Challenge 4: From waste disposal to resource efficiency – circular economy at the city scale

Many natural resources are fundamental to our health, well-being and quality of life, so it is essential that we respect the natural limits of the planet. Growing global demand is adding pressure on the environment, whereas the quest for more resources is increasing.

Resource efficiency means using the Earth's limited resources in a sustainable manner while minimizing impacts on the environment. It allows us to create more with less and to deliver greater value with less input. It also supports the shift towards sustainable growth via a resource-efficient, low-carbon economy and promotes a fundamental transition towards the reuse of resources as well as the minimization of waste, thus away from a linear economy where resources are simply extracted, used and disposed.

A circular economy is an economic system aimed at eliminating waste and the continual use of resources. Circular systems employ reuse, sharing, repair, refurbishment, remanufacturing and recycling to create a close-loop system, thus minimizing the excessive and unnecessary use of resources and the production of waste, pollution and carbon emissions. This regenerative approach is in contrast to the traditional linear economy, which pursues a "take, make, dispose" model of production.

A truly sustainable urban policy requires local authorities to act towards recourse efficiency, thus creating added value for their citizens and a vibrant local and regional economy.

Keywords: production and consumption, resource efficiency, waste management, circular economy.

Proposed discussion points:

- Is it possible to produce more value with fewer inputs, to lessen our impact on the environment, and to consume in a more intelligent fashion?
- Can we use resource efficient alternatives and boost recycling?
- Have you ever considered repairing or reusing things that you already have over buying new ones?
- Do you think such a mindset could be employed by the city's authorities as well as its people?
- Do you know what happens to waste produced in the city? Do you know where does it end – in a landfill, incinerator, or where it may be recycled?
- What are the types of resources that are not widely available in your city and therefore are imported? Do you know if they are re-used in the local economy?

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Exemplar Science Team's project:

Towards less-waste / zero-waste cities. How to turn our city into eco-one? – Science Teams investigate the waste management system in their city – what happens with the waste produced? Where does it end – in a landfill, incinerator, or maybe gets recycled mainly? – as well as customs habits – What is the average production of waste in the city? Do (and what) people think about the waste they produce? Afterwards, Science Teams look for solutions to decrease amount of waste produced as well as to improve waste management.

Let's repair. How to turn our city into eco-one? – Science Teams investigate a map of repair points (shoemaker, tailor, repair of household appliances and computers). Afterwards, Science Teams campaign in their school to encourage the use of these points. Students can also organize a repair action at their school. They should find people who can, for example, sew clothes or repair the computer. In return, a person in need of repair could repay them with help in learning or a delicious cake.

Resources to find out more about this Challenge:

- Roadmap to a Resource Efficient Europe https://ec.europa.eu/environment/resource_efficiency/about/roadmap/index_en.htm; full document https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0571 (available in 23 European languages);
- A new Circular Economy Action Plan for a Cleaner and More Competitive Europe https://ec.europa.eu/environment/circular-economy/index_en.htm.

Linked to Sustainable Development Goals (SDGs):

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