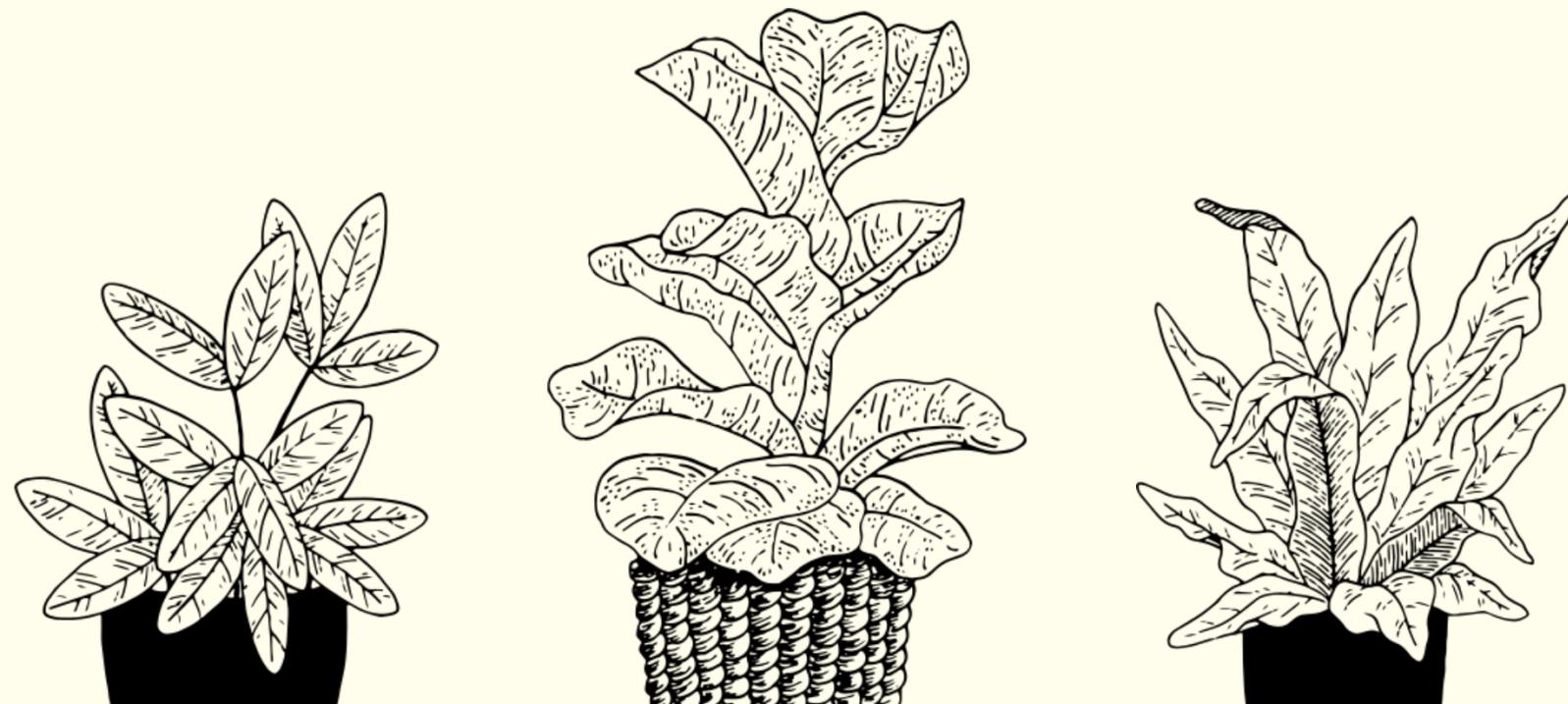


Skills in CE jobs

Do you have questions so far?

MODULE 10

BASICS OF ENTREPRENEURSHIP



10.1 Basics of entrepreneurship



What is entrepreneurship?

Difficult to give one universally acceptable definition of **entrepreneurship**.

“The entrepreneur always searches for change, responds to it, and exploits it as an opportunity.”

- The term first appeared at the end of 18th – start of 19th century by Jean Baptiste Say: entrepreneurship defined **a person investing resources in an unknown and future**. He believed that an entrepreneur **transferred capital from an area with lower profitability to an area with higher efficiency and profit** (Piasecki, 1998).

Peter Drucker

According to the definition of the European Council, entrepreneurial competences include the **ability to seize opportunities and ideas, and transform them into a value for others** (Zalecenie Rady Unii Europejskiej w sprawie kompetencji kluczowych w procesie uczenia się przez całe życie , 2018).

According to the "European reference framework" (Zalecenie Parlamentu Europejskiego i Rady w sprawie kompetencji kluczowych w procesie uczenia się przez całe życie, 2006), the following **characterize an entrepreneur:**

- **Necessary knowledge**, which encompasses “the ability to identify available personal, professional or business opportunities” (ibid);
- **Entrepreneurial skills**, which relate to practical project management and include, for example, planning, preparing reports etc.;
- An **entrepreneurial attitude**, characterized by sense of initiative, proactiveness, independence and innovation, both professionally and in the personal sphere.

*“Being an entrepreneur is a mindset.
You have to see things as
opportunities all the time”*

... Are we born entrepreneurs or?

Soledad O'Brien



Who is an entrepreneur?

“An entrepreneur is the person who sees a problem in the world and immediately focuses on creating the solution”(Ferreira, 2020).

Entrepreneurs positively contribute to the society by (ibid):

- Creating jobs;
- Innovating;
- Making a change;
- Boosting national economies.

There are different kinds of entrepreneurs.

Social entrepreneurship

Developed in the UK in the late 1970s, it rose in opposition to the traditional commercial enterprise (Barone, 2020).



The definition of "social enterprise" includes two attributes:

"entrepreneurship" and "socialization"



An organization that conducts an economic activity in an innovative and effective way, and thus produces products or services by creating added value (Hausner, 2008).



The basic resources that the company uses, i.e. social capital. Social entrepreneurship uses the social capital resulting from social ties and interpersonal contacts based on trust, communication and cooperation; at the same time, its activity leads to the multiplication of the resources of this capital and its mobilization (ibid).

Prime goal of a social enterprise: social integration on the scale of a given local community, and counteracting social exclusion through professional and economic activation (ibid).



A social entrepreneur operates with the intention to trigger a positive change in the society from a social point of view. Therefore, the main driver is **not the pursuit of profits, but social objectives** (Barone, 2020).

Example of social entrepreneur: the 2006 Nobel Peace Prize laureate Muhammad Yunus, founder of the Grameen Bank.

Ecopreneurship

It must be explained in the context of the increasing environmental problems in the world.

"Ecopreneurs are entrepreneurs whose business efforts are not only driven by profit, but also by a concern for the environment."

(Schuyler, 1998)



An ecological entrepreneur can run an ecological company in various ways (e.g. by choosing ecological products; by using ecological solutions, systems, raw materials etc.).

A **successful** ecopreneurship is based on three elements (Kainrath, 2009):

- **Eco-innovation** → creating innovative solutions to environmental problems;
- **Eco-opportunity** → identifying innovations opportunities that will help to solve environmental problems and to achieve sustainable development in business;
- **Eco-commitment** → providing and implementing policies that will help create commitment towards focusing on green activities.



10.2 Starting a business in Belgium

Introduction

In order to **set up** a business in Belgium, one needs:

- To choose a legal status: sole trader/sole proprietorship (natural person) or company (legal person);
- To set up the company by depositing and registering a deed of incorporation;
- To register the company at a recognised business counter for your registration in the Central Databank for Enterprises (KBO). This counter checks whether the company meets the requirements set. After registration you will receive a unique company number. This number consists of ten digits and is the same as your VAT number;
- To register and activate your VAT number and fulfill the administrative requirements;
- To register a customs identification and EORI number;



- To join a social insurance fund for the self-employed and pay social security contributions;
- To join a health insurance fund to be eligible for sickness and disability benefits;
- To take out the minimum required insurance policies;
- When recruiting staff: join a social secretariat and take the necessary steps to register with the National Organ for Social Security (RSZ);
- To open a current account with a financial institution based in Belgium;
- Depending on the region, a certificate of basic knowledge of business management and accounting could be required. The Federal and regional governments foresee in several initiatives for mentoring, coaching and education in this respect.
- Depending on the sector you will launch your business in, you may require a number of certified skills or competences. This is mainly the case for professions in the construction sector, food industry, care of persons and the sale and maintenance of motorised vehicles.



Requirements to set up a business in Belgium:

- To be of legal age (usually 18);
- To enjoy his/her civil rights (e.g. right to perform public offices or relations; wear medals of honour or use nobility titles, testify as witness or expert, to run for political office, to be in the military, to vote, etc.);
- To be legally competent;
- Citizenship: people with Belgian, EU, Liechtenstein, Norway, Iceland and Switzerland citizenships can start a business without any problem. Other nationalities need a residence permit and a professional card from the business counter. When you are not living in Belgium, you will have to apply for your professional card at the Belgian diplomatic or consular post in the country where you are staying;



Types of enterprises

Type of business	Description	Specific requirements or rules
Liberal profession	<p>Independent professions that provide intellectual services or deliver certain goods.</p> <p>Some examples:</p> <ul style="list-style-type: none"> • accountant, auditor, tax consultant, ...; • legal professions: lawyer, notary, bailiff, ...; • construction sector: surveyor, architect, real estate agent,...; • health care: doctor, nurse, pharmacist, physiotherapist, psychologist,...; • other intellectual services: car expert, journalist, etc. 	<ul style="list-style-type: none"> • Be the holder of certain diplomas; • An existing further training obligation is often present; • Respecting the deontological code; • Work under supervision of professional organizations that are also called “order, institute, federal council, committee, or chamber.” These professional organizations check whether you meet the conditions for exercising the profession involved.
Sole trader	<p>This is the most common form of business among starters. You do not need a separate legal entity and therefore act as a natural person. The sole proprietorship / sole trader company is set up by one natural person, who has unlimited liability.</p>	<ul style="list-style-type: none"> • No need to draw up articles of association; • No minimum starting capital required; • Usually (depending on turnover) simplified accounting is sufficient; • Profit made is taxed through your personal income tax: you do not file a separate tax return for your business; • The assets for the professional activity are not separated from the personal assets of the entrepreneur. The entrepreneur is therefore responsible for the obligations of his company with all his property, which is not without risk, for example in the event of the bankruptcy of an important customer. The partner's assets may also have to be used to pay the company's debts, unless a marriage contract provides otherwise; • The risks to the primary residence are mitigated by a measure that may make the self-employed person's primary residence not subject to attachment if certain conditions are met. That protection only applies to the self-employed person's principal residence, or in other words the building where he actually resides for most of the year. The protection is not automatic, the self-employed person must have a declaration of seizure drawn up by a notary.
Public limited company (NV/SA)	<p>A company in which at least two shareholders are willing to invest. This form of company is mainly chosen by large companies, but also by SMEs. This form of company is preferable when a lot of capital is needed, because it can appeal to new, foreign capital or can appeal to savers. This allows for fast growth.</p>	<ul style="list-style-type: none"> • Emphasis is mainly on the financial contribution of the shareholders; • Completely separate from its shareholders. Their liability is therefore limited to their investment. The shares can generally be transferred easily and without restriction. It is a company form that has less of a familial character; • Must be established by notarial deed; • Starting capital is at least 61,500 euros. • More administrative requirements in terms of accounting and decision making.



Type of business	Description	Specific requirements or rules
Private limited liability company (BVBA/SPRL)	A company formed by one or more persons who only commit themselves to what they invest. The rights of the partners can only be transferred under certain conditions. This company form can be established by a single natural person. It is generally considered to be the most appropriate legal form for a small or medium sized company.	<ul style="list-style-type: none"> • Company has its own legal personality and is therefore a legal person other than the shareholders or the sole shareholder; • Company has its own equity; • Limited liability: shareholders only commit to their investment. In the event of bankruptcy, creditors cannot sue the private assets of the shareholders. However, there are exceptions to this principle for the shareholders who are the founding partners; • Articles of association must be drawn up by notarial deed; • No minimum requirement for the initial capital, but it must be sufficient taking into account the activity of the company.
Co-operative company with limited (CVBA/SCRL) or unlimited liability (CVOA/SCRI)	A company in which the members work on shared objectives and share common values. It is a specific form of commercial company characterised by a variable number of partners and capital. In the event that the planned entrepreneurial project is part of the social economy, the cooperative legal form is the only one that allows the application for recognition as a social enterprise.	<ul style="list-style-type: none"> • Requires at least three founders; • Must be established by notarial deed; • Limited liability: the shareholders are only liable for the amount of their investment; • The main objective is to meet the needs of its shareholders or third interested parties and / or to develop their economic and social activities, including by entering into agreements with them on the supply of goods, the provision of services or the execution of works in the context of the activity that the CV carries out or has performed; • Investment the contribution in kind is the subject of a report drawn up by a company auditor (art. 6: 8 of the Companies and Associations Code); • The cooperative finality and the values of the CV are described in the articles of association and, where appropriate, supplemented by a more detailed explanation in internal regulations or a charter.
General partnership (VOF/SNC)	A company established by jointly and severally liable partners. Its corporate purpose is exercising a civil or commercial activity under a company name. Every decision must be made unanimously.	<ul style="list-style-type: none"> • No imposed minimum capital; • Its existence is bound by the fate of the partners; • A company form with few formalities; • Partners remain jointly and severally liable for the obligations of the company.
Ordinary limited partnership (GVC/SCS)	This company type has working and silent partners. The working partners are involved in the management. The silent partners are financial backers but have no say in the management.	<ul style="list-style-type: none"> • Working partners participate in the board, while silent partners are backers but have no say in the board; • No imposed minimum capital; • Only the working partners are unlimitedly liable for the debts and losses of the company. Silent partners are only liable for the amount their investment, unless they have (co)-managed the company.
Limited partnership with share capital (CVA/SCA)	A company established by one or more jointly and severally liable partners, referred to as managing partners, and one or more sleeping partners who provide a specific investment.	Due to a change in the Company and Associations Legal Code in 2019, this company form is phasing out. It is no longer possible to establish this type of company. Now NV/SA is what you should opt for.



Type of business	Description	Specific requirements or rules
<p>Non-profit organisation (VZW/ASBL)</p>	<p>A group of natural persons or legal entities with a selfless purpose. The ASBL comprises at least three people.</p>	<ul style="list-style-type: none"> • To be established by minimum private deed; • Members may not receive any material benefits/profit from the association; • Obligatory to draft articles of association “statutes”, setting out the basic principles of the association; • General Assembly is required. This organ has to meet at least once every year in order to approve the financial accounts, take decisions such as changes in the statutes, nominate or reject members or directors; • Board of Directors is required. This organ has to meet at least once every year to prepare the annual accounts and budget. The Board also represents the association in and out of court; • Keep an updated list the membership; • A non-profit organization must not pay taxes on its income from its activities. However, as compensation, the government has subject non-profit organizations to a few other taxes: the property tax and the legal entity tax; • Small non-profit organizations submit their annual accounts to the registry of the commercial court of their district; other / larger non-profit organizations at the National Bank of Belgium; • Small non-profit organizations may do a simplified accounting. Double-entry accounting is mandatory for large associations. Very large non-profit organizations must allow additional checks on their double-entry accounting by appointed supervisory directors/auditors.
<p>International non-profit organisation (IVZW/AISBL)</p>	<p>A grouping of natural persons or legal entities with a non-profitable international purpose.</p>	<ul style="list-style-type: none"> • Company seat must be established in Belgium; • The statutes representing the organisation's principles must be drawn up by notary deed; • The law does not require a minimum number of members, but an association means that there are at least two members. However, to avoid paralysis, it is recommended that the association is composed of at least three people; • Establishment of a Governing Body and General Management Body is obligatory. The statutes determine the form, composition, working method and powers of these two bodies; • Small international non-profit organizations submit their annual accounts to the registry of the commercial court of their district; other / larger organizations at the National Bank of Belgium; • Small international non-profit organizations may do a simplified accounting. Double-entry accounting is mandatory for large associations. Very large organizations must allow additional checks on their double-entry accounting by appointed supervisory directors/auditors.



Financial support

- There are various sources of financing for a company;
- The own resources are the resources that you can personally invest when starting your business (savings, goods in kind ...);
- However, in some cases, external resources are necessary. These external resources can be financed by a bank loan, based on a business plan.

The [recognised business counters](#) can assist you with advice or refer you to the most suitable partners to finance your project.

The **three regions** also propose various aids and subsidies to help finance your business, depending on the sector of activity:

- [Brussels Capital region](#);
- [Flanders](#);
- [Wallonia](#).



10.2 Starting a business in Poland

Introduction

In Poland, most businesses are **micro, small and medium-sized enterprises**.

Establishing a new company in Poland has been greatly simplified in the last dozen or so years.

Nevertheless, the mere administrative registration of a company is just the beginning of the adventure to starting your own business.

How to start?

After determining how you want to run your own business and what you want to do, you must submit an application for entry into the **CEIDG** (Central Register and Information on Economic Activity). It can be done electronically or traditionally, by submitting a document to the municipal office.



In order for a company to be included in the CEIDG register, the following must be provided (Poradnik Przedsiębiorcy, 2020):

- **Company address;**
- **NIP, PESEL** (tax identification number and personal identification number);
- **Activity code** consisting of five characters arranged according to the Polish Classification of Activities;
- **Email address, contact phone number** (voluntarily);
- **Type of taxation;**
- **Business start date;**
- **Bank account details** (Poradnik Przedsiębiorcy, 2020).

Submitting an application for registration of business activity of natural persons (known as CEIDG-1) in the city or commune office is connected with simultaneous notification to **ZUS/ KRUS** (social security), **GUS** (statistic office) and the **head of the tax office**. It is a facilitation for all future entrepreneurs.



After submitting the application for entry into the CEIDG, the entrepreneurs can start their activities (Poradnik Przedsiębiorcy, 2020).

Tax declaration

It is **necessary** to submit information about choosing the form of taxation. The new entrepreneur has four forms to choose from (Poradnik Przedsiębiorcy, 2020):

- **Taxation on general principles using the tax scale** - 17% or 32% - this form does not need to be reported to the tax office, it is granted automatically;
- **Taxation at a 19% flat tax rate** - this should be notified to the tax office; the advantage of a flat rate is its immutability when the income limit is exceeded;
- **Lump-sum tax on registered revenues** - tax pays only on revenue, but not everyone can choose this method of taxation, in this form of taxation it is also not possible to deduct tax deductible costs;
- **Tax card** - an option only for a person who does not use the services of other companies, the spouse does not conduct the same activities and does not employ employees based on a mandate contract or a specific task contract.



Social Security registration and VAT registration

It is necessary to fill in the appropriate form:

- “ZUSZUA”, to register a person who is insured with health and social insurance;
- “ZUSZZA”, if the person is only subject to health insurance.

An entrepreneur starting a business can also take advantage of the so-called **relief for start-up** → the exemption from the obligation to pay social security contributions for the first 6 calendar months from the date of setting up a business (Poradnik Przedsiębiorcy, 2020).

The **VAT-R declaration** is made to register or update your data on Value Added Tax (VAT). Thanks to this, the entrepreneurs can decide whether they want to be an active VAT taxpayer or whether he is released from it pursuant to an act. The form also contains fields needed for registration for making UE transactions (VAT-EU).



Other obligations

Setting up your own business has several advantages, but entrepreneurs have also **numerous obligations**.

The main of them is **keeping accounting in a manner consistent with the applicable law**. Special softwares can help in this (Poradnik Przedsiębiorcy, 2020).



10.2 Starting a business in Romania

Introduction

In order to be able to do business legally, any entrepreneur should have a **registered company**.

It gives to the entrepreneur the **opportunity** to obtain financing, to take credit from the bank, to hire people, to conclude business partnerships, to collaborate in a simple way with suppliers and customers.

In Romania, the person/ group of people who want to start a business can do this according to the **legal regulations** regarding the manner of establishment, registration and the forms on which can be taken by a company, contained in Law 31/ 1990, with amendments (Law no. 163/ 2018).



Before starting your business

You must choose the form of legal organization:

- SRL;
- Limited liability company;
- SRL start-up;
- Individual Enterprise (II);
- Family Enterprise (IF);
- PFA (self employment person).

For the **company registration**, in Romania the request is submitted to the **Trade Register Office** in the area where the registered office of the companies is located. Depending on the type of the company you chose, the submission includes more or less documents that are listed below:



Company registration steps

1. Previous to the company registration, request for verification of availability and / or firm reservation (original) which is submitted to the Trade Register Office;
2. Registration at the Trade Register Office. At this step, the entrepreneur should complete several documents and forms, such as, for instance (Oficiul Național al Registrului Comerțului, 2014):
 - Application-form O.N.R.C (National Office of the Trade Register);
 - Constitutive act (authenticated by a lawyer or notary public) at the elaboration of which it must be clarified, in obligatory way:
 - The main object of activity;
 - Name of the company (with the reservation number issued by the O.N.R.C);
 - Associations / company administrators;
 - The contribution to the share capital of each of the associates.



- Fiscal record of each of the associates and administrators of the company;
- Copy of the deed of ownership over the space where the registered office/ Loan or contract is established;
- Rental of the respective space;
- The agreement of the owners / tenants association;
- Agreement of neighbours (riparian's);
- Copy of the C.I./ Passport of the associates;
- Specimen signature of the administrator (s) of the company;
- Statements of their company associates (authenticated);
- The power of attorney of their associates for the person empowered to submit the file to the O.N.R.C. (Authenticated);
- Proof of depositing the share capital at the bank chosen by the company's associates;
- Statement (O.N.R.C. form) signed by one of the associates.



Other formalities

To register as a new company, the future entrepreneur should deposit a **share capital**.

Furthermore, a payment of judicial fee and stamp duty for company registration is needed.

VAT regulation

Any new company that is established in Romania is **non-paying VAT**.

In order to **become a VAT payer**,

“it is necessary for the company to exceed a turnover threshold (around 300,000 lei) or, if it has not exceeded it, to submit an application for obtaining the VAT status to ANAF.”

(Planul de afaceri, 2017)



Funding

Trough different European and national programmes, any entrepreneur can apply for **funds** to develop its business idea.

To have access to funding, the entrepreneur has to follow several **steps**:

1. Develop your business idea starting from an identified need;
2. Search for a funding programme (like start up nation, Regional Operational Program, Competitiveness Operational Program, National Rural Development Program and Fisheries Operational Program);
3. Search if you are eligible as the applicant;
4. Develop your business plan;
5. Collect all the documents in order to demonstrate that you are an eligible applicant;
6. Submit the project to the responsible authority.



10.2 Starting a business in Spain

Introduction

In Spain, you can start your business with the help of the **Information Center and Business Creation Network (CIRCE)** (Ipyme, n.d.).

The CIRCE system facilitates the creation of your company through agreements and communications with all the organizations and administrations that intervene in the company formation process.

The entrepreneur will only have to fill in the **Single Electronic Document (DUE)**;



CIRCE will automatically carry out all the necessary procedures to establish the company, communicating with all the agencies involved (Tax Agency, Social Security, Mercantile Registry, Notary, etc.).

Types of companies that can be created through CIRCE :

- Individual Entrepreneur (Autonomous);
- Limited Liability Company (SRL or SL);
- Successive Formation Limited Company (SLFS);
- New Company Limited Company (SLNE);
- Community of goods;
- Civil society.

There is the possibility of going to an **Entrepreneur Service Point (PAE)**.



Generals		
Procedure	Description	Organism
Registration in the Census of entrepreneurs, professionals and retainers	Census declaration of commencement, modification or cessation of activity to be submitted for tax purposes by individual entrepreneurs, professionals and companies.	Tax Agency (AEAT)
Tax on Economic Activities	It is a tribute derived from the exercise of business, professional or artistic activities.	Agencia Tributaria (AEAT)
Registration in the special regime of self-employed workers (RETA)	Regime that regulates the Social Security contribution of self-employed workers (individual entrepreneurs), community members and the partners and administrators of some companies	General Treasury of Social Security
Registration of partners and administrators in Social Security regimes	Registration in the corresponding Social Security system in each case will be conditioned to the type of company and / or participation in the share capital.	General Treasury of Social Security
Obtaining and legalizing the Guestbook	Companies are not required to acquire or fill out any kind of book to record the actions of the Labor Inspection.	Provincial Labor Inspection
Legalization of the Book of Minutes, the Register Book of partners, the Book-register of registered shares and the Record book of contracts between the sole partner and the company	The current legislation obliges mercantile companies to keep some record books (of minutes, of partners or of shares) and to make their presentation annually in the Provincial Mercantile Register.	Provincial Commercial Registry
Legalization of the Daily Book and the Inventory and Annual Accounts Book	All businessmen who keep their accounts according to the provisions of the Commercial Code must prepare the following accounting documents: a Daily Book and an Inventory and Annual Accounts Book.	Provincial Commercial Registry
Obtaining an electronic certificate	The electronic certificate makes it possible to sign electronic documents and unequivocally identify the owner of the signature.	Certification authorities



Depending on the activity		
Procedure	Description	Organism
Activity license	Installation and works licenses, activity licenses and operating licenses.	Town halls
Registration in other official bodies and / or registries	Depending on the activity carried out, the start of the activity must be communicated to those administrations, authorities and / or registries.	Other official bodies and / or registries

In case of hiring workers		
Procedure	Description	Organism
Company registration	Registration is the administrative act by which the General Treasury of Social Security assigns the employer a number to identify and control their obligations (contribution account code).	General Treasury of Social Security
Affiliation of workers	Administrative act by which the General Treasury of Social Security recognizes natural persons their inclusion for the first time in the Social Security System	General Treasury of Social Security
Registration of workers in the Social Security Regime	Every employer who hires workers must report the registration in the corresponding Social Security Regime.	General Treasury of Social Security
Registration of employment contracts	This procedure consists of carrying out the legalization or registration of the employment contracts of workers employed by others.	Spanish Public Employment Service
Communication of the opening of the work center	Once the Company is established or decided by the employer to initiate its activity, the opening of the workplace must be notified in order to control the conditions of Occupational Health and Safety.	Regional Employment services (autonomous communities)
Obtaining the work calendar	Companies must expose in each workplace the work calendar, which must be in a visible place.	Provincial Labor Inspection



Complementary		
Procedure	Description	Organism
Registration of distinctive signs	The Distinctive Signs are used in industry and commerce to distinguish the products or services of a company from other competitors in the market.	Spanish office of the patents and brand
Specific Procedures		
Procedure	Description	Organism
Bars, cafes, restaurants and hotel establishments	Opening authorization	General Directorate of Tourism of the autonomous communities
Travel agencies	License title application	General Directorate of Tourism of the autonomous communities
Fixed capital and variable capital investment companies	Authorization of incorporation	General Directorate of the Treasury and Financial Policy (Ministry of Economy and Business)
Industrial activities, repair shops, warehouses for toxic or dangerous substances, manufacturing companies for any product	Industrial Registry	General Directorate for Industry, Energy and Mines of the autonomous communities
Security companies	Registry	Secretary of State for Security (Ministry of the Interior)
Food industries and establishments (No retailers, supermarkets or hypermarkets)	Registry	Regional Health Service
Game material companies (all)	Registry	General Directorate for the Regulation of Gambling (Ministry of Finance)
Construction activities, electrical installations and / or repairs, wood and cork sector and engineering and consulting activities	Business qualification documentation	General Directorate for Industry, Energy and Mines of the autonomous communities
Individuals who are engaged in electrical, gas, air conditioning and pressure equipment installations	Card or certificate	General Directorate for Industry, Energy and Mines of the autonomous communities



10.2 Starting a business in Sweden



Introduction

In spite of its high taxes and living costs, Sweden has:

- The highest survival rate for new companies (74%);
- A considerable number of start-ups (companies that have existed for over 3 years), amounting for 20 start-ups per 1,000 employees (The Atlantic, 2017);
- “Stockholm produces the second-highest number of billion-dollar tech companies per capita, after Silicon Valley” (ibid).

What makes Sweden a fertile ground for business' establishment?

- Several **deregulation processes** in place since the 1990s → the processes culminated in significant tax breaks for starting and owning a business and reduced corporate taxes, for instance;
- The country's collaborative **culture** and **welfare system**.

However, in order to start a new business and profit from this context, **knowing the country's system and particularities** is crucial to achieving success.

Requirements for starting a business in Sweden:

- To be a citizen, to have a temporary or permanent residency, or to be in the process to obtain asylum (coordination number needed);
- To have a reliable financial history and current situation;
- To not be accounted for commercial prohibitions (näringsförbud);
- To be 16 years-old or older.

How to start a business in Sweden (Verksamt.se, 2019):

1. Set your **business idea**;
2. Develop a clear **business plan** and related **financing**;
3. Choose which **type** of business enterprise you want to establish (sole trader business, trading partnership, limited partnership, limited company, economic association);
4. **Register** your business at Swedish Tax Agency;
5. Select the correct **SNI** (Standard Industrial Classification; in Swedish, Svensk Näringsgrensindelning);
6. **Protect** your business and all the related information.





Types of business enterprises (Verksam.se, 2019):

Type of business	Description	Number of owners	Capital requirement	Where to register it	Form of taxation
Sole trader (enskild firma)	<ul style="list-style-type: none">• A sole trader runs and is responsible for the business as a private person;• The business will be identified by your personal identity number;• It is possible, but it is not needed, to register the business with the Swedish Companies Registration Office. By doing so, the business name will be protected in the county in which you are registered.	Only one individual	No	With the Swedish Tax Agency and, possibly, the Swedish Companies Registration Office	F or FA tax (FA tax for income from both the business and employment)
Trading partnership	<ul style="list-style-type: none">• The registration number and business name of the business are obtained through the registration at the the Swedish Companies Registration Office;• The name of a trading partnership is protected in the county in which it is registered;• A “partnership agreement” or “articles of partnership” needs to be established before registering the business with the Swedish Companies Registration Office;• This type of written agreement establishes the agreement of both the partners to operate a trading partnership and sets aspects such as, e.g., the division of labour, the distribution of profits or losses, what happens if a partner wants to leave etc.	At least two individuals or enterprises	No	With the Swedish Companies Registration Office and the Swedish Tax Agency	The partnership: F tax Partners: SA tax (special debited A tax)



Types of business enterprises (Verksam.se, 2019):

Type of business	Description	Number of owners	Capital requirement	Where to register it	Form of taxation
Limited partnership	<ul style="list-style-type: none"> A limited partnership is similar to a trading partnership; What differs is that in a limited partnership, there are two different kinds of partners: general partners (responsible for all the debts of the partnership) and limited partners (responsible only for the capital that they invested in the company). 	At least two individuals or enterprises	Not for a general partner; at least SEK 1 for limited partners	With the Swedish Companies Registration Office and the Swedish Tax Agency	The partnership: F tax Partners: SA tax (special debited A tax)
Limited company (Aktiebolag)	<ul style="list-style-type: none"> Before registering the company, a document called “memorandum of association” is necessary to start the company; This document contains a draft of the articles of association and the shares of the company; Once registered, the limited company will receive a registration number; <ul style="list-style-type: none"> Moreover, the registration provides nationwide protection of the company name. 	At least one individual or enterprise	Minimum of SEK 25,000	With the Swedish Companies Registration Office and the Swedish Tax Agency	The company: F tax The owners: A tax (employees)
Economic association	<ul style="list-style-type: none"> It is started by the members of the association, who also write the regulations; It based on democracy, commitment and responsibility. An association “is created to enable members to benefit financially from the association’s operations” (Verksam.se, 2019); Normally, every member gets to have a vote at the general meetings of the association; Once registered with the Swedish Companies Registration Office, economic association will receive a registration number. Moreover, the registration provides nationwide protection of the company name. 	At least three individuals or enterprises	In the form of a cash or work investment	With the Swedish Companies Registration Office and the Swedish Tax Agency	The association: F tax The members: A tax (employees)

Other important procedures:

- To open a bank account;
- To have an insurance;
- To establish a bookkeeping system and learn about the taxation system.

Important dates for taxes in Sweden:

- **2nd May** deadline for **declaration**;
- **12th May** **VAT declaration** deadline.



Tax declaration in Sweden

- **A-tax** (in Swedish, *A-skatt*): paid by individuals who have a taxable earned income;
- **F-tax** (*F-skatt*): paid by companies/business owners who have income from business activities;
- **Value-added tax, VAT** (*Moms*):
 - All business owners dealing domestically in goods or services in a professional business activity are liable to pay VAT;
 - However, entrepreneurs are entitled to deducted VAT, paying the difference between the VAT charged on your sales that payed on your purchases.
- **Personal contributions** (*Egenavgifter*):
 - Paid by a sole trader or partner in a trading partnership, i.e. a person with income from active business activity;
 - The fee is based on the profit of the company and is used to finance social security system such as sickness benefit, unemployment benefit, pension and health care, but their design and size vary between countries.
- **Employer contribution** (*Arbetsgivaravgifter*): when you pay wages and remuneration, you as an employer are obliged to report and pay employer contributions and deducted tax to the Swedish Tax Agency.

Source: Verksam.se (2019).



Funding

Common ways to acquire funding for your business:

- Own funds / Internal financing;
- Loan from bank;
- Loan from ALMI;
- Credit from suppliers;
- An advance payment from customers;
- Business credit in bank.

Other possibilities:

- **Vinnova**: Vinnova funds research and innovation projects that may not become a reality without government support. This involves everything from climate-smart meat alternatives to seeing how robots can help the elderly. Check: www.vinnova.se;

- Start-your-own business grant from **Arbetsförmedlingen** (if you are unemployed or might be);
 - Apply for **stipends**;
 - **Crowdfunding**;
 - **Investment companies**;
 - **Investment from individuals**.
- Check:
<https://connectsverige.se/>.

More advice can be found here:

<https://www.verksamt.se/starta/finansiera-starten/hitta-offentlig-finansiering>.



Networking Opportunities

Websites with business advice information:

- **Verksamt:** www.verksamt.se;
- **Driva Eget:** <https://driva-eget.se/>;
- **Företagande:** www.foretagande.se;
- **Skatteverket:**
https://www.skatteverket.se/servicelankar/other_languages/inenglish/businessesandemployers/registeringabusiness/startingabusinessinsweden.4.12815e4f14a62bc048f51be.html.

National networking opportunities:

- **LunchIn networking** (<https://lunchintra.net/>);
- **BNI Network** (<https://bni.nu/>);

- **Start-Up Bar**
(<http://startaochdriva.se/startupbar/>);
- **Events by Företagarna**
(<https://www.foretagarna.se/>);
- **Global Women Club**
(<https://globalwomanclub.com/clubs/stockholm/>).

Malmö based networking opportunities:

- **Djäkne kaffebar;**
- **MINC;**
- **STPLN;**
- **Media Evaluation;**
- **Start-Up Bar Malmö;**



Support Opportunities

Support centres for business coaching and advice in Sweden:

- **Skatteverket**: organising webinars and face-to-face courses about how the Swedish tax system works;
- **Nyföretagarcentrum**: business counseling and seminars. Check: <https://www.nyforetagarcentrum.com/>;
- **Drivhuset**: business coaching and seminars. Check: <https://drivhuset.se/en/>;
- **Almi**: business counseling, seminars, and providing loans. Check: <https://www.almi.se/>

Examples of local support centres (around Malmö):

- **Almi Företagspartner Malmö** (<https://www.almi.se/>);

- **Coompanion Skåne Malmö** (<https://skane.companion.se/>);
- **Nyföretagarcentrum Östersund** (<https://www.nyforetagarcentrum.se/>);
- **Drivhuset** (<https://malmo.drivhuset.se/en/>);
- **Ideon Innovation Lund** (<https://www.ideoninnovation.se/>);
- **Malmö Stads Företagslots at the Kontaktcentrum** (<https://www.malmobusiness.com/malmo-stadsforetaglots/>);
- **International Women's Organisation Malmö** (<https://www.ikf.se/>);
- **Medeon incubator** (<https://www.medeon.se/sv-se/Om-Medeon/Om-Medeon>);
- **Tillväxt Malmö** (<https://tillvaxtmalmo.se/>);
- **STPLN** (<https://stpln.org/>);
- **MINC** (<https://www.minc.se>).



10.3 Tips and ideas on how to use new technology and social media platforms to promote/start your business

Introduction

Contrary to popular belief, companies do not need a gigantic budget to run marketing campaigns on the internet.

That is why even small enterprises can effectively use e-marketing and reach customers in a creative way at every stage of the sales cycle.

The importance of e-marketing has increased during the last years as a result of the increased number of Internet users (Czym jest marketing internetowy?, n.d.).

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What is e-marketing?

Also known as online marketing, digital marketing or web marketing, it is

“[...] the mix of modern communication technology and traditional principles that marketers usually apply. When we talk about modern communication technology, this is electronic media.”

(Belyh, 2017)

E-marketing types and methods:

- **E-mail marketing.** Low cost, targets the correct category and simple (Ghareeb, 2016);
- **Search engine optimization (SEO).** The practice of increasing the ranking of the company's website in the first results of search engines through the use of keywords (Law, 2018);



- **Paid advertising or “pay-per-click” (PPC).** A form of “internet marketing where advertisers pay to show their adverts on search engines and other online platforms, also in social media platforms like Facebook, YouTube, LinkedIn, and Instagram” (Law, 20 18);

Note: **three types** of **payment** charged by platforms (Law, 20 18):

- **Cost-per-thousand-impressions** (“cost-per-mille” or “CPM”) - charged each time the ad is viewed 1,000 times;
 - **Cost-per-view** (CPV) - charged for each view the video gets;
 - **Cost-per-action** (CPA) (also known as cost-per-acquisition). - “[...] charged each time a user takes a specific action or converts into a customer” (ibid).
- **Social media marketing.** A type of communication through which you can directly engage with your customers; it increases the company’s popularity and outreach through several social media channels such as Facebook, Twitter, LinkedIn, Instagram etc. (Ghareeb, 20 16; Law, 20 18);



- **Content marketing.** It creates and distributes “online materials in a way that is strategically designed to attract, engage, and convert your target market into customers” (Law, 2018);
- **Affiliate marketing.** “Involves partnering up with a more established ecommerce entrepreneur in your niche and asking them to promote your products to his or her audience. In return, you’d give the affiliate a percentage of revenue from each sale he or she generates” (Raghav, 2017);
- **Influencer marketing.** It entails working with influencers (e.g. bloggers, youtuber etc.) “to promote a product or service to their online following” (Law, 2018).



E-marketing advantages (Shaw, 2019):

1. Instant response;
2. Cost-efficient;
3. Less risky;
4. Bigger data collection;
5. Interactivity;
6. Customised;
7. Greater product's exposure;
8. Accessibility.

The key is **online visibility**, “presence of a brand or its products in the consumer environment” (BigCommerce, n.d.).



How to increase online visibility (Murphy, 2013)?

- Use a **blog**: create unique content that explains the real nature of your brand;
- Learn about and use **SEO techniques**;
- **Share** as much **content** as you can;
- **Customers** are the most important component; check their reviews; let their feedbacks guide you towards a continuous improvement;
- Be **a c t i v e** on **social media**; nowadays, it is one of the most essential instruments. Use it well and wisely!



Recap of Module 10

Basics Of Entrepreneurship



Basics of
entrepreneurship



How to start a
business in your
country



Taxation in your
country



E-Tips

Do you have questions so far?

MODULE 11

HOW TO BUILD A SUCCESSFUL BUSINESS PLAN



11.1 SMART criteria

Introduction

Starting a business is not easy.

It does not only require financing, but also a lot of **research, planning, coordination, assembling resources, risk assessment, marketing** and much more. **But, above all, it requires patience and perseverance.**

It takes time to reach visible results, and this is also why **motivation** is at the core of the whole process.

Why build a business plan?

- It is essential to start a business as it sets its basis.
- It outlines **every single aspect concerning the business**: the main goals, how to achieve them, who it addresses, the financial part and so on.



A useful tool to build a **successful business plan** is the so-called **SMART criteria**.

This criteria **helps to ensure that the goals of the business are clear and reachable** (SMART Goals – How to Make Your Goals Achievable, n.d.). They should therefore be:

S pecific

M easurable

A chievable

R ealistic

T imely



S pecific

The goal should be “**clear, well defined and unambiguous**” (SMART Goal, n.d.). The five “W” questions can help to further define the goal:

- . **Who:** Who is involved in this goal?
- . **What:** What do I want to accomplish?
- . **Where:** Where is this goal to be achieved?
- . **When:** When do I want to achieve this goal?
- . **Why:** Why do I want to achieve this goal?



M measurable

It involves the criteria to **measure** the **progress** of the goal. The following questions therefore help in analysing the progress status:

- . How much/many?
- . How do I know if I have reached my goal?
- . What is my indicator of progress?

Source: SMART Goal (n.d.).



Achievable

The goals need to be **achievable** and **attainable**.

Reflecting on how achievable they are, or can get, is therefore essential.

Hence, asking to ourselves whether there are the **right resources** and **capabilities** to accomplish the goal is fundamental.

And, if not, what is **missing**? (SMART Goal, n.d.).



R ealistic

The goals need to be **realistic**; this means considering the feasibility of achieving the goal given the available resources and time (SMART Goal, n.d.).

T imely

Important to consider the **time bound of the goal**, which needs to be timely. The goal has to have a **start** and a **fixed end**: a time frame within which it will be achieved.

Otherwise, the absence of time limitations will progressively negatively affect motivation and, therefore, the accomplishment of the goal.



11.2 Building a business plan

As we have seen, a SMART criteria helps to address all the variables concerning a business idea, which is the starting point of a business plan.

And, now, we are ready for the next step: **building a successful business plan.**

Let's start by asking: **why having a business plan?**

- . To apply for a loan/investment;
- . To establish business milestones;
- . To better understand your target audience;
- . To have a deeper knowledge of your market;
- . To help you reach your goals;
- . To monitor your finances;
- . To be aware of your business' weaknesses and to mitigate risks;
- . To improve your strategic planning.



Components of a business plan

1. Executive summary:

- Short introduction of your company;
- An explanation of what you want to do, and what you want from the readers;
- It is advised that this section is the last you write because it will be easier to do it once you have all the details;
- This section should be able to act as a stand-alone document that includes all the details of your business plan, as investors may commonly just read this part before going deeper in the rest of it;

2. Opportunity:

this section includes a brief description of what you are selling and what your product is;

3. Execution - Action plan and milestones:

here, inform how you will turn your idea into a business. This includes the marketing and sales plan, milestones, and metrics of success;



4. Company and management summary:

- In this section, give a description of your team, the equity distribution, your legal structure, location and history, if applicable;
- Add your CV to inform people about who you are;
- Additionally, you can collect the following information about the company's management structure:

(Name of the company) is managed by a Managing Director under a multidisciplinary Board of Directors.

Managing Director:
Chairman of the Board:
Board Member:
Deputy Board Member:
Deputy Board Member:
Founders:
Board:

5. Financial plan:

- In this section include your sales forecast, cash flow statement, income statement, and balance sheet;
- Additionally, do some brainstorming to include the risks you foresee for your business; E.g:

Risks:

- Start-up Risk:
- Financial Risk:
- Failure of Deal Conclusion:



Startup cost and estimated initial cost for Year 1 in SEK/ Euro

Item	Figure	Share	Total shares	Comment
Registration cost				
Start- up office				
Post box				
Auditor/ accounting				
Communication				
Stationary/ office supplies				
Transportation				
Shares total per person				
Total expenses				



6. Appendix:

add here any additional information, such as product images etc.;

7. Mission Statement:

this section includes an explanation of the company's goals.

- Why it operates the way it operates;
- The identification of the products or services produced/provided;
- The definition of the primary customers (Mission Statement, n.d.);

8. Vision Statement:

differently from the mission statement, which addresses the present, the vision statement addresses the **future**;

- This section contains the information regarding where the company wants to go, setting a direction for the future (What Is A Vision Statement?, n.d.).



SOME POINT TO KEEP IN MIND:

- **Keep it short:** you want your business plan to be read, and to have space to grow.
- **Know your audience:** use language that your target group will understand.
- **Don't be intimidated:** although you might not be an expert, no one knows your business better than you!

Source: How to Write a Business Plan [Updated for 2020] (2020).

Additional resources to build a successful business plan can be found here:

- Almi, “10 steps to create a winning pitch deck” (<https://www.almi.se/en/almi-invest/pitch-your-startup/pitch-deck/>);
- The business model Canva can be found on different websites; an example, <https://www.strategyzer.com/canvas/business-model-canvas>.



Recap of Module 11

How To Build A Successful Business Plan



Planning, motivation
and perseverance



SMART criteria



Why building a
business plan

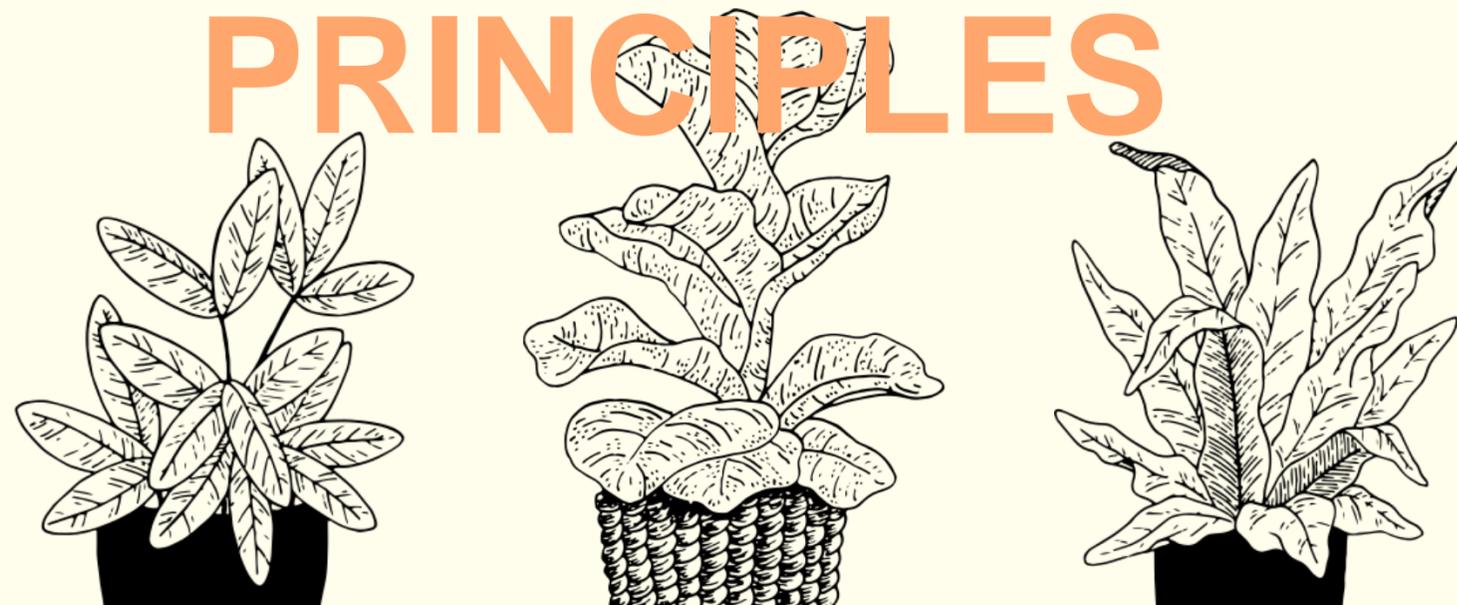


Components of a
business plan

Do you have questions so far?

MODULE 12

WORKSHOP - HOW TO CREATE A CIRCULAR BUSINESS PLAN USING THE CIRCULAR ECONOMY PRINCIPLES



What is a business model?

And, what about circular business models?

... Let's start!



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

This project is co-funded by the European Commission through the Erasmus+Programme. (KA204 - Strategic Partnerships for adult education -2019-1-SE01-KA204-060530).