

## Subunit 1.2: the 7Rs of Circular Economy

### Learning goals

- Define the concept of the 7Rs principle within the context of the circular economy.
- Explain the significance of the 7Rs principle in promoting sustainable resource management.
- Identify the seven components of the 7Rs principle: Reduce, Reuse, Recycle, Repair, Refurbish, Rethink, and Remanufacture.
- Explore the role of the 7Rs principle in waste reduction and minimizing environmental impact.
- Understand how businesses can integrate the 7Rs principle into their production and consumption practices.

### Definition

The 7Rs principle is a holistic framework within the circular economy that encompasses a range of strategies to promote sustainable resource management, waste reduction, and overall environmental stewardship.

The 7Rs collectively guide businesses, policymakers, and individuals toward more responsible production and consumption patterns.

While there is no single inventor of the 7Rs principle, it reflects the evolution of sustainability concepts and the need for a comprehensive approach to address modern challenges.

The 7Rs Explained:

**Reduce:** Reducing is the first and foremost step in the circular economy. It involves minimizing the consumption of resources and the generation of waste. The idea is to use fewer materials and create less waste, ultimately decreasing the environmental impact of our actions. This can be achieved by using products and resources more efficiently, adopting sustainable consumption habits, and opting for products with longer lifespans.

**Reuse:** Reusing is the practice of using items or products multiple times instead of disposing of them after a single use. It involves finding new ways to use items, refurbishing or repairing them, or passing them on to others. Reuse helps extend the lifespan of products, reduce waste, and conserve resources.

**Repair:** Repairing involves fixing and restoring products that are damaged or no longer functioning correctly instead of discarding them. Repairing items instead of replacing them not only saves money but also reduces the need for new resources and the environmental impact associated with manufacturing new products.

**Refurbish:** Refurbishing takes the repair concept further by not just fixing a product but also improving or upgrading it to extend its life. This can include renovating and modernizing items to make them as good as new. Refurbishing helps retain the value of products and can make them attractive for continued use.

**Recycle:** Recycling is the process of collecting, processing, and converting used materials and products into new ones. It aims to recover valuable materials from waste and divert them from landfills or incineration. Recycling conserves resources, reduces energy consumption, and minimizes environmental pollution.

**Recover:** Recovery involves the extraction of energy or materials from waste streams that cannot be recycled or reused. Methods like waste-to-energy conversion or waste-to-fuel technologies recover energy from waste, reducing the environmental impact of waste disposal. Recovering valuable materials from waste also contributes to resource conservation.

**Reject:** Rejecting is the conscious decision to avoid or refuse products or materials that are harmful to the environment or not in line with circular economy principles. This involves saying no to single-use plastics, excessive packaging, and non-sustainable products. Rejecting unsustainable practices and products can drive positive change and promote sustainable alternatives.

In summary, the 7Rs of the circular economy represent a comprehensive approach to reduce waste, conserve resources, and promote sustainability. By practicing these principles, individuals, businesses, and communities can contribute to a more circular and environmentally friendly economy.

### Success Stories in the Circular Economy

The rise of the circular economy has sparked innovative forms of entrepreneurship that not only align with European sustainability policies but also prove to be profitable.

In today's world, where environmental concerns and sustainable practices are at the forefront of societal consciousness, several initiatives have emerged as beacons of success within the circular economy paradigm. These success stories exemplify the transformative power of circular thinking, showcasing how businesses and communities can thrive while contributing to a more sustainable and eco-friendly future.

The following narratives illustrate the diverse avenues through which circular economy principles can be applied, fostering both environmental stewardship and economic viability. These success stories

inspire a shift towards more conscientious and responsible business practices, demonstrating that profitability and sustainability can go hand in hand in the circular economy landscape.

Let's explore success stories that have embraced this groundbreaking approach:

- **Craigslist:** Craigslist, founded by Craig Newmark in 1995, is a classified advertisements platform that facilitates the reuse and exchange of various goods. Users can buy, sell, or give away items, allowing for local and community-based reuse of items that might otherwise end up discarded (<https://www.craigslist.org/about/founders>).
- **Freecycle:** Deron Beal established Freecycle Network in 2003, creating an online platform where individuals can offer and receive free items within their local communities. The platform's aim is to reduce waste by promoting the reuse of items and preventing them from being thrown away (<https://www.freecycle.org/history>).
- **Patagonia's Worn Wear:** Patagonia's Worn Wear program, initiated by Yvon Chouinard and Rose Marcario, encourages customers to buy and sell used Patagonia clothing. The company repairs, refurbishes, and sells pre-owned items to extend their lifespan and reduce environmental impact (<https://www.patagonia.com/worn-wear.html>).
- **Etsy's Vintage and Upcycled Marketplace:** Etsy, co-founded by Rob Kalin, created a marketplace for artisans to sell vintage and upcycled items. The platform supports sellers who repurpose and transform old materials into new, unique products, promoting creative reuse and sustainable entrepreneurship (<https://www.etsy.com/about/>).
- **Rent the Runway:** Rent the Runway, founded by Jennifer Hyman and Jennifer Fleiss, is a fashion rental service that allows customers to rent high-quality clothing and accessories for special occasions. This initiative promotes clothing sharing and reduces the demand for new clothing purchases.
- **Community Tool Libraries:** While not attributed to a single person, community tool libraries have been established in various locations by local organizers. These libraries lend tools to community members, promoting the sharing and reuse of tools for DIY projects and repairs (<https://www.communitytoollibrary.org/>).
- **BorrowLenses:** founded by Mark Gurevich and Max Shevyakov, it is a platform that rents out photography and videography equipment. By providing access to high-quality gear on a rental basis, BorrowLenses reduces the need for photographers and videographers to purchase new equipment for short-term projects (<https://www.borrowlenses.com/about-us>).

## Success stories on waste management

- San Francisco's Zero Waste Initiative: San Francisco's ambitious goal to achieve zero waste by diverting 100% of its waste from landfills has been a remarkable success. Through comprehensive recycling, composting, and waste reduction programs, the city has achieved an impressive 80% diversion rate, setting an example for other urban areas (<https://sfenvironment.org/zero-waste>).
- Toyota's Closed-Loop Manufacturing: Toyota's manufacturing plants have implemented a closed-loop system where waste generated during production is minimized, and any waste produced is recycled or repurposed within the manufacturing process. This initiative showcases how waste reduction can be integrated into industrial practices (<https://global.toyota/en/sustainability/environment/challenge2050/challenge02/>).
- São Paulo's Recycling Cooperatives: In São Paulo, Brazil, recycling cooperatives have formed to collect and process recyclable materials, providing income opportunities for marginalized communities while reducing waste in landfills. This initiative not only addresses waste management but also social and economic challenges (<https://www.cnn.com/2017/05/02/americas/brazil-recycling-sao-paulo/index.htm>).
- The Ocean Cleanup Project: Founded by Boyan Slat, The Ocean Cleanup Project aims to remove plastic waste from the world's oceans. Through innovative technologies like the "Interceptor" that captures plastic waste from rivers before it reaches the ocean, the project demonstrates the potential to address plastic pollution at its source (<https://theoceancleanup.com>).
- EcoBricks in the Philippines: The EcoBrick movement in the Philippines encourages citizens to stuff non-recyclable plastic waste into plastic bottles to create dense, reusable building blocks. These EcoBricks are used in construction projects, reducing plastic waste while addressing housing needs (<https://www.ecobricks.org/>).
- Waste-to-Energy Facilities in Sweden: Sweden's waste management success story involves using waste-to-energy facilities to incinerate non-recyclable waste and generate heat and electricity. The country's advanced infrastructure has led to reduced landfill waste and increased energy production from waste (<https://sweden.se/nature/the-swedish-recycling-revolution/>).
- Recycling Revolution in Taiwan: Taiwan's comprehensive recycling program, including mandatory waste separation and strict recycling regulations, has led to a recycling rate of over 50%. The government's commitment to waste reduction has transformed waste management practices and behavior among citizens (<https://www.taiwannews.com.tw/en/news/3344416>).

- Circular Economy Practices by Unilever: Unilever, a global consumer goods company, has embraced circular economy principles by designing products for durability, recyclability, and reuse. The company's initiatives include sourcing sustainable materials, reducing packaging waste, and promoting recycling (<https://www.unilever.com/sustainable-living/>).

### *Practical activity: Exploring the 7Rs of the Circular Economy*

*Objective:* Deepen your understanding of the 7Rs of the circular economy through writing and personal reflection.

*Materials:* 1 pen, 1 sheet of paper.

*Time:* 25 minutes.

*Methodology:*

1. Introduction (2 minutes): Begin by reading and reflecting on the meaning of the 7Rs of the circular economy: Reduce, Reuse, Repair, Refurbish, Recycle, Recover, and Reject. Understand the importance of each of these initiatives in promoting sustainability and waste reduction.
2. Select a Sheet of Paper (1 minute): Choose a blank sheet of paper or an empty page in your notebook or journal as the space for your reflection activity.
3. Reduce (2 minutes): Dedicate two minutes to reflect on Reduce. Write down how you can reduce consumption and waste in your daily life. Think about small changes you can make.
4. Reuse (2 minutes): Next, reflect on Reuse. Write about how you can incorporate reuse into your routines. Consider ways to give items a second life instead of discarding them.
5. Repair (2 minutes): Move on to Repair. Reflect on the value of repairing items rather than replacing them. Write about the importance of preserving and extending the life of products.
6. Refurbish (2 minutes): Focus on Refurbish. Write down how refurbishing or renovating items can contribute to the circular economy. Think about creative ways to refurbish items.
7. Recycle (2 minutes): Reflect on Recycle. Write about the recycling process and the significance of recycling materials to reduce waste and conserve resources.

8. Recover (2 minutes): Explore the concept of Recover. Write about the recovery of resources and materials from waste streams. Consider the environmental benefits of resource recovery.
9. Reject (2 minutes): Finally, think about Reject. Write down instances where you can consciously reject single-use or non-recyclable items. Reflect on the impact of your choices.
10. Conclusion (2 minutes): Summarize your key insights and takeaways from reflecting on each of the 7Rs. Consider how you can incorporate these principles into your daily life.

*Food for thoughts:*

Document and reflect on how these principles are applied or could be applied in different contexts.

Consider how you can incorporate the 7 Rs of circular economy into your daily life and decision-making processes, fostering a deeper understanding of their relevance in the green and circular economy.

Reflect on the broader implications of these principles for entrepreneurship in sustainable and circular business practices.

*Learning material suggestions:*

The 7 Rs of Waste Reduction Mecklenburg County Government - [https://www.youtube.com/watch?v=ZJ28L0H0p0A&ab\\_channel=MecklenburgCountyGovernment](https://www.youtube.com/watch?v=ZJ28L0H0p0A&ab_channel=MecklenburgCountyGovernment)