

# Environmental- and health benefits from circular economy

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KAIDI KAARET

STOCKHOLM ENVIRONMENT INSTITUTE TALLINN CENTRE

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# Circular economy

**Re**think

**Re**design

**Re**manufacture

**Re**pair

**Re**distribute

**Re**duce

**Re**use

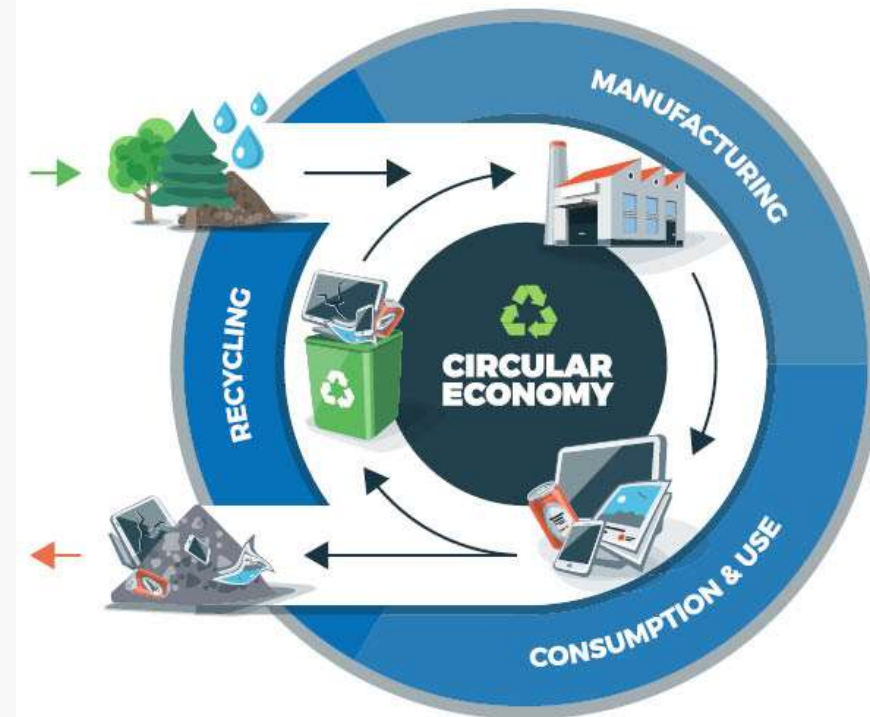
**Re**cycle

**Re**cover energy

The circular economy is a transition from a linear model, to a circular model in the economy.

Definitions of a circular economy have two main types:

1. Resource oriented and focused on the closed loops of material flows and reduced consumption of virgin resources
2. Incorporating additional dimensions, such as changing consumption habits



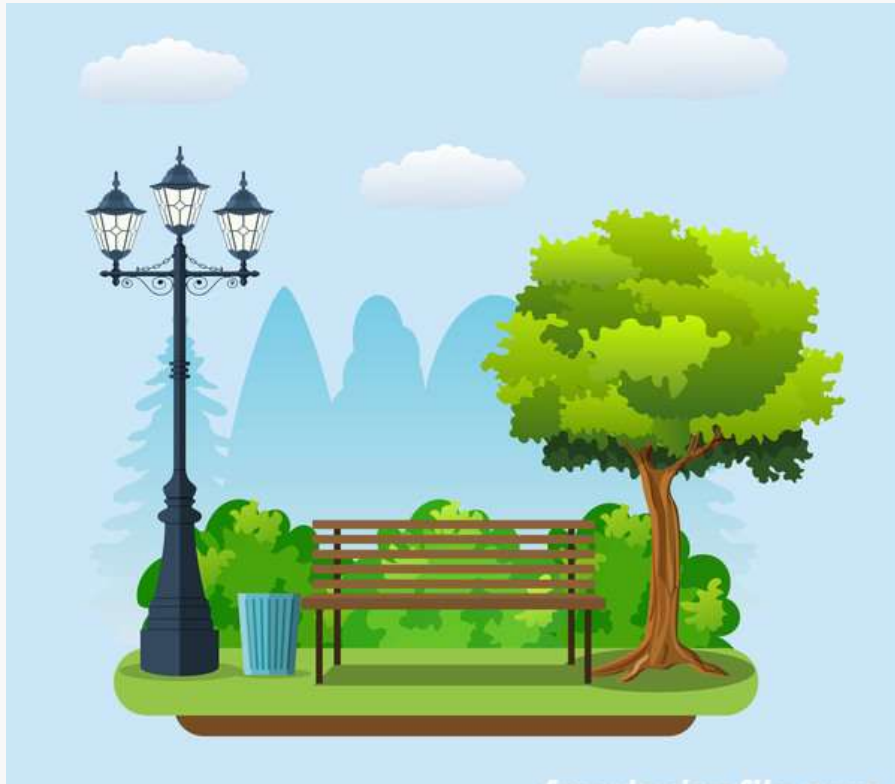
# WHO estimates, that outdoor air pollution causes over 4 million deaths globally every year

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- Ambient air pollution can lead to stroke, cancer, negative birth rates, respiratory risks
- Ambient particulate air pollution is estimated to reduce life expectancy by almost 9 months on average in Europe

## The adoption of circular economic models will:

- ❖ Reduce manufacturing rates
  - reduces pollution to air and water
- ❖ Increase recycling rates
  - The use of recycled materials in manufacturing fosters energy savings, reduces the use of virgin resources and reduces pollution
- ❖ Reduce waste generation and landfilling rates
  - Improper landfilling may leach toxins into the soil and ground- water. For example heavy metal pollution from e-waste can affect human organs, especially the brain, causing persistent effects on the nervous system



Urban green spaces promote mental and physical health by providing psychological relaxation and stress alleviation, supporting physical activity and reducing exposure to air pollutants, noise and excessive heat

# Circularity in cities

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By 2050, the proportion of the population living in cities is expected to rise to 70% in 2050.

About half of the urban population monitored is exposed to air pollution that is at least 2.5 times higher than WHO recommended levels

## **Circular economy models appropriate for redesigning cities:**

- Possibility to collect and sort waste,
- Sharing economy instead of ownership
- Converting existing infrastructure instead of demolishing it
- Attractive open space to promote sustainable, inclusive and healthy mobility
- Incorporating green spaces

# Optimizing food production and consumption in relation to environmental challenges.


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Agriculture is a large contributor of greenhouse gases, and responsible for pollution of nitrogen, phosphorus, heavy metals and pesticide residues in the soil and water reserves.

Circular economy in agriculture:

- ❖ Resource-efficient agricultural practices,
- ❖ Precision agriculture
- ❖ Closed loops of nutrients and water
- ❖ Recovery of energy and nutrients from waste streams





*We can no longer simply assume an increase in agricultural production by roughly 60% to feed 9 billion people on Earth by 2050. Most agricultural resources go to feed animals rather than humans, and the current challenge is as much for 'feed security' as it is 'food security'*

*- European Commission Junction of Health, Environment and Bioeconomy, 2015*

# Changing consumption patterns

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- ❖ Reducing the intake of resource-intensive food types (such as meat and dairy)
  - Will result in freeing resources (land, water, minerals, energy ..) needed for feed production
  - Will reduce greenhouse gases related to animal agriculture and land use change
  - Healthier population: reduced cardiovascular diseases, circulatory diseases, cancers, diabetes, obesity
- ❖ Limiting generation of food waste
  - will reduce greenhouse gases,
  - will reduce use of resources needed to produce, process, transport and distribute food
  - redistribution of excess food will reduce malnutrition and other diet related endpoints







Thank you!

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