

Impacts of food waste prevention



ABF
Institute of
Waste Management
and Circularity

Ladurner, T.¹, Scherhauser, S.^{1*}, Gollnow, S.¹, Luck, S.¹, Mesiranta, N.²,
Närvänen, E.², Dimitrov, I.³, Obersteiner, G.¹

¹ University of Natural Resources and Life Sciences BOKU Vienna, Institute of Waste Management and Circularity, Austria

² Tampere University, Finland

³ CogZum Bulgaria OOD, Bulgaria

*Contact: Silvia Scherhauser (silvia.scherhauser@boku.ac.at)

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Introduction

Food waste can be reduced by the implementation of effective prevention measures, such as:

- Forecasting software, to better predict supply and demand at retail or at food service
- Digital market places, to create new markets for food by-products.
- Networks; to redistribute surplus food or by-products from production or processing industry.
- Mobile applications; to manage food at consumers more efficiently (*Example on the right*).

Method

The environmental impacts are calculated using life cycle assessment (LCA). The following elements are considered in the assessment of food waste prevention scenarios, based on Caldeira et al (2019):

- ✓ the environmental impacts associated with the **production, processing, retail, storing and cooking of the food**,
- ✓ the environmental impacts associated with the **waste management**, and
- ✓ the environmental impacts caused by **the implementation of the measure (e.g. IT usage)**.

The **BASELINE (no action scenario)** is compared with the **DEMONSTRATION (Prevention action scenario)**.

Results

Considering the impact category climate change the preliminary results show that the environmental benefits of food prevention are in most cases greater than the environmental impacts of the increased use of digital tools (net negative emissions). However, the prerequisite is that a waste reduction potential of at least 5 percent is achieved.

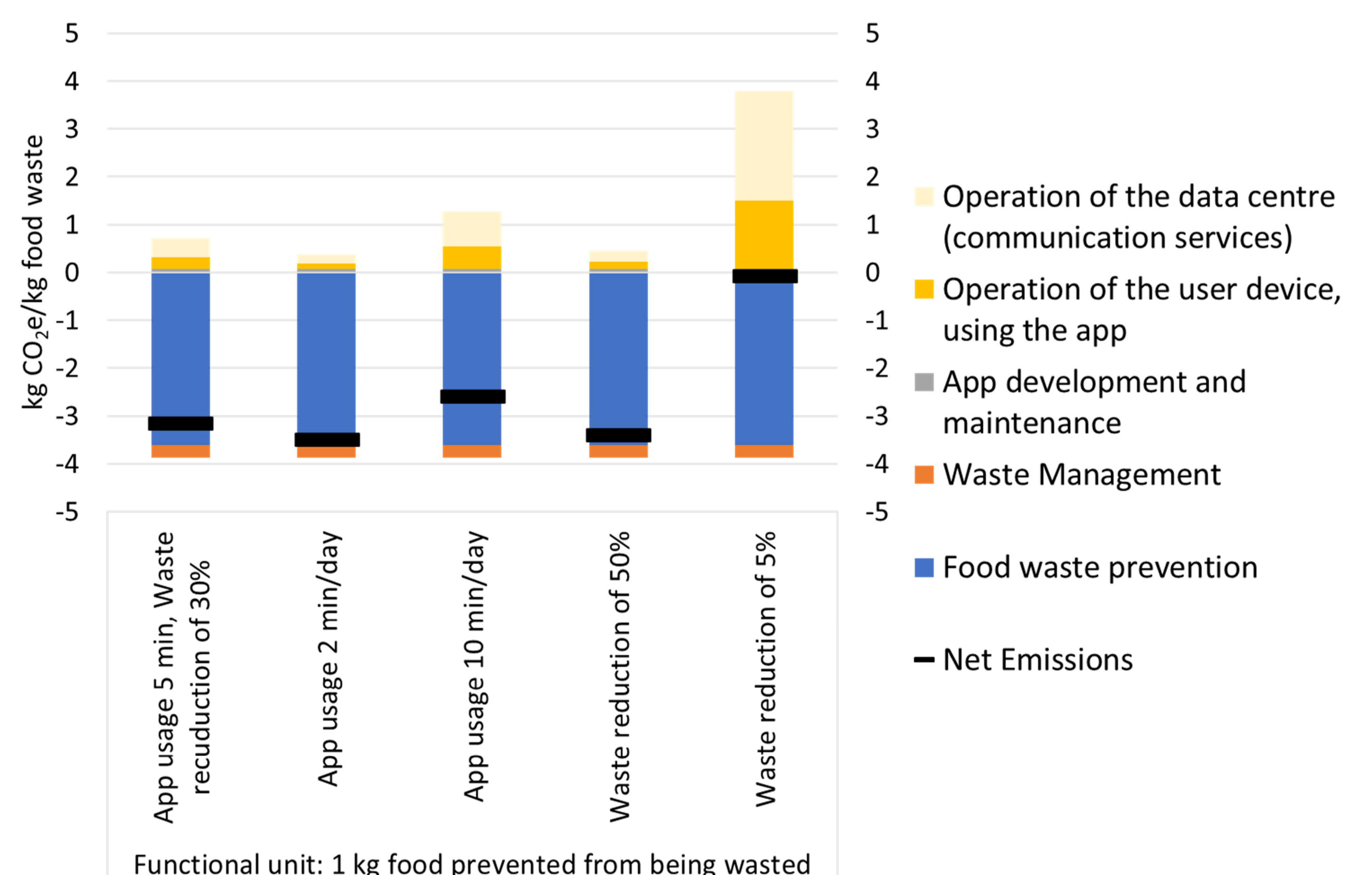
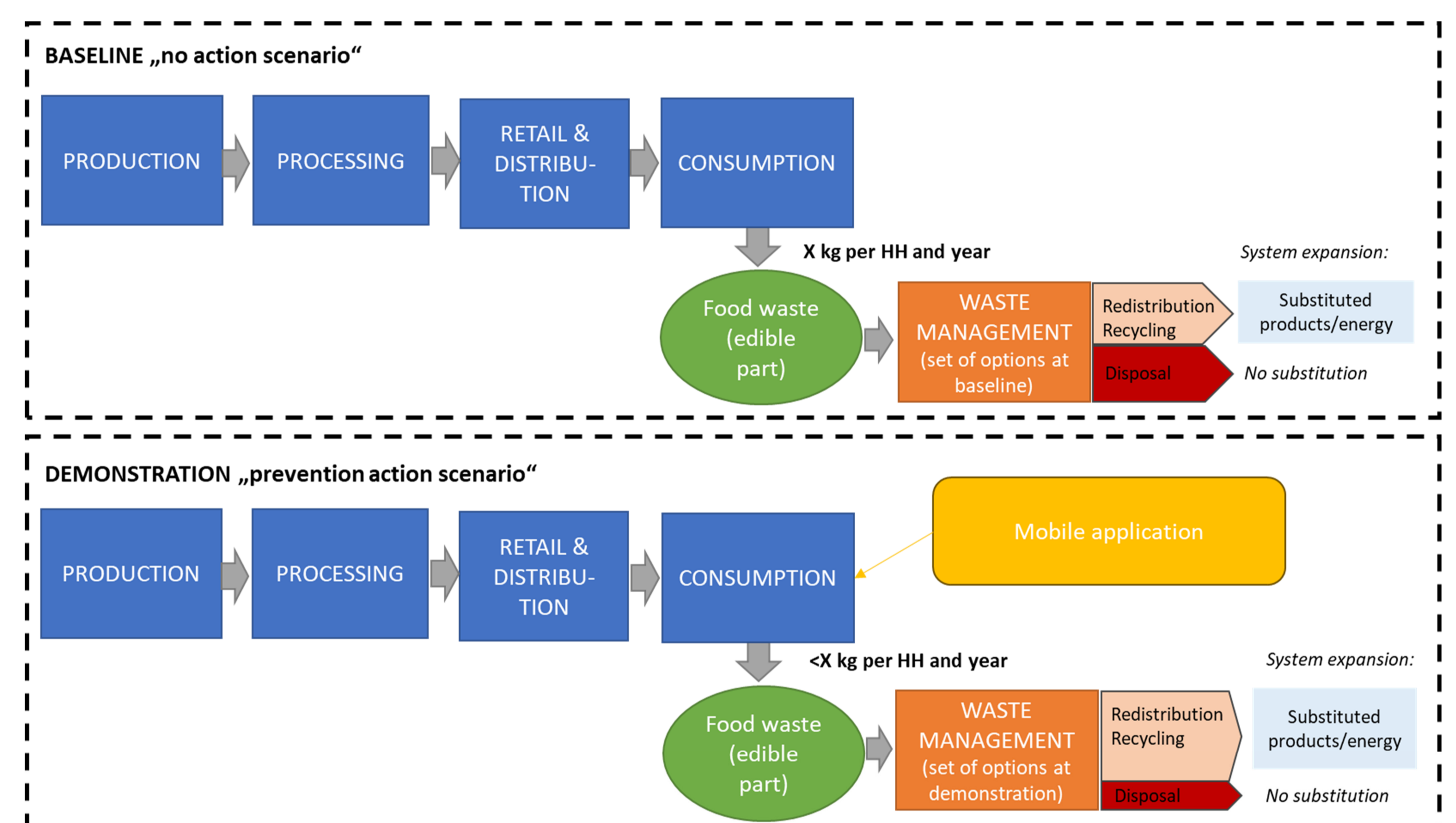
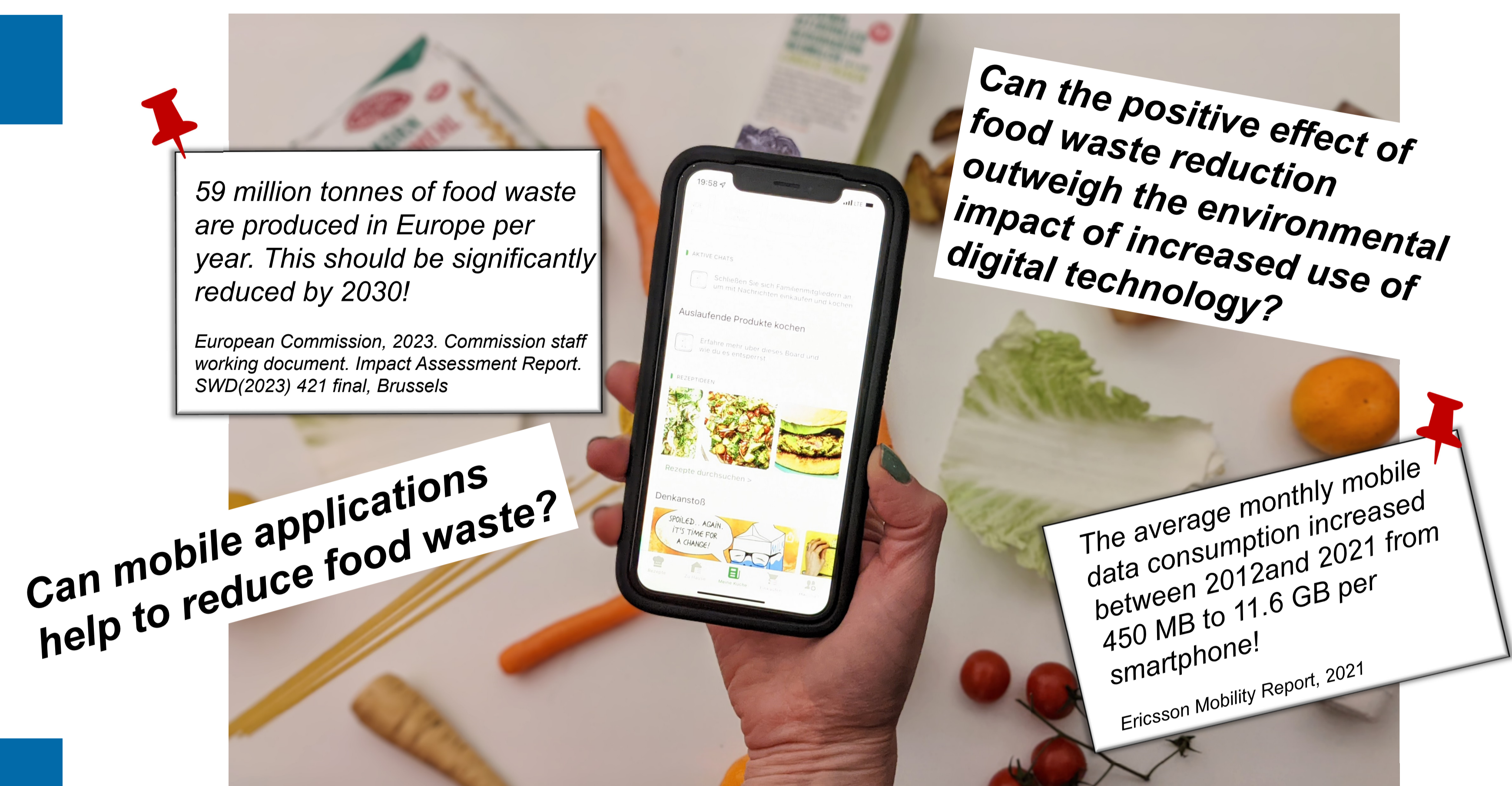


Multi-actor design of low-waste food value chains through the demonstration of innovative solutions to reduce food loss and waste
(Nov 2020 – Feb 2025)

Horizon 2020 Research Project
27 Research institutions and company partners
Coordination: Tuscia University (IT)
ABF-BOKU leads the work package on the "Evaluation of Innovations" (WP1)




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Outlook

Within the LOWINFOOD project, real data (e.g. on the amount of waste, duration of app use) is collected during the demonstration of the different prevention measures. This enables a detailed analysis of the results and a consideration of further impact categories (e.g. water, resource use) in order to identify potential for improvement.

