

Innovative Solutions to Reduce Food Waste in Restaurants

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Vaasan yliopisto
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Lotta Alhonnoro

- ▶ Postdoctoral researcher
- ▶ D. Sc. (Econ & Bus. Adm.), Marketing
- ▶ Waste Insight team, SC-Research, University of Vaasa
- ▶ Background: marketing, consumer behaviour, food waste research
- ▶ Passion: solutions to sustainable way of living
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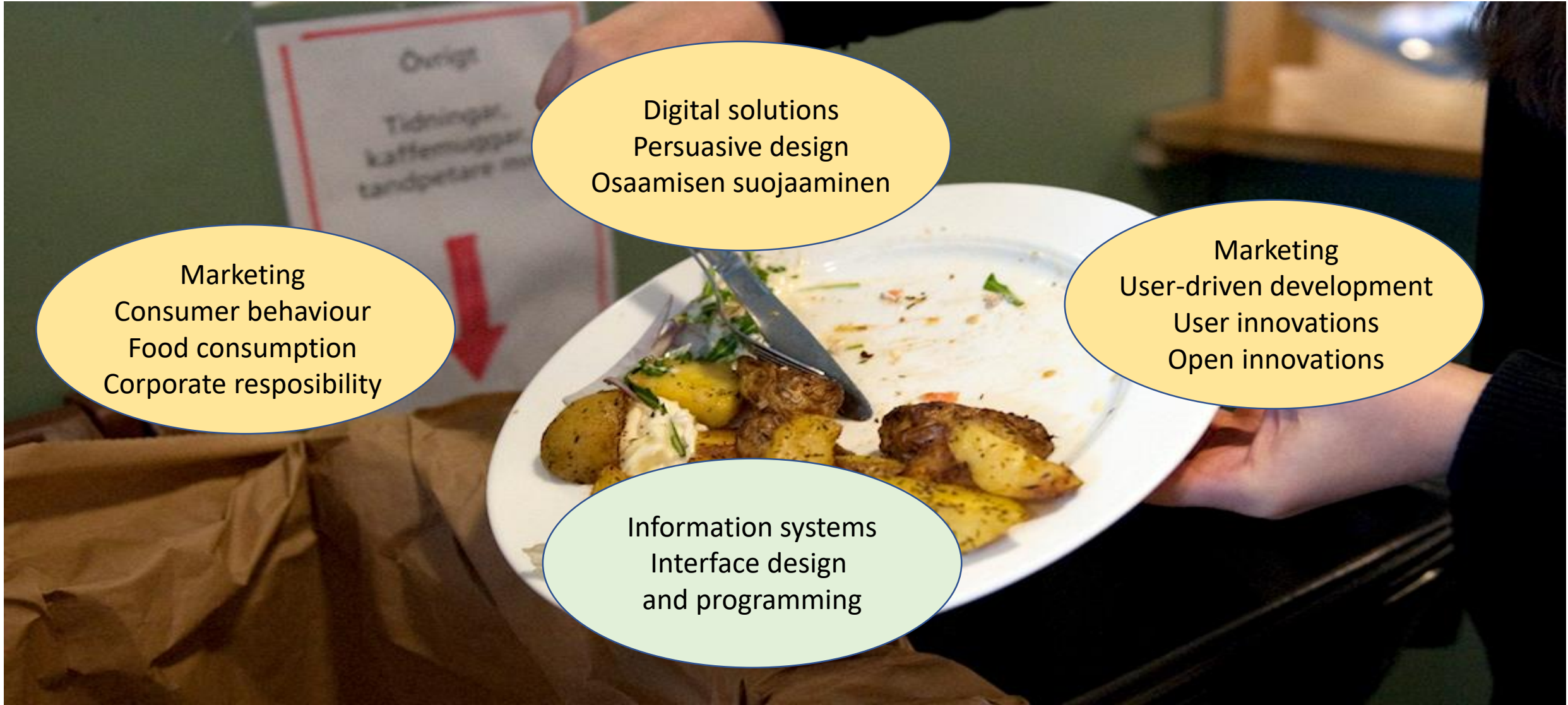
FOOD WASTE

- Accounts for 8% of global greenhouse gas emissions (FAO, 2019)
 - Takes up around 30% of the world's agricultural land (FAO, 2019)
- Represented as its own country, the third largest greenhouse gas emitter, behind China and the United States (FAO 2013)

If current trends continue, global food waste at the consumer stage will double by 2050 (Blondin & Attwood 2022)

United Nations Sustainable Development Goal 12.3 calls for halving global food loss and waste by 2030

'Waste Insight' team's expertise



Digital solutions
Persuasive design
Osaamisen suojaaminen

Marketing
Consumer behaviour
Food consumption
Corporate responsibility

Marketing
User-driven development
User innovations
Open innovations

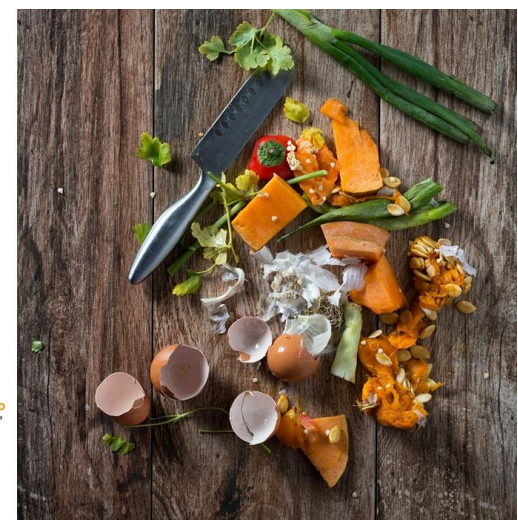
Information systems
Interface design
and programming

Waste Insight: reducing food waste project by project



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Tulevaisuuden hävikkiä vähentävä buffetruokailu



2023 - 2025



PAJATSO

Ruokahävikin liiketoimintaekosysteemiä rakentamassa
1.8.2021 - 31.12.2022

luke.fi/pajatso



2021 - 2022

Action Plan

Seinäjoen ammattikorkeakoulu
Seinäjoki University of Applied Sciences

SeAMK
SEINÄJOKI AMMATTIOPISTO
SEINÄJOKI UNIVERSITY OF APPLIED SCIENCES



2018 - 2023

ECOWASTE 4 FOOD
Interreg Europe
European Union
European Regional Development Fund

RUOKAHÄVIKIN VÄHENTÄMISEN TOIMINTASUUNNITELMA ETELÄ-POHJANMAALLE

2017 - 2020

2019 - 2021

Lotta Alhonnoro, SC-Research



Determined work pays off...



**In Lapua secondary school total food waste
per diner 90g → 48g = -46%**

Financial saving of approx 2000 e/month



HOW

Our projects tackle food waste reduction through

1. Food waste management forecasting model
2. Socio-cultural change
3. Continuous improvement

Food waste management forecasting model

The key objective:

To pilot and demonstrate the **use of machine learning** to predict the number of diners and the amount of wastage

-> if we can anticipate the number of diners and if we follow the recipe carefully, the total amount of waste will be reduced

-> predicting losses helps:

- recipe development,
- estimating portion sizes and
- identifying types of wastage (areas for improvement)

Food waste management forecasting model

DATA

Canteen

- Total food waste
- Amount of diners
- Recipe

School

- Amount of pupils
- Schedules
- Absences

Open data

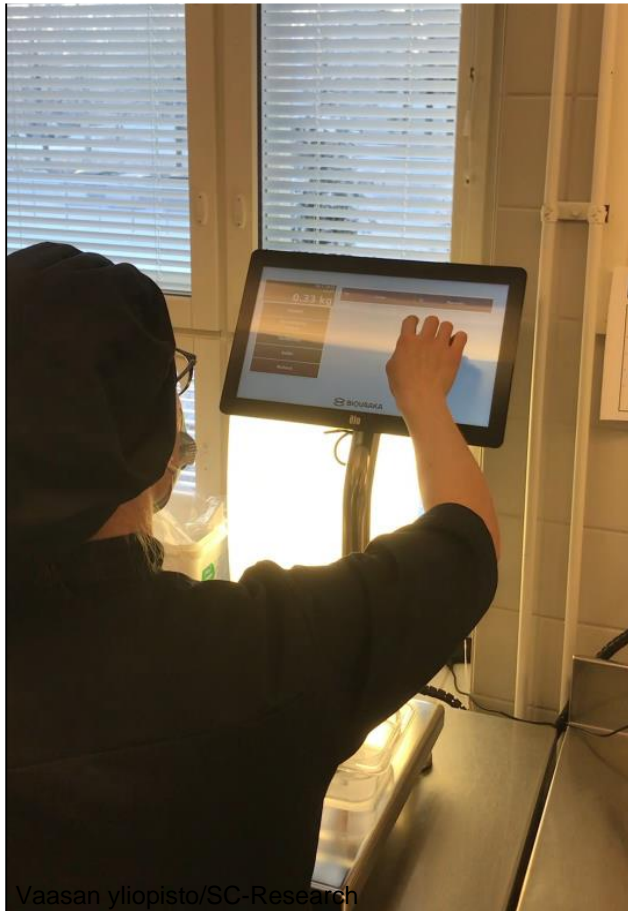
- Weather
- Morbidity (THL – Finnish institute for health and welfare)

+ AUTOMATION

Data flow

Interfaces

Measuring food waste and amount of diners



Vaasan yliopisto/SC-Research

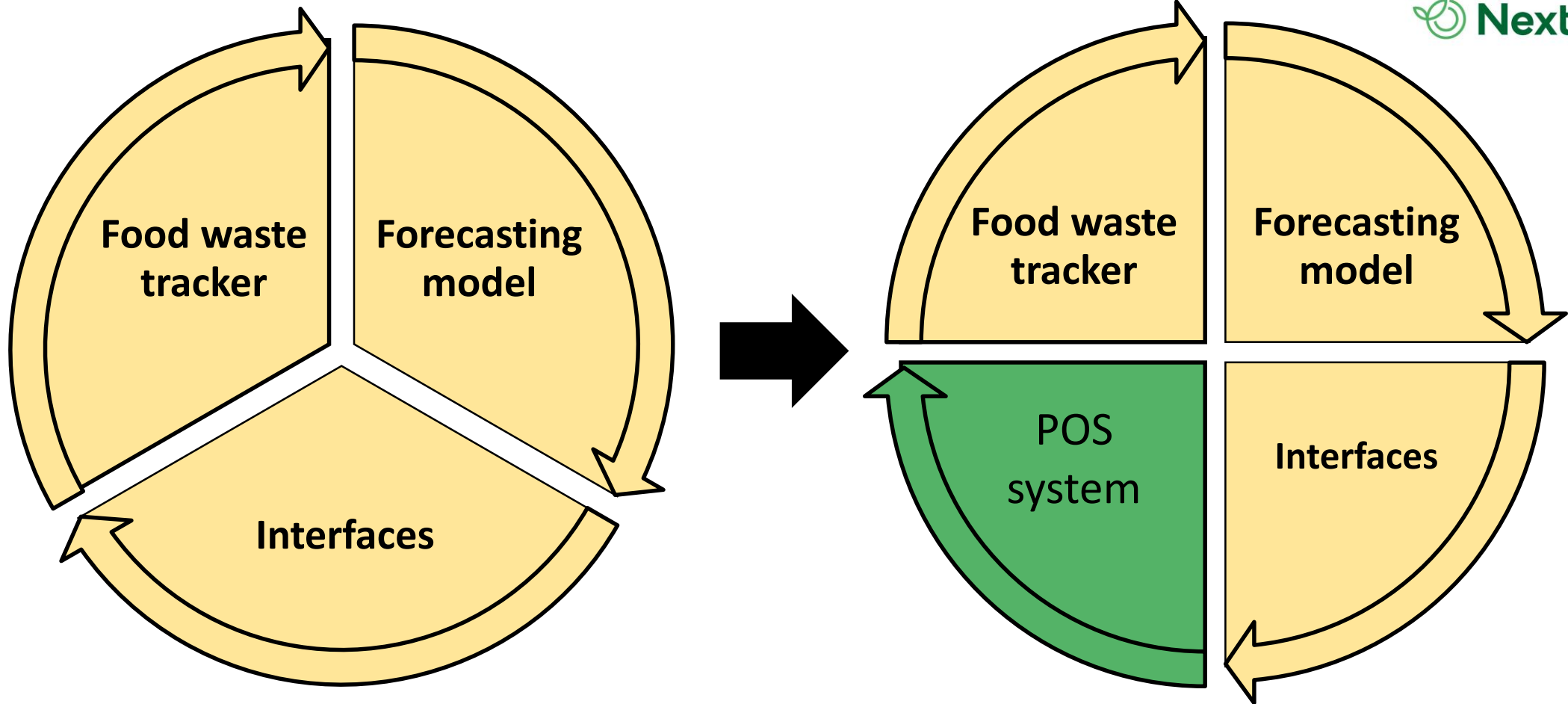


Two food waste trackers to follow daily kitchen, serving and plate waste → automatically stored in the PAJATSO database

Amount of diners manually to database

Food waste management 'forecasting model 3.0'

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Socio-cultural change



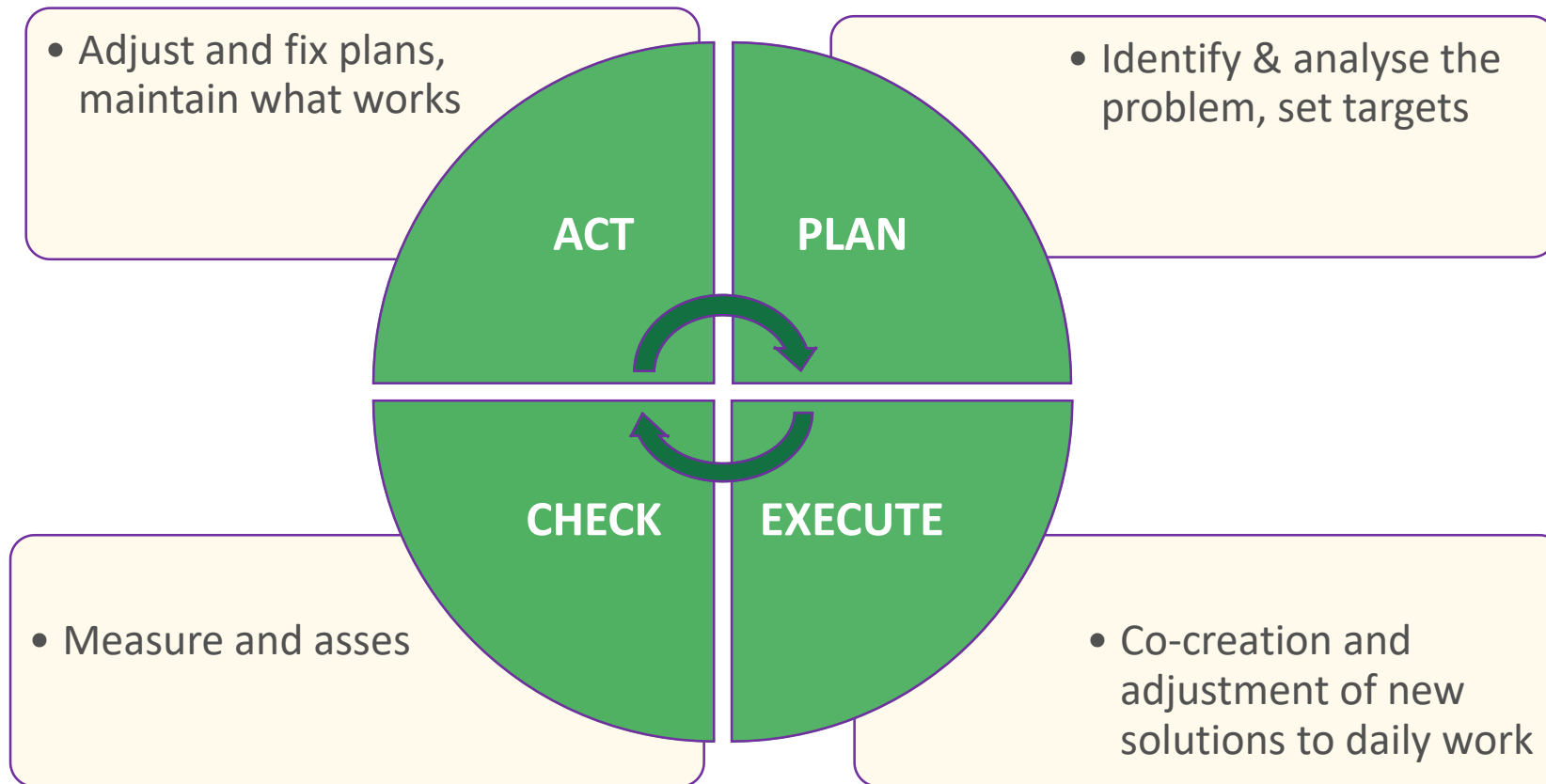
The key objective:

To make food waste reduction easy, attractive, socially desirable and timely, preferably automatic

Most human behavior is automatic and intuitive. Because routines drive so much of our behavior, it is not easy to change behavior based on information alone.

-> **Nudging** to steer behavior in the desired direction by shaping the environment of choice - i.e. without prohibitions or financial penalties or incentives

Continuous improvement: approach, tools & mindset





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*Tulevaisuuden hävikkiä
vähentävä buffetrūkailu*

Thank you!
Discussion & comments?

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