PhD in AGRI-FOOD SCIENCES, TECHNOLOGIES AND BIOTECHNOLOGIES - UNIMORE
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UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

Circular Economy models, policy impacts in Agrifood value chains

General objectives

The study intends to explore and illustrate the theoretical and applicative potential of a transition from the current linear production model to a new circular economy approach in the agri-food value chains from the perspective of long-term sustainability, valorizing the innovation impacts

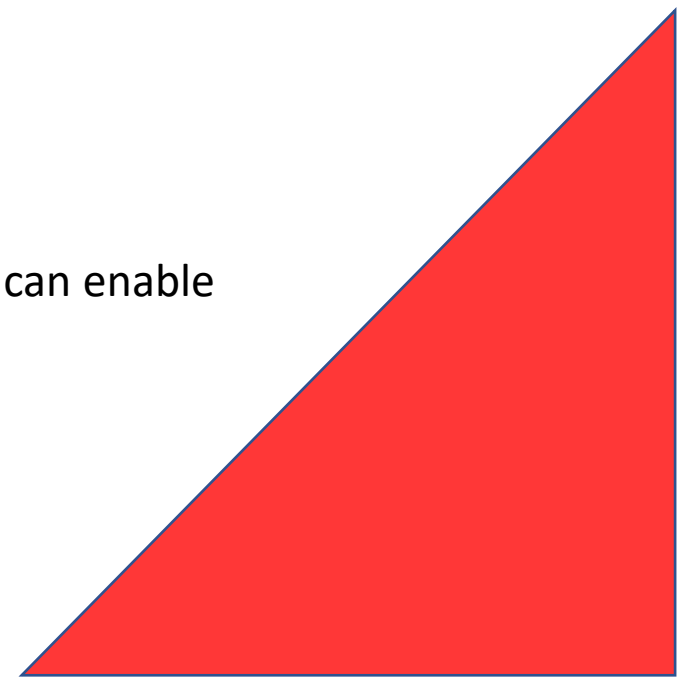
Research Questions:

1) How can innovation enable surplus food recovery along the agri-food value chain?

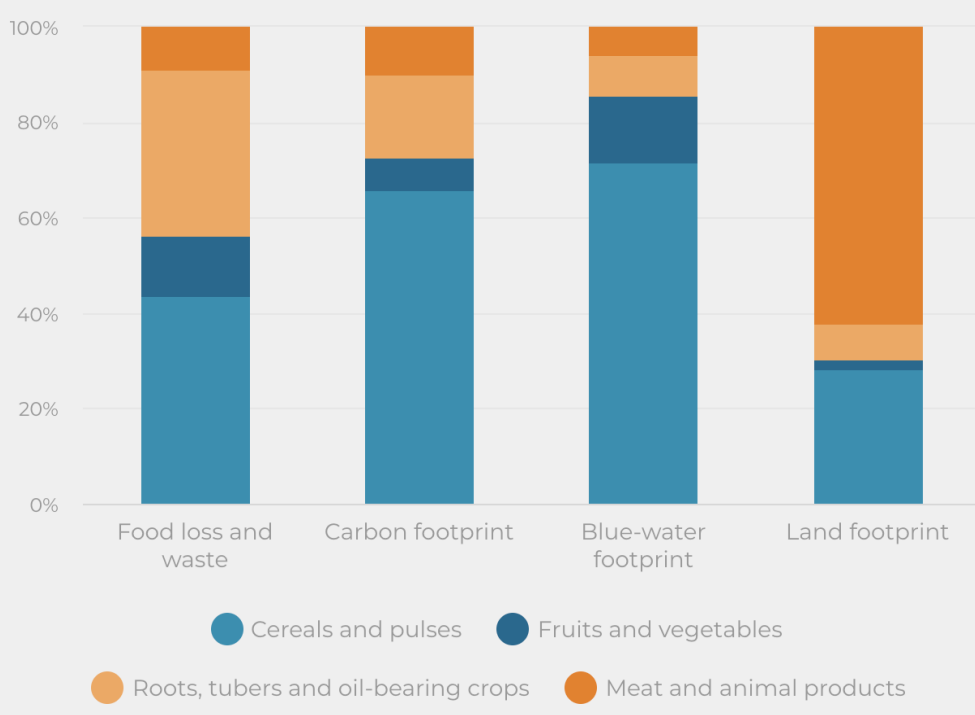
focus on:

- the type of technological solutions
- the different objectives with respect to food waste recovery
- the supply chain stage that represents.

2) How does the collaboration with all the stakeholders involved in Agri-food value chains can enable better solutions for food waste recovery



MAIN ENVIRONMENTAL IMPACTS OF AGRIFOOD



Agriculture and the food supply chain
- generate 30% of global emissions
- are responsible for almost all land use
- use 70% of the total water consumption in human activities each year.

However, there is a clear lack of advanced tools to measure and manage the sustainability of the food sector (also in relation to other sectors).

(Crippa, M., Solazzo, E., Guizzardi, D., Monforti-Ferrario, F., Tubiello, F. N., & Leip, A. J. N. F. (2021). Food systems are responsible for athird of global anthropogenic GHG emissions. Nature Food, 2(3), 198-209.)

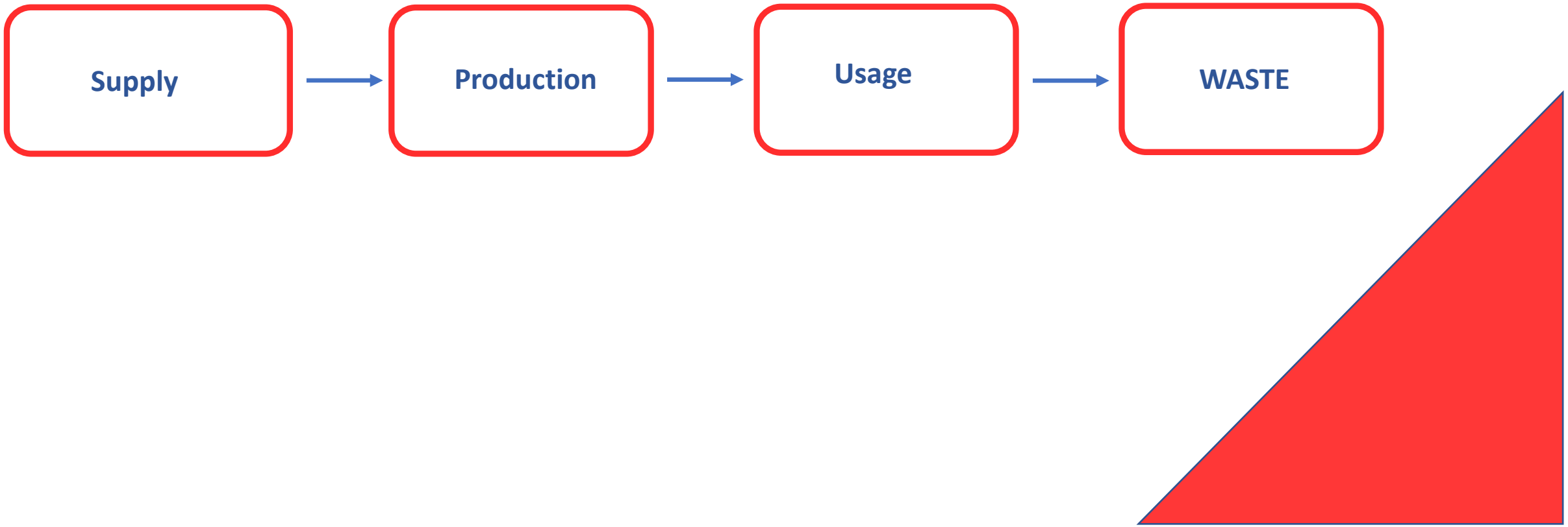
The Food Waste Hierarchy

Most favoured option

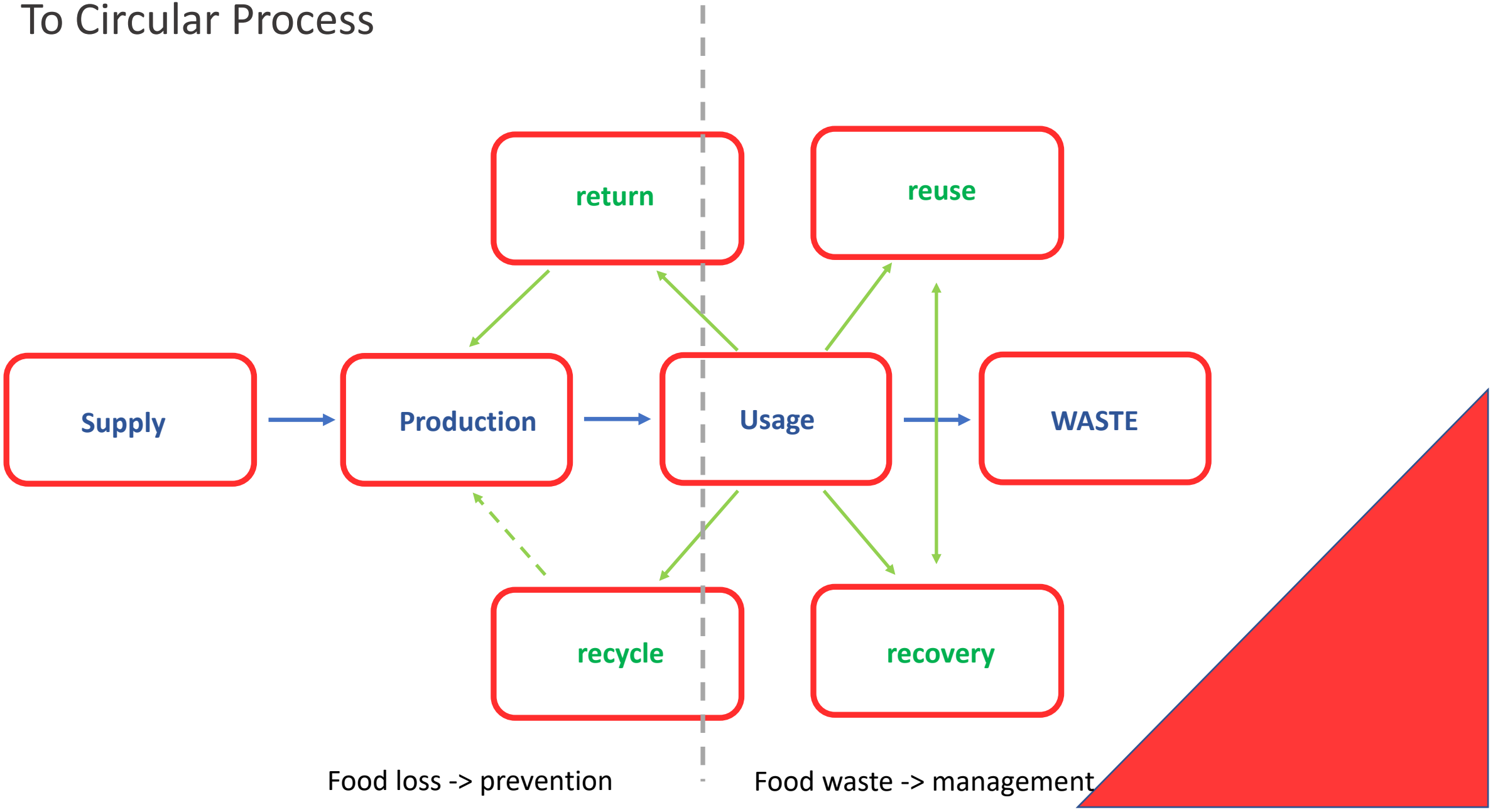
Least favoured option

EU Waste Framework Directive (EC, 2008)

From Linear Process



To Circular Process

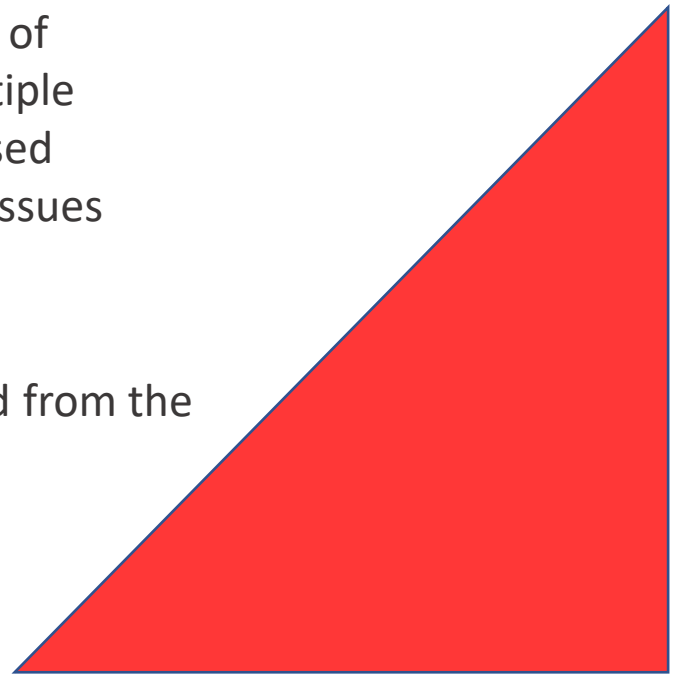


Methodology

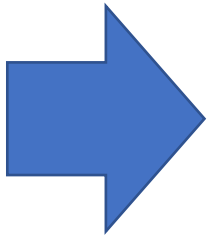
- Extensive review of literature
- Review of themathic report and official documents from policy makers, organizations, authorities….
- Qualitative Research
- Secondary source adoption
- Case study as verification of methodological framework

Given the nature of our research questions and in order to compare a sufficient number of cases looking for both similarities and differences across them to reach a taxonomy multiple semi-structured interviews have been adopted as a research method. Interviews are based on a predetermined list of questions but they leave space to the participants to expose issues and comments.
(Segal et al., 1995; Bauer et al., 2000, Longhurst, 2003).

Secondary sources have been adopted to complete the descriptive information collected from the technology providers. (Seuring and Gold 2012).



- Identification of main structural criticalities of agri-food sector
- Identification of main drivers of Food loss and waste production
- Identification of main barriers for innovation



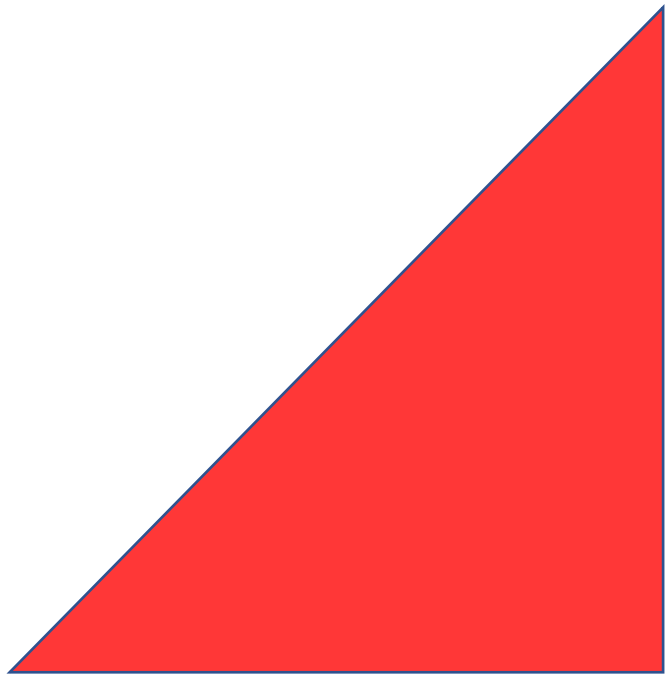
- Identification of main intervention options and strategies
- Identification of main solution for FLW management
- Identification of new business models related to technological/non-technological solution

Main outcomes

- Better understanding of opportunities related to the applied circular approach
- Better understanding of main drivers and causes behind Food Loss and Waste
- An exhaustive taxonomy of main solution for Food Recovery related to the respective stages of the food value chain
- In-depth analysis of policy framework
- Assessment of sectoral innovation mechanism

Research enhancement and possible exploitation

- Insights for Reserach providers -> focus on TT and capacity building
- Insights for companies -> focus on process innovation, new business model, new potential markets
- Insights for Policy makers -> focus on improving quality and efficacy of policy design and assessment



Thank you

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