

# **Finland's Contributions to Solving Global Challenges**

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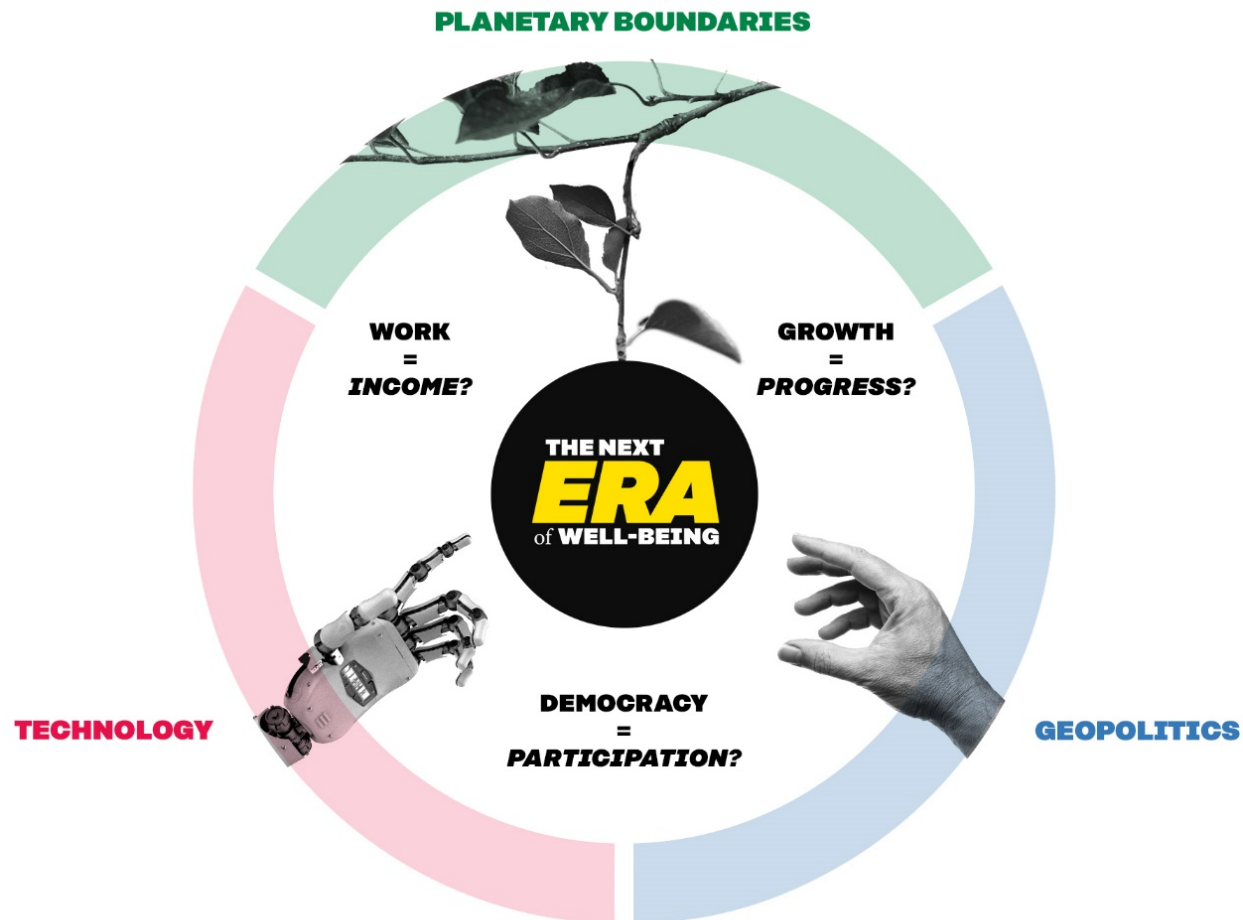
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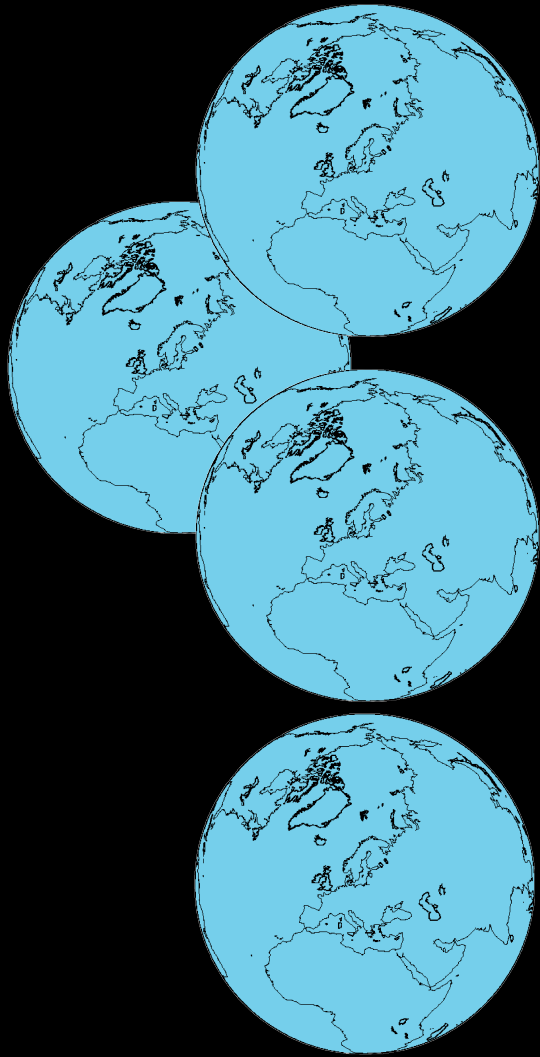
Finland will succeed as a  
pioneer of sustainable  
well-being.



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# SUMMARY OF MEGATRENDS: Change determinants and boundary conditions





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**The World is full of waste and throwawayism..**

**.. yet the demand for raw materials is increasing.**

Why do we throw away about 80 % of consumer products and their materials in Europe?

The global demand for raw materials will increase during the next 20 years

On average, materials in Europe are used **only once.**

**10-15 %** of building materials goes to waste during construction.

The average occupancy rate of cars is about **8 %**

Farmland, over **+ 200 %**

Water **+ 137 %**

**31 %** of produced food goes to waste in value chain. In Finland it makes **300-400 million kilos** per year.

Offices' occupancy rate is about **40 %**

Steel **+ 57 %**

Energy **+ 32 %**

Sources: EEA, GSA, UN FAO, EU, McKinsey, Luke

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# HOW THE CIRCULAR ECONOMY REDUCES CO<sub>2</sub> EMISSIONS

*Getting more from the materials we already have*

## 1 MATERIALS RECIRCULATION

GHG

MATERIALS

*High-value recycling  
and less new material*

*High value recycling*

- Increased collection rates
- Design for disassembly and improved materials separation
- Less contamination and downgrading of materials

## 2 PRODUCT MATERIAL EFFICIENCY

MATERIALS

PRODUCT

*Less material input for  
each car, building, etc.*

*Improved production*

- Less production waste
- Avoid over-specification

*Reuse of components*

*Improved design*

- High-strength materials
- New design principles
- Variation in size

## 3 CIRCULAR BUSINESS MODELS

PRODUCT

USEFUL SERVICE

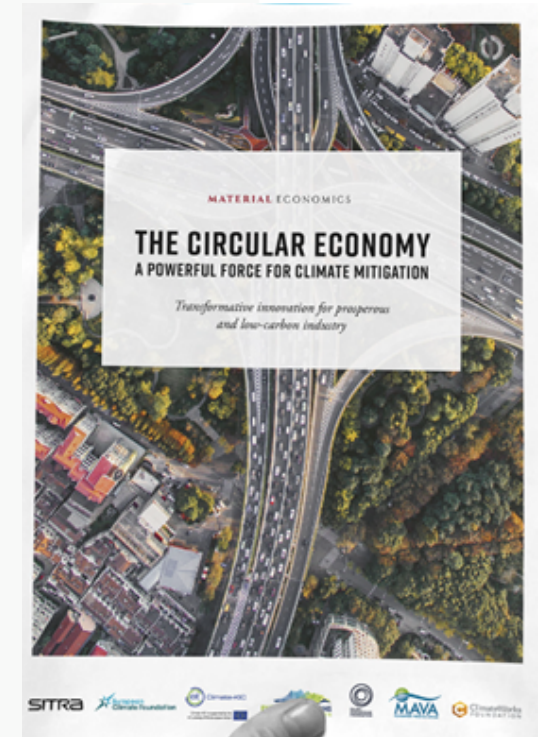
*Fewer products to  
achieve the same benefit*

*Higher utilisation*

- Sharing of products
- Product as service

*Longer lifetime*

- Design for durability and disassembly
- Long lasting materials
- Improved maintenance
- Remanufacturing



# Circular economy outlook 2018

**Circular economy as a concept** is widely known in EU but also in Canada and partly in Asia


**10 EU member states** have announced national roadmaps or action plans. For example Brussels and London have made city level strategic initiatives


**Circular economy metrics**  
Germany, Japan and China have included also life cycle thinking and SDG goals in their metrics.

**Circular economy could be a powerful source for climate mitigation** - more circular economy can make deep cuts to emissions from heavy industry: in an ambitious scenario, as much as 296 million tons CO<sub>2</sub> per year in the EU by 2050, out of 530 Mt in total

**Policy level actions** include e.g. Sweden's VAT tax breaks on repairs and Austria's green public procurement

**EU circular economy package** including e.g plastic strategy and 10 indicators for CE

 National or regional circular economy strategy or action plan

 National circular economy roadmap



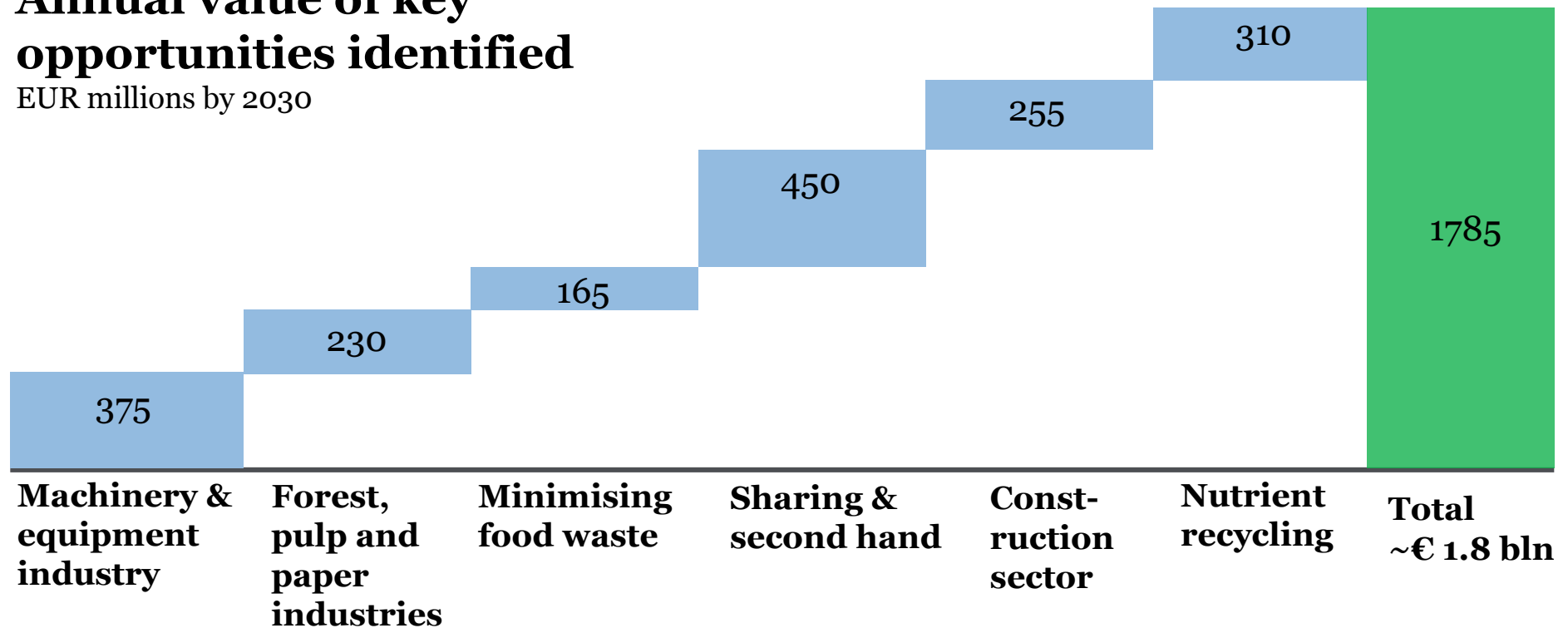
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# Some Circular Economy opportunities for Finland

## Annual value of key opportunities identified

EUR millions by 2030



Sources: McKinsey, Gaia Consulting

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**GOVERNANCE**



**MUNICIPALITIES & CITIES**



**CITIZENS**

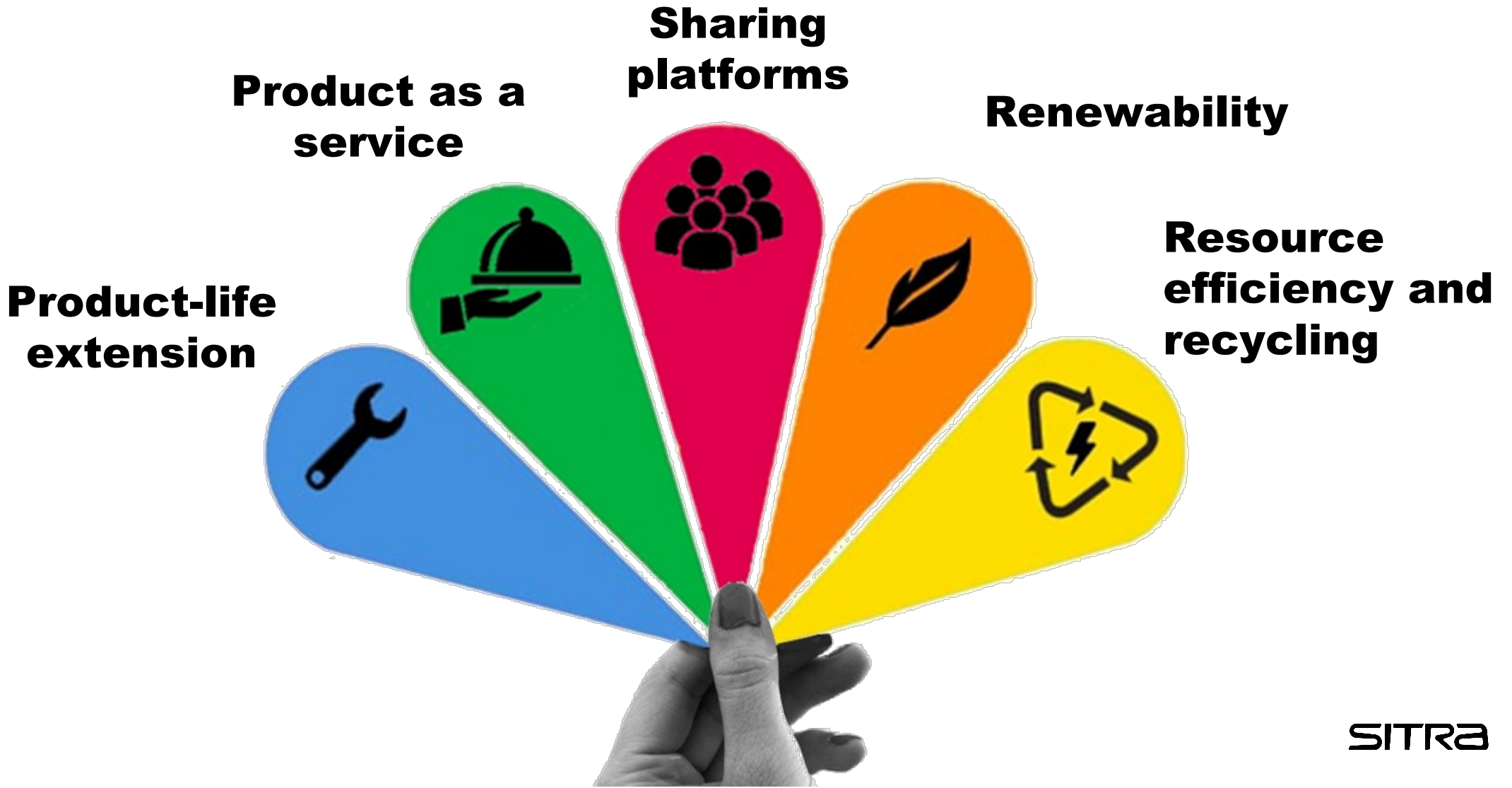


**COMPANIES**



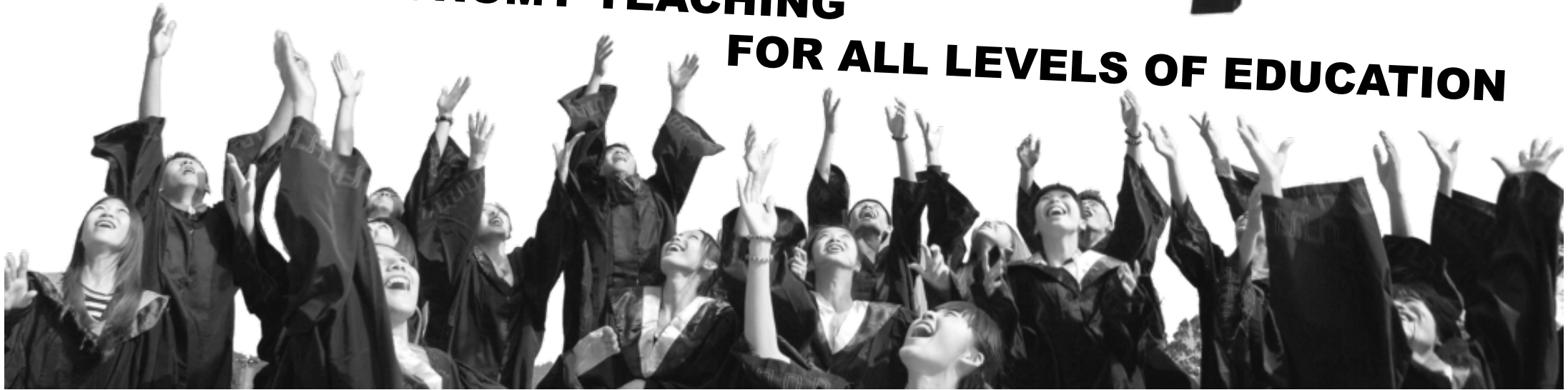
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**26 PROJECTS**

**CIRCULAR ECONOMY TEACHING  
FOR ALL LEVELS OF EDUCATION**



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