



# **Circular value chains, ecosystems** and people



#### The aim of this lesson:

- To recognize stakeholders in circular economy
- To gain understanding of circular value chains
- To identify/ recognize barriers and ecosystems
- To observe ideas how to involve companies, people in circular thinking
- To perform changes in society

#### **Topic programme**

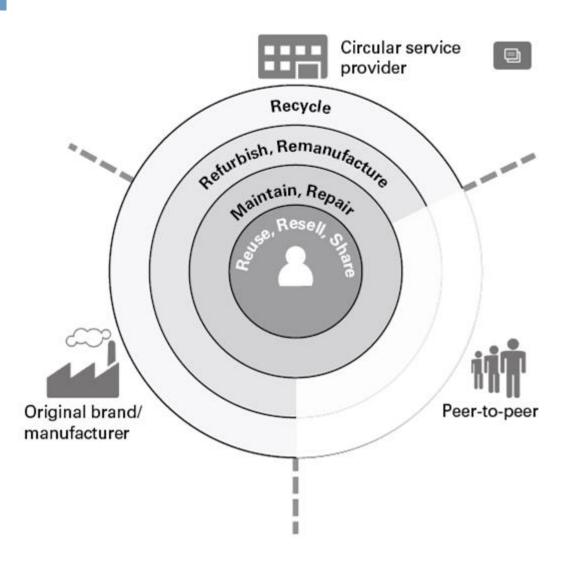
This topic takes 2 (120') hours, hence the following programme is suggested

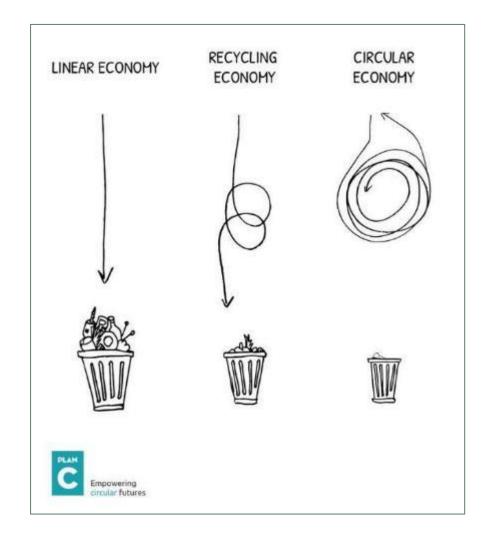
Minutes	ΤΟΡΙΟ
25 min.	A presentation about stakeholders role in the CE – from linear to circular
25 min.	A presentation and discussion about changes in value chain
30 min.	Exercise: How different value chain organizations can change their processes towards CE?
10 min.	A presentation about barriers to CE and Ecosystems as another aspect of CE
10 min.	A presentation of organizations working towards CE
10 min.	A presentation about society possible activities towards circular society
10 min.	A presentation about integrated learning approach when dealing with performing changes for stakeholders
120 min.	

## Linear economy value chain

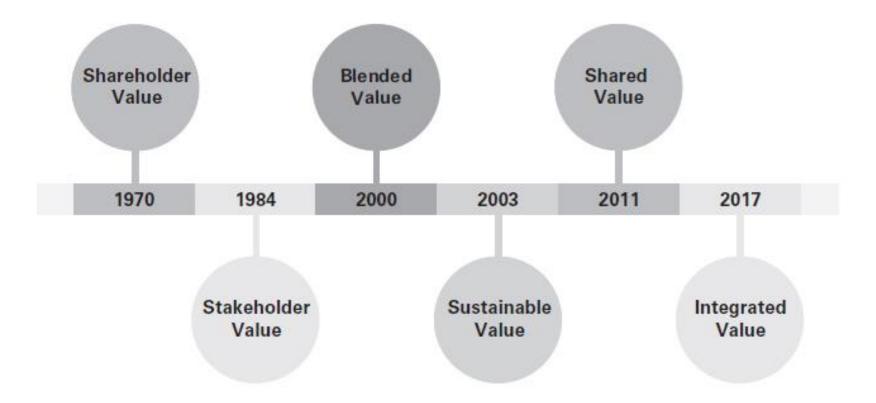


# **Circle flow**





#### Leading value creation concepts



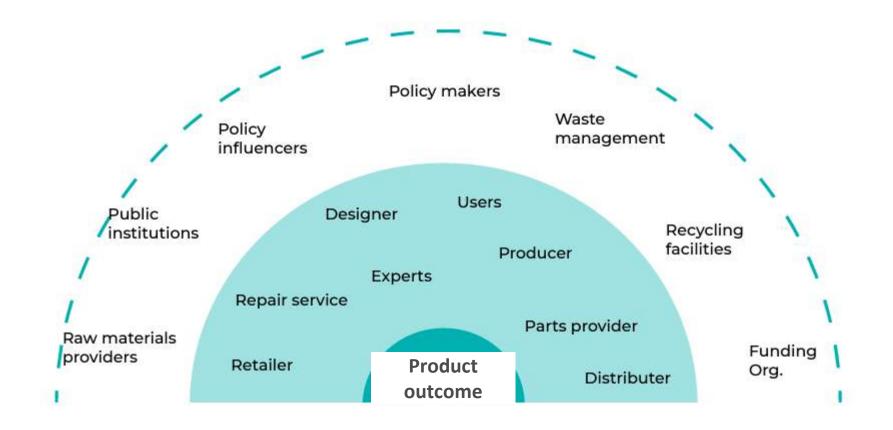
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# Stakeholders & CE strategies

	Waste management	Waste Biochemical experts / Labs	Waste Renewable material producers	Users	Service providers	Product manfacturers	Part manufacturers	Recycling Facilities
Mantain & Prolong								
Reuse & Redistribute								
Refurbish & Remanufacture								
Recycle								
Cascades								
Biochemical extraction								
Return to biosphere								

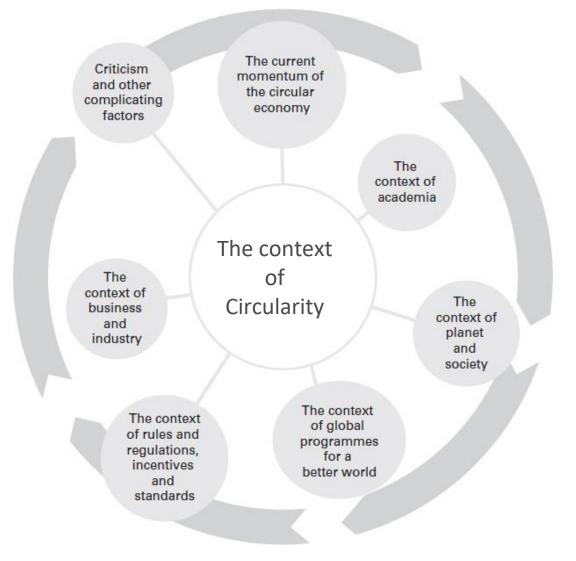
https://upcommons.upc.edu/bitstream/handle/2117/179149/Handbook-in-IDfS.pdf;jsessionid=F6DFB47D850447FD5C055455F65484EB?sequence=1

# Stakeholders – direct and indirect



https://upcommons.upc.edu/bitstream/handle/2117/179149/Handbook-in-IDfS.pdf;jsessionid=F6DFB47D850447FD5C055455F65484EB?sequence=1

# **Implementing CE**



# Imagine transformation...

Discussion in groups

- What are benefits from being circular for (1) entrepreneurs,
  (2) local government, (3) citizens?
- 1. What are problems to become circular for (1) entrepreneurs, (2) local government, (3) citizens?
- 1. Where would you start to act more circular in your closest surrounding? Please, mention 3-5 examples.

# **CE implementation milestones**

- Established legal framework
- Administrative support and conditions
- Economic and financial instruments
- Educated and involved society

# **Barriers to CE**

#### Theoretical

Financial	Measuring financial benefits of circular economy	
rmancial	Financial profitability	
Character 1	Missing exchange of information	
Structural	Unclear responsibility distribution	
Operational	Infrastructure/ Supply chain management	
Attitudinal	Perception of sustainability	
Annuomai	Risk aversion	
Testeratesiant	Product design	
Technological	Integration into production processes	

#### Results

- 1. Attitude and knowledge
- 2. Integration between functions
- 3. Value chain structure
- 4. Values and finances
- 5. Technology

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# **Ecosystems**

### Drivers of ecosystem change

(habitat destruction, invasive species, pollution, population, overexploitation, climate change)

## Conservation and restoration

(disturbance, structural complexity, connectivity, resilience)

# Living together: reconciliation ecology

(Yards and parks, birds, bats, green roofs, cemeteries, military sites, golf courses, agricultural lands, public lands, utility corridors, roads and wildlife crossings)

# **Examples of circularity - business**

## **Hotels**



https://www.dawnvale.com/news/hotels-planet-friendly-ideas-for-lowering-your-carbon-footprint/

# **Examples of circularity - business**

# Packaging









Foto:

# **Examples of circularity - society**

# **Energy effiency**





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# **Examples of circularity - society**

# **Re-using**







# **Examples of circularity – urban communes, society**

Kitchen garden





# **Examples of circularity – DARE and local families**









# How to manage changes

## Integrated learning approach

Meaningful & relevant	Needs to appeal to learner's perspective: business, society, citizenship					
For now & the future	Not only the basics, but link to future changes & challenges					
'Feel' the complexity!	Everything looks simple, until you're in the driving seat					
Knowledge & skills	Not only 'know the concepts', but also 'able to decide' (trade-offs)					
Individual & team activities	Individual view versus team & cross-functional alignment					
Engaging & fun	Motivate: through the content, but also through the methodology ('gamification')					