Sahara

Closing the Loop: Tackling Food Loss through Circular Agriculture

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Agenda

- Circular Agriculture & Food Loss: What's the link?
- Circular Agriculture Approach
- Food Loss Impact
- Action Plan to Tackle Food Loss & Food Waste using Circular Agriculture
- Role of Policy in Tackling Food Loss & Food Waste
- Examples of Successful Models Around the World
- Relevant Resources

Circular Agriculture & Food Loss: What's the Link?

Circular Agriculture and Food Loss are interconnected concepts that relate to sustainable food production and consumption.

Let's explore the link…

Circular (Regenerative) Agriculture Approach

It is an approach to farming that focuses on closing the loop of resource use within the agricultural system.

The goal is to minimize waste, conserve resources, and promote ecological balance. Circular agriculture emphasizes practices such as crop rotation, cover cropping, reduced chemical inputs & regenerating soil health.

Key Principles of Circular Agriculture:

- Closed Nutrient Loops:

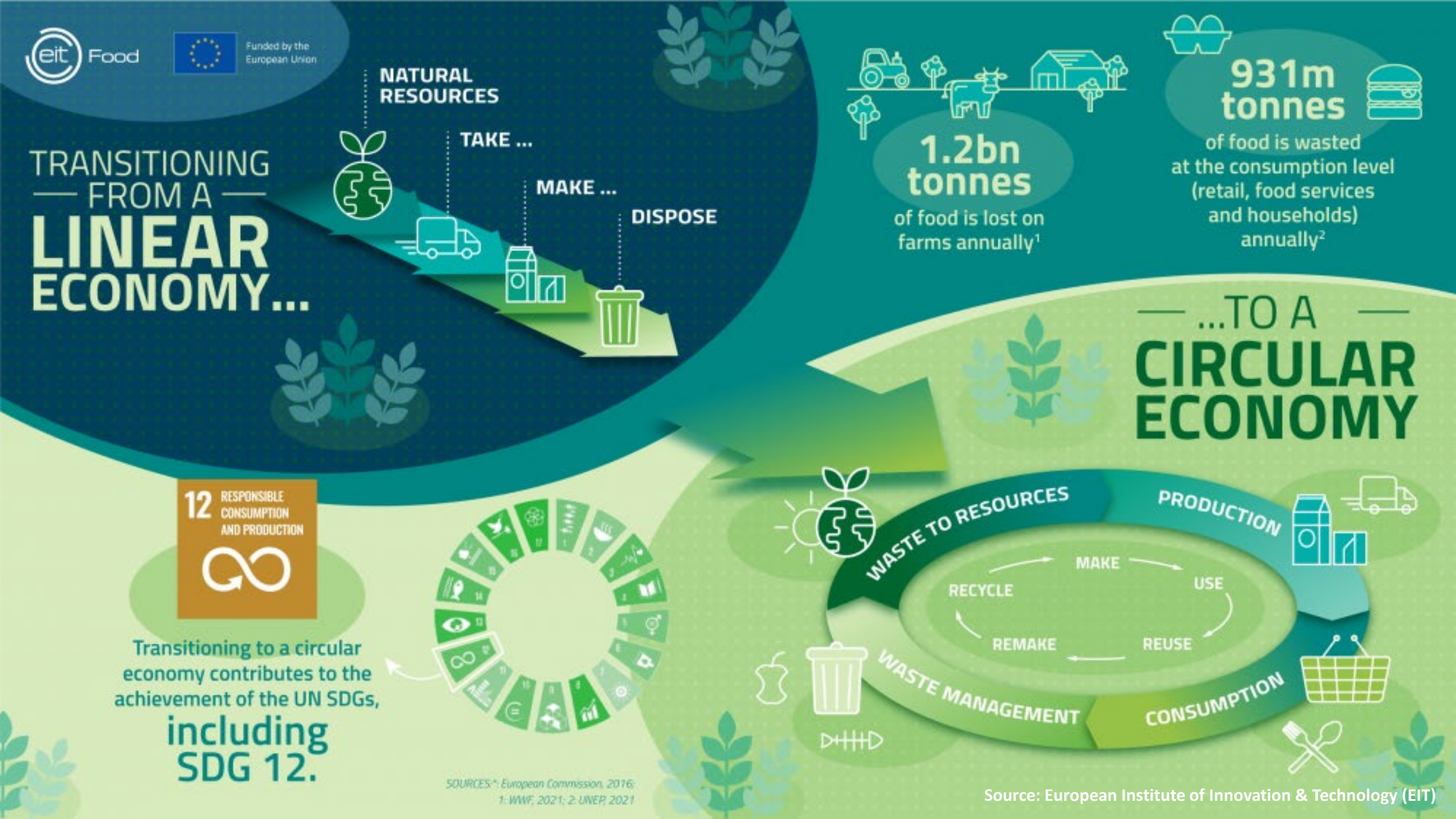
The system aims to recycle organic matter and nutrients back into the soil to enhance fertility and reduce the need for synthetic fertilizers.

- Biodiversity:

Encouraging diverse crop rotations and incorporating natural ecosystems on the farm promotes a healthy balance between pests and beneficial organisms, reducing the need for chemical pesticides.

- Water Conservation:

Implementing water-efficient irrigation systems and practices to minimize water waste.



Source: European Institute of Innovation & Technology (EIT)

➢ Food Loss:

Occurs at various steps in the supply chain before food reaches consumers, based on criteria such as spoilage and inadequate storage.

➢ Food Waste:

Happens when edible food is discarded at the consumer level or by foodservice establishments.

Food Waste & Food Loss Impact

➢ Environmental Impact:

When food is wasted/lost, all the resources used to produce, process, transport, and store that food (such as water, energy, land) are also wasted.

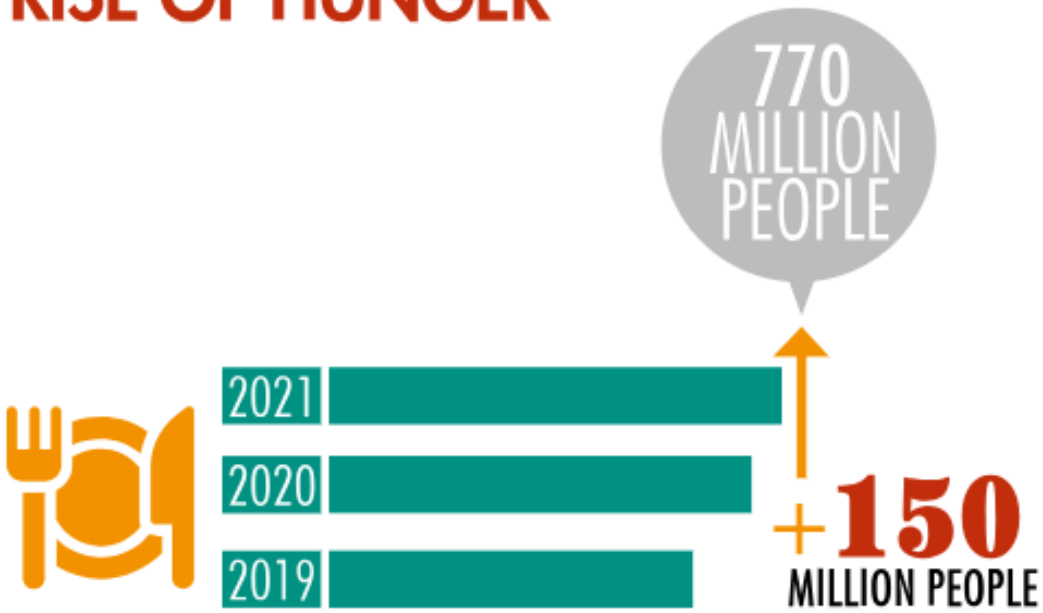
Moreover, food waste in landfills generates methane, a potent greenhouse gas.

➢ Social Impact:

Food Waste & Loss are a concerning issue when millions of people suffer from hunger and food insecurity worldwide.

By reducing them, more food can be made available to those in need.

RISE OF HUNGER



Hunger is still on the rise, with almost 770 million people undernourished in 2021, 46 million more than in 2020 and 150 million more than in 2019.

PREVALENCE OF UNDERNOURISHMENT

While most of the undernourished people live in Asia, Africa has the highest prevalence of undernourishment.

https://www.fao.org/3/cc2211en/online/cc2211en.html#chapter-3

The Link!

The link between Circular Agriculture and Food Loss is the potential for circular agricultural practices to help reduce food loss. Circular agriculture seeks to optimize resource use, increase efficiency, and create a more sustainable food system.

When applied effectively, it can contribute to reducing food loss in several ways:

- Resource Efficiency:

Circular agriculture aims to utilize resources efficiently, including water, nutrients, and energy. As a result, it can minimize wastage of these resources in food production.

- Biodiversity & Pest Management:

By promoting biodiversity on farms, circular agriculture can help control pests and diseases naturally, reducing crop losses and the need for excessive pesticide use.

- Extended Shelf Life:

Some circular practices, such as using natural preservatives or improving post-harvest handling, can extend the shelf life of perishable products, reducing losses due to spoilage.

- Byproduct Utilization:

Circular agriculture encourages the use of byproducts and waste from one part of the system as inputs for another. For example, crop residues can be used for animal feed or compost, reducing waste and closing nutrient loops.

- Reduced Overproduction:

By aligning production with demand, circular agriculture can help prevent excessive surplus that often leads to food loss.

In conclusion, circular agriculture and food loss are linked through the potential of circular agricultural practices to contribute to the reduction of food loss by promoting sustainable resource management and efficiency within the food system.

By adopting circular principles, we can move towards a more resilient and sustainable food production system that minimizes waste and ensures food security for all…

Action Plan to Tackle Food Loss & Food Waste using Circular Agriculture

Key Steps & Strategies

➢ Education & Awareness:

- Raise awareness among farmers, food producers, retailers, and consumers about the environmental and social impacts of food loss
- Promote the principles and benefits of circular agriculture, highlighting how it can contribute to reducing food loss

➢ Data Collection & Analysis:

- Gather data on food loss along the supply chain to identify specific areas of high wastage
- Analyse the reasons for food loss at each stage, from production to consumption, to devise targeted solutions

➢ Farm-Level Practices:

- Encourage farmers to adopt circular agriculture practices, such as crop rotation & agroforestry, to optimize resource use & reduce loss
- Promote integrated pest management techniques to reduce reliance on chemical pesticides

Key Steps & Strategies (Cont.)

➢ Post-Harvest Handling and Processing:

- Improve post-harvest handling & storage techniques to extend shelf life of produce & minimize losses due to spoilage
- Encourage use of innovative technologies, such as cold storage & controlled atmosphere storage, to reduce loss

➢ Supply Chain Management:

- Implement efficient supply chain management practices to reduce food losses during transportation & distribution
- Establish partnerships between farmers, processors & retailers to better coordinate production and reduce surplus

➢ Market & Consumer Engagement:

- Educate consumers about the importance of reducing food waste methods such as proper meal planning & storage
- Encourage retailers to implement policies like discounts on near-expiry products to reduce retail-level food waste

Key Steps & Strategies (Cont.)

- **Food Recovery & Redistribution:**

  Establish food recovery programs & networks to redirect surplus food to food banks, shelters & charitable organizations

- **Composting & Organic Waste Recycling:**

- Encourage composting of food scraps & agricultural residues to recycle organic waste & return nutrients to the soil
- Support community composting initiatives and promote the use of compost in agriculture

- **Innovation & Technology:**

- Invest in research & development of innovative technologies to reduce food waste & improve resource efficiency
- Support startups & businesses focused on creating solutions for reducing food waste

Role of Policy in Tackling Food Waste & Food Loss

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- Setting Targets & Goals:
  Governments can establish food waste reduction targets and goals at the national, regional, or local levels.
  These targets serve as benchmarks for progress and create a sense of urgency among stakeholders to take action.
  Circular agriculture practices, with their focus on resource efficiency, can be explicitly linked to these targets to encourage adoption.
  It is critical also to keep on monitoring & evaluating the targets & goals.

- Financial Incentives:
  Governments can offer financial incentives, grants, or subsidies to farmers, food producers & businesses that adopt circular agriculture practices aimed at reducing food waste. These incentives can offset the initial costs of transitioning to more sustainable methods and make circular approaches economically attractive.
  Example: Support food donation tax incentives & liability protections for businesses that donate surplus food

- Regulating Food Waste Reporting:
  Implementing mandatory food waste reporting for businesses & institutions can create transparency & accountability. Circular agriculture practices, such as composting, can be promoted as a viable option for managing unavoidable food waste.

Role of Policy in Tackling Food Waste & Food Loss (Cont.)

- **Extended Producer Responsibility (EPR):**

  EPR policies can require producers and manufacturers to take responsibility for their products' entire lifecycle, including the management of waste generated from their products.
  This approach can drive more sustainable packaging and production practices, reducing post-consumer food waste.

- **Education & Outreach:**

  Policy initiatives can support educational campaigns targeting consumers, retailers & food producers to raise awareness about food waste and the benefits of circular agriculture practices. Education helps build a culture of sustainability and encourages behavioural changes.

- **Regulating Date Labelling:**

  Date labelling on food products can reduce consumer confusion and prevent premature discarding of safe-to-eat food. Clear labelling based on safety considerations rather than quality can reduce food waste at the consumer level.

Role of Policy in Tackling Food Waste & Food Loss (Cont.)

- **Food Waste Diversion Requirements:**
  Regulations can mandate diversion programs, such as composting, for food waste generated by certain businesses, institutions, or cities. Circular agriculture benefits from such measures, as composted food waste can be used to enrich soils.

- **Supporting Research & Development:**
  Policymakers can invest in research and development of circular agriculture technologies and practices, fostering innovation and promoting the adoption of cutting-edge solutions to reduce food waste.

- **Integration with Climate & Sustainability Policies:**
  Circular agriculture practices can be integrated into broader climate change & sustainability policies.
  Aligning food waste reduction with climate action initiatives can create synergies & amplify the positive impact on the environment.
  Fostering collaborations among governments, NGOs, businesses & local communities to collectively address the issue of food waste will ensure full integration of policies.

Examples of Successful Models around the World

The Netherlands- Smart Farming

Dutch farmers have embraced smart farming practices, which include the use of AI-driven sensors, drones, and robots to monitor crops, manage irrigation & apply fertilizers with precision.

These technologies can help reduce the overuse of resources, thereby contributing to circular agriculture.

Japan- Zero Waste Towns

Some communities in Japan have adopted ambitious "zero-waste" goals, aiming to send virtually no waste to landfills.

These towns promote recycling, composting & reducing waste generation through education and community engagement.

Australia- Navigating through Challenges

Australia has adopted sustainable agricultural practices to address challenges such as drought and soil degradation.

Techniques like no-till farming, crop rotation, and the use of drought-resistant crop varieties have helped Australian farmers maintain productivity while conserving natural resources.

USA- Roadmap to 2030: Reducing U.S. Food Waste

WHAT'S NEEDED

$18B
INVESTMENT ANNUALLY

$5B PUBLIC

$11B PRIVATE

$2B PHILANTHROPIC

40+
SOLUTIONS

WASTE REDUCTION

58M
ANNUAL FOOD WASTE DIVERSION (TONS)

IMPACT PER YEAR

$74B NET FINANCIAL BENEFIT

6T GALLONS IN WATER SAVINGS

109M TONS GHG EMISSION REDUCTION POTENTIAL (MT CO2e)

4.3B MEALS FOR PEOPLE IN NEED

60K JOBS CREATED THROUGH SOLUTION IMPLEMENTATION

Sahara

https://refed.org/food-waste/the-solutions/

Relevant Resources

Research & Statistics

- **Food & Agriculture Organization (FAO)**

World Food and Agriculture – Statistical Yearbook 2022

https://www.fao.org/documents/card/en/c/cc2211en

- **Wageningen University & Research- Netherlands**

World-class education and research in the fields of agriculture, food, life sciences, and environmental studies.

- **World Resources Institute (WRI)**

A global research organization that focuses on environmental and sustainability issues, including climate change, water resources & land use.

Books

- "Cradle to Cradle: Remaking the Way We Make Things" by William McDonough & Michael Braungart

  It explores the concept of designing products and systems with sustainability in mind, emphasizing the elimination of waste and pollution.

- "Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist" by Kate Raworth

  It introduces a new economic model that aligns with circular principles and sustainability.

- "The Circular Economy Handbook" by Peter Lacy & Jessica Long

  It provides practical insights and strategies for businesses looking to adopt circular economy principles.

Podcasts

- “The Sustainability Story”

Presented by CFA Institute is an audio interview series of conversations with thought leaders in the world of ESG integration and sustainability.

The topics include anything and everything about where finance intersects with environment, governance, sustainability, social, climate change, biodiversity, human capital management, sustainable investing, impact investing, regulations, standards, and more.

- "The Circular Economy Podcast"

It explores various aspects of the circular economy, featuring interviews with experts & innovators in the field.

- "The Disruptive Environmentalist"

It delves into various sustainability topics and often discusses circular economy concepts.

Shows & Series

- “Breaking Boundaries-The Science of Our Planet” (Netflix)

David Attenborough and scientist Johan Rockström examine Earth's biodiversity collapse and how this crisis can still be averted.

Strong Message and Action Plan!

- "Rotten" (Netflix)

This documentary series delves into the global food industry but also touches on issues related to waste and sustainability, which are relevant to the circular economy.

"There is food for everyone on this planet, but not everyone eats."

Carlo Petrini

"Cutting food waste is a delicious way of saving money, helping to feed the world and protect the planet"

Tristram Stuart

Sahara

Thank you for your attention☺

Any Questions?