PACKALL

PackAlliance:
European alliance for innovation training
& collaboration towards future packaging

Linking Academy to Industry.

Training program: modules

- Eco-design & novel manufacturing processing
- **New materials and biomaterials**
- Citizen and Consumer Engagement
- Residue management and valorisation

Co-funded by the
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Lecture

Characteristics of the Principles of the of Circular Economy part 2

How to make the transition to a circular economy?

Tools of monitoring of CE indicators

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The genesis of national circular economy road map

National Road map is a tool for the process of transition from linear to circular economy.

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How the road map is created?

- Taking into Account the country's conditions
- Cooperations and requiremants
- Flexible
- Relevant

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What the road map can include?

- The Roadmap focusses on **5 areas** in particular:
- Sustainable industrial production
- Sustainable consumption
- Bioeconomy
- New business models
- implementation, monitoring and financing of CE.

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Corporate Social Responsibility

Useful tools: CSR

- Responsibility for the impact of decisions made within the organization and actions resulting from these decisions on society and the natural environment.
- A business mangement styles that intergrates social, environmental, ethical, and human rights into business activity with cooperation with stakeholders.
- Good practices in the context of new and biomaterials

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Life Cycle Assessment

LCA

- The tool of environmental management that assessing the environmental risks associated with a product system or operation
- It identifies and quantifies the materials and energy used and the waste released into the components of the environment

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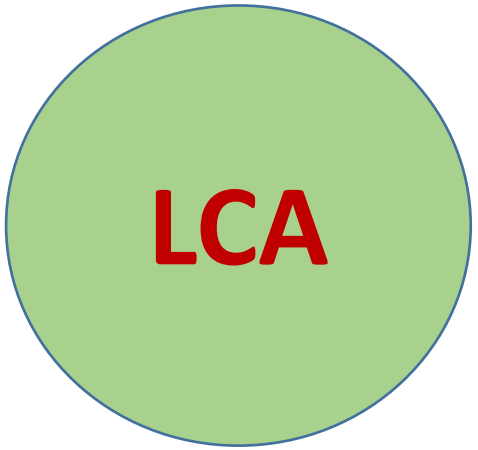
The steps of LCA implementation

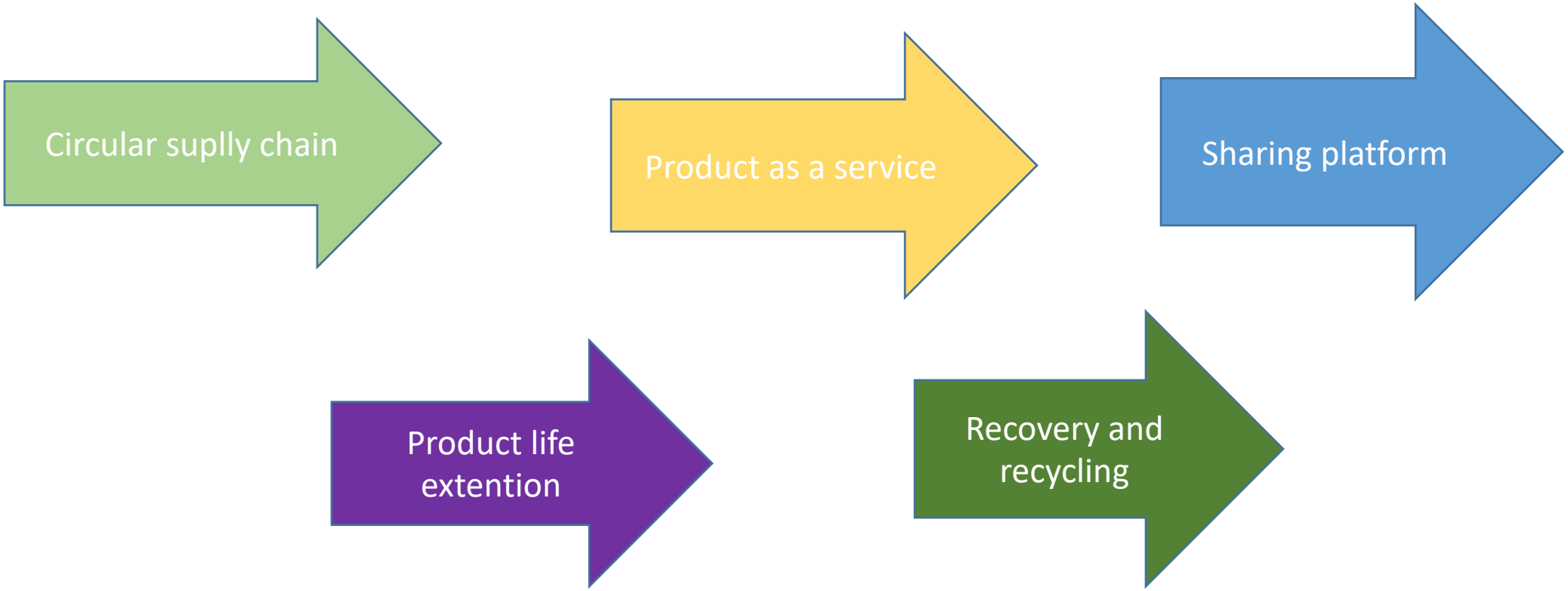
1. Preparation for production - from the extraction of raw materials and supplying energy
2. Production process
3. Consumption,
4. Waste management.



LCA in the context of new and biomaterials

Strategies and business models

Circular value chain



Sustainability of new and biomaterials in the context of circular economy transformation

- The European objective of reducing the recyclable content in landfilled waste (the EC's Landfill Directive),
- biodegradability or compostability
- reduction in landfilling as end-of-life option for packaging material

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EU rules on packaging and packaging waste, including design and waste management

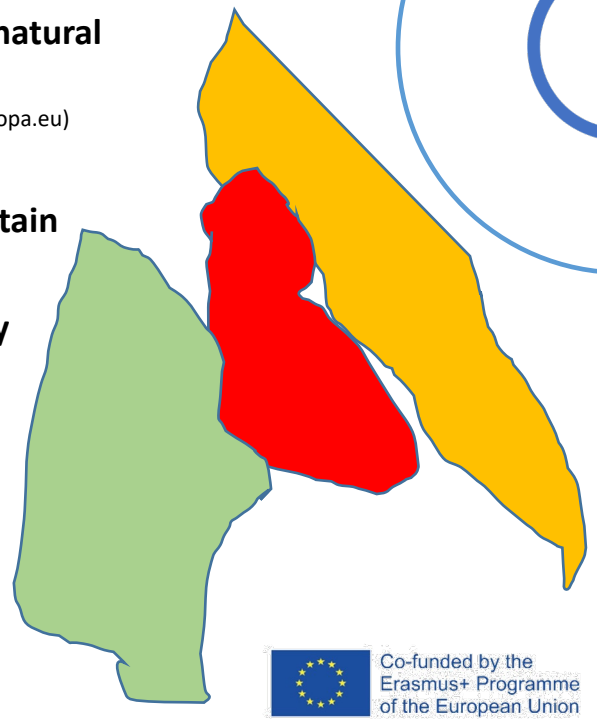
The Packaging Directive aims to:

- harmonise national measures on packaging and the management of packaging waste
- provide a high level of environmental protection
- ensure the good functioning of the internal market

Definitions

Examples of biomaterials: metals, ceramics, glass, and polymers

- **Bioplastics constitute a broad range of materials and products that are biobased, biodegradable/compostable, or both** (Source; Glossary – European Bioplastics e.V. (european-bioplastics.org)
- **Biodegradable - capable of decomposing rapidly by microorganisms under natural conditions (aerobic and/or anaerobic). Most organic materials, such as food scraps and paper are biodegradable** (Source: biodegradable — European Environment Agency (europa.eu)
- **Compostability - is a characteristic of a product, packaging or associated component that allows it to biodegrade under specific conditions (e.g. a certain temperature, timeframe, etc.)** (source: it is not legal definition but invoked in EU documents)
- **Bio-based plastics - A plastic, whose constitutional units are wholly or partly made from biomass (CEN TR 15932)** (source: https://www.cen.eu/)



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Future of the plastics in packaging plastic sector

Bio-based plastics:

- supporting a “circular economy”
- is good for the environment
- can be recycled

For more information please visit: www.european-bioplastics.orgtwitter.com/EUBioplastics

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How to reduce plastics in packaging sector
The examples of useful biomaterials

- **Bioplastic/ compostable shrink wrap -** the bioplastic is made from a plant-based resin called Mater-Bi. It replaces traditional single-use shrink wrap for fruits and vegetables)
- **Nuatan - a new and innovative biodegradable natural plastic**

created to reduce waste in oceans and lakes. It achieves waste reduction as the material can be safely eaten by aquatic animals or composted.

- **Notpla -** is a revolutionary material made from seaweed and plants. It biodegrades in weeks, naturally.
- **THREEANGL** - Canadian company that designed a natural deodorant in innovative biodegradable containers manufactured from agricultural residues.

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