

Session 31. Circular economy and policies
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CIRCULAR IMPACT STRATEGIES: NEW VENTURES' CONTRIBUTIONS TO CIRCULARITY IN INDUSTRIAL VALUE CHAINS

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1. Introduction – SoTechN Factory

Social and Technological Innovation Factory for Low-Carbon and Circular Industrial Value Chains

- Develop a collaborative environment aimed at connecting industry with society in a community of mission-oriented social innovators (7 European regions)
- Support entrepreneurs in their drive to increase the circularity of industrial product value chains;
- Promote the development of highly scalable technologies to drive systemic change and make value chains more circular.
- **Target value chains** (EU Action Plan for Circular Economy):
 - Packaging and plastics
 - Textiles
 - Food, water & nutrients



SoTechN Factory consortium

1. Introduction – SoTecIn Factory

Social and Technological Innovation Factory for Low-Carbon and Circular Industrial Value Chains

- The project offers both financial support and training to 50 technologically savvy entrepreneurs with sustainable solutions that use R-strategies;
- SoTecIn Factory will co-develop **30 pre-market technological demonstrators**, which will be presented at the Start-up Day on *May 20, 2025 at Porto Inova, Porto, Portugal*
 - *Solutions selected per value chain:*
 - 11 Textiles
 - 13 Food, water & nutrients
 - 6 Plastic and packaging solutions



The poster is for the SOTECIN FACTORY Start-up Day. It features a blue background with a large white circle in the center. Inside the circle, it says "30 Solutions for Circular Industry" and "Discover them all in one event". A green arrow curves around the circle. In the top right corner, there is a green speech bubble that says "SAVE! THE DATE!". Below the circle, it says "Join SoTecIn Factory Start-up Day" and "19/20 May 2025 | Porto". At the bottom, there are four icons representing different value chains: "Plastics & Packaging" (a recycling symbol), "Food, Water & Nutrients" (a water drop), "Textiles" (a t-shirt), and "Plastics & Packaging" (a recycling symbol). The SOTECIN FACTORY logo is in the top left corner, and the European Union logo is in the bottom left corner. The website "www.sotecinfactory.com" is in the bottom right corner.

SOTECIN FACTORY

SAVE! THE DATE

30 Solutions for Circular Industry

Discover them all in one event

Join SoTecIn Factory Start-up Day

19/20 May 2025 | Porto

Funded by the European Union

www.sotecinfactory.com

Plastics & Packaging

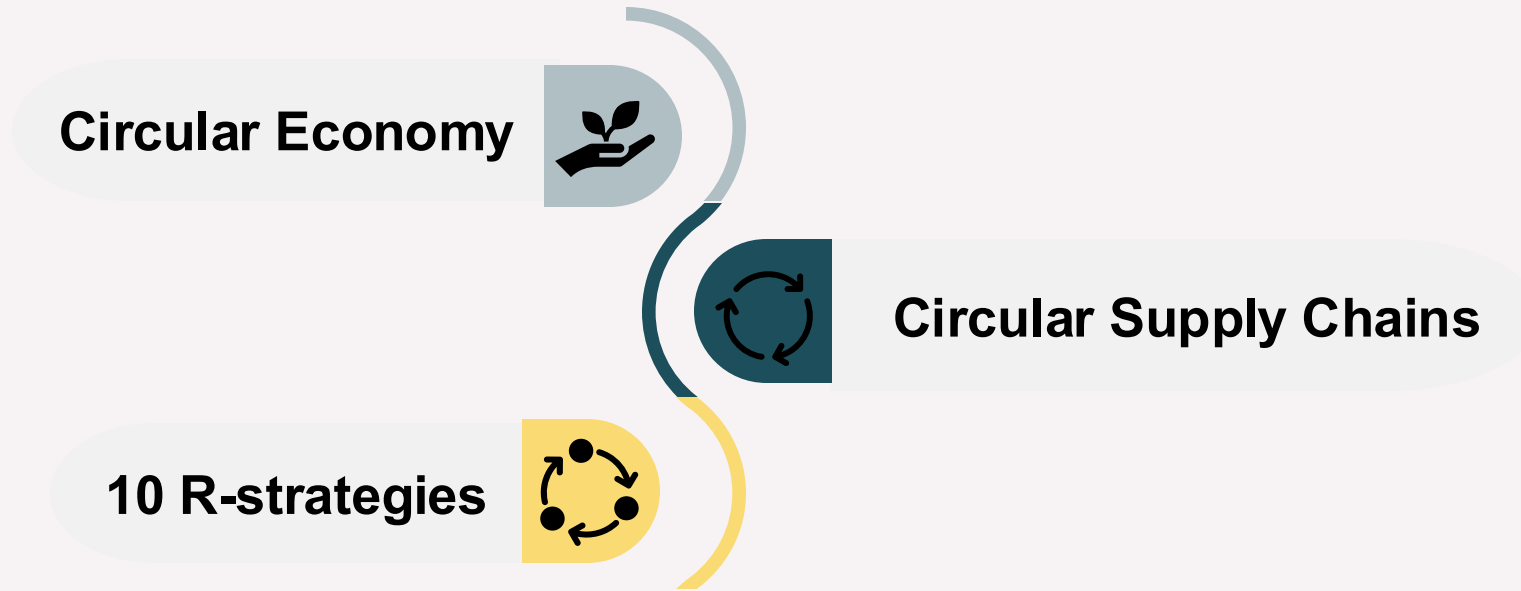
Food, Water & Nutrients

Textiles

1. Introduction

- Transition to a Circular Economy can foster sustainability by minimizing resource usage and waste;
- When implementing circular strategies, new ventures have an advantage over established companies (Awana et al., 2023; Van Opstal and Borms, 2023);
- The implementation of R-strategies fosters circular pathways in value chains (VCs) from smarter product use and manufacture, to extending the lifespan of products and to the useful application of materials.
- Research question: ***How can new ventures' circular impact strategies contribute to value chain circularity?***

2. Theoretical background



2. Theoretical background

Circular Economy



- Alternative model to replace the unsustainability of the current linear economic model (Geissdoerfer et al., 2017; Kirchherr et al., 2017);
- Aims to minimize waste and positively impact the economic, social and environmental dimension of sustainable development (Korhonen et al., 2018);
- End-of-life strategies are replaced by with circular resource flows of goods, materials or energy (Farooque et al., 2019).

- Application of CE principles across SC's operations and processes: **Circular Supply Chains** (de Angelis et al., 2018; Farooque et al., 2019).
- The configuration of a CSC implies the implementation of a set of CE strategies, namely the **R-strategies** (de Lima et al., 2021; Diaz et al., 2021; Potting et al., 2017);
- Requires interaction between organizations at different stages ensure that products circulate in loops and enter the SC at various lifecycle stages (Farooque et al., 2019; de Lima et al., 2021).



Circular Supply Chains

2. Theoretical background

10 R-strategies



- Strategies to help achieve and increase circularity along the value chain;
- 10 R-strategies framework: from R0 to R9, according to their level of circularity and priority in a CE (Potting et al., 2021; Zimmermann et al., 2024)
- **Three groups:** (i) smarter product use and manufacture; (ii) lifespan of product and its parts extension; (iii) useful application of materials (Potting et al., 2017; Morseletto, 2020)



R0. Refuse

R1. Rethink

R2. Reduce

R3. Reuse

R4. Repair

R5. Refurbish

R6. Remanufacture

R7. Repurpose

R8. Recycle

R9. Recover

Smarter product use and manufacture

Lifespan of product and its parts extension

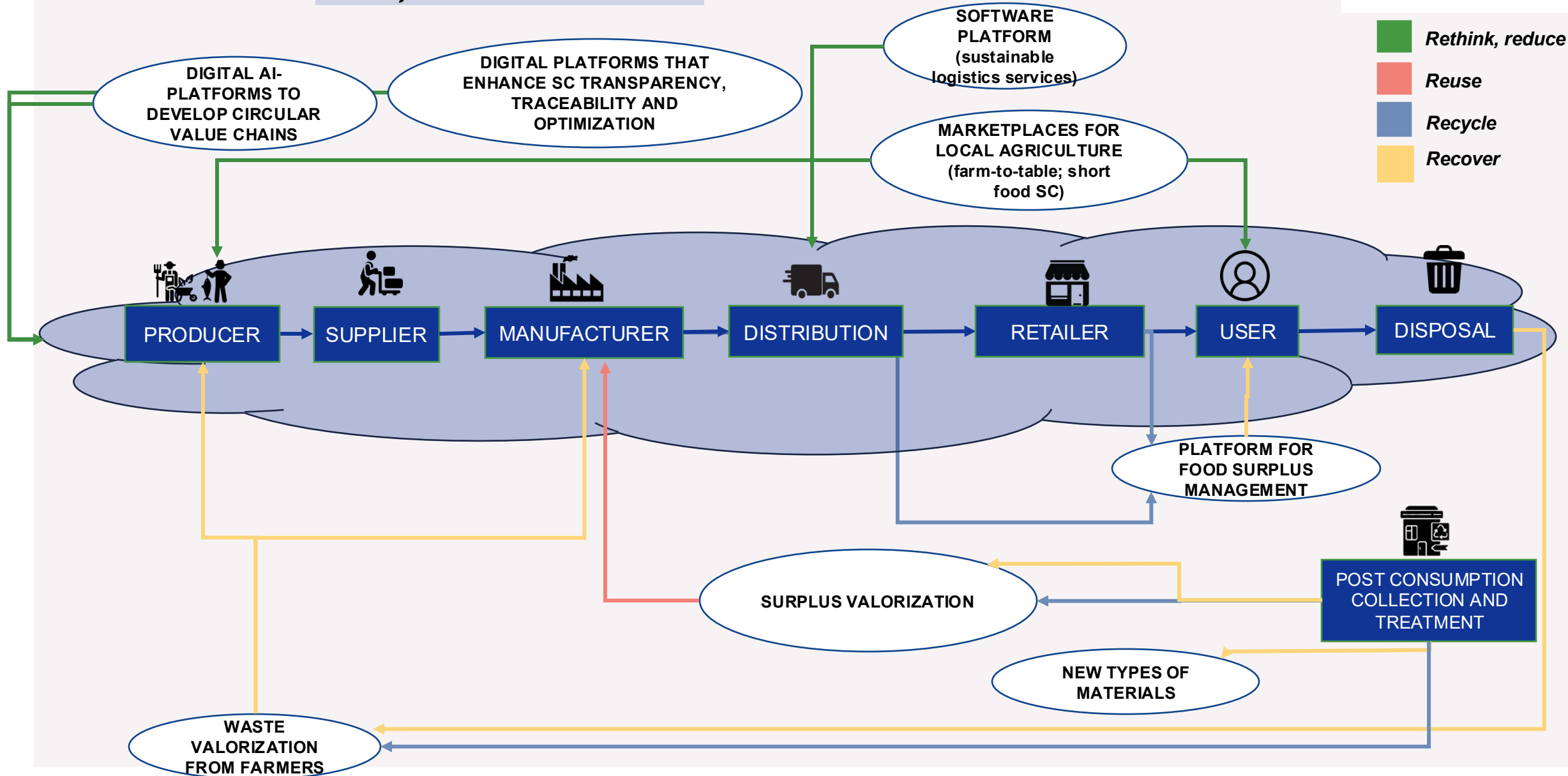
Useful application of materials

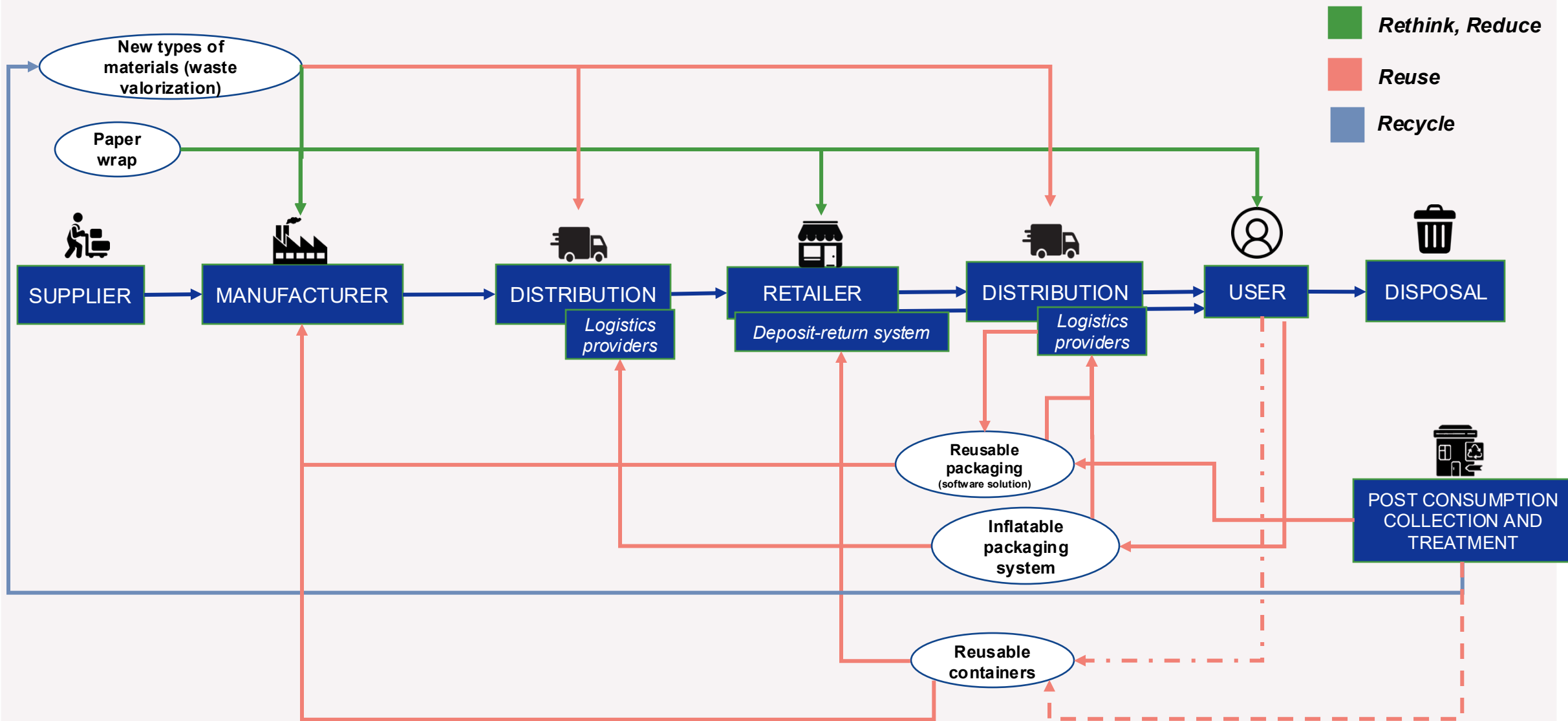
3. Methodology

Qualitative multiple case study methodology

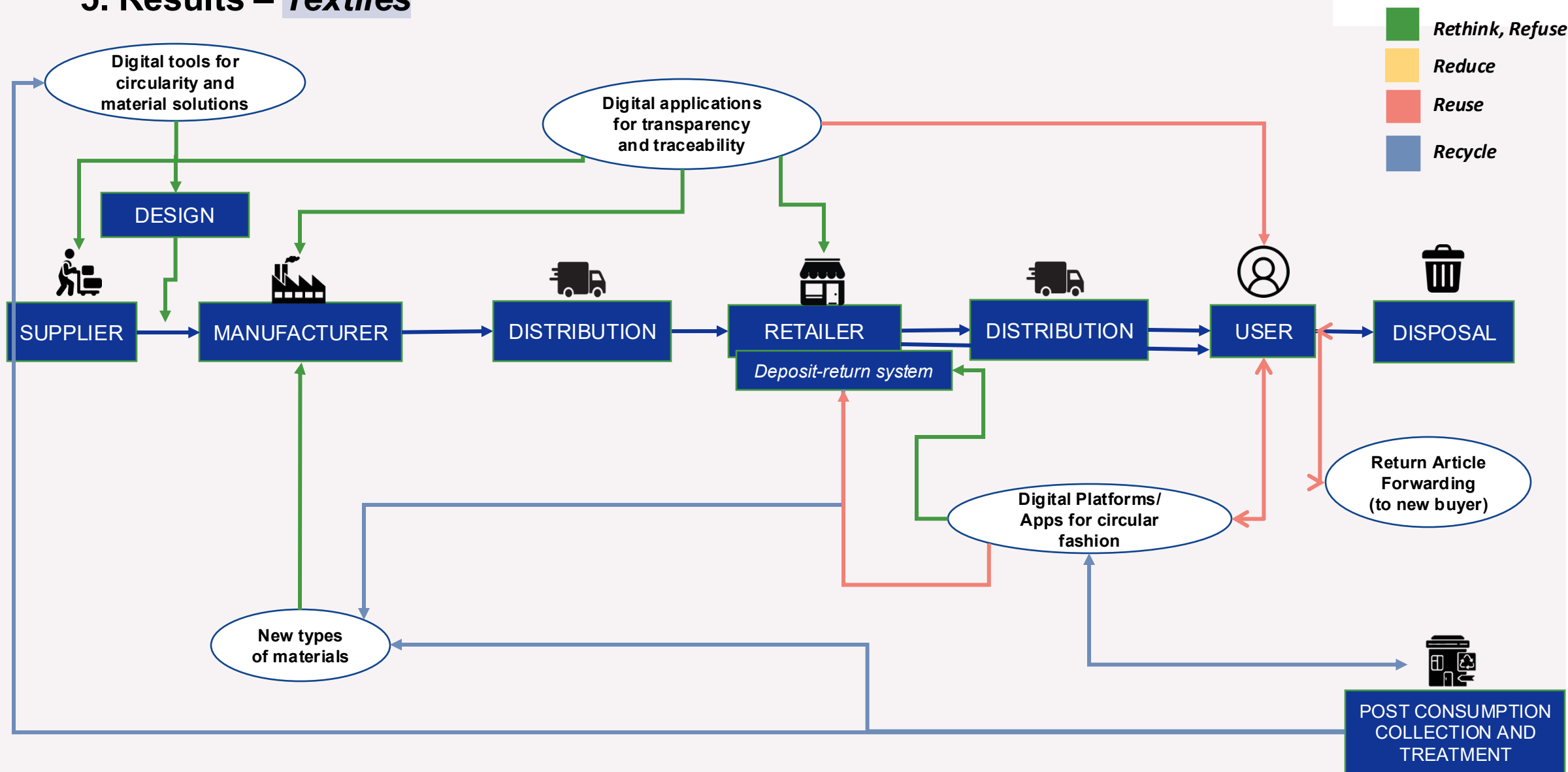
- **Unit of analysis:** 27 new ventures supported by a Horizon Europe project (SoTechIn Factory)
 - 12 from Food, water and nutrients; 9 from Textiles and 6 from Packaging and Plastics
- **Criteria for case selection:** (3 ventures excluded after applying these criteria)
 1. New venture;
 2. Develop solutions that contribute to circularity (circular R-strategy).
- **Data collection:**
 - Surveys;
 - Semi-structured interviews (founders/CEOs);
 - Document analysis (application for the project; impact assessment tool; demonstrator implementation plan; video pitch);
 - Data triangulation: Validation workshops and secondary data sources (websites).
- **Data analysis:** NVivo qualitative data analysis software

5. Results – *Food, Water & Nutrients*





5. Results – Textiles



5. Conclusions

- There are different approaches to circular R-strategies, based on the particularities of each value chain
- Starting point (transversal to all sectors): **smarter product use and manufacture** that enables the development of new solutions with potential to impact the whole chain.

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Smarter product use and
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Lifespan of product and
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Useful application of
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SOTECIN
FACTORY

Ready to drive change in value chains and make a positive impact with like-minded professionals?

Join our collaborative community of industry experts and support social innovation for a more sustainable future!

Join our LinkedIn community!

[Innovative Minds: SoTecIn Factory Community](#)



Thank you!

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