

FOOD LOSS AND WASTE

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TODAY'S TOPICS

- 01.** Introduction
- 02.** Why food loss and waste (FLW) is part of FSSC 22000 V6
- 03.** FSSC 22000 Scheme Requirements on FLW
- 04.** FLW Guidance Document
- 05.** Industry Perspective
- 06.** Q&A

PRACTICALITIES

- You're all muted; please use the Q&A functionality for questions
- Please use the Q&A only for questions
- This webinar will be recorded
- Recording and presentations will be shared via e-mail



WHY FOOD LOSS AND WASTE IS PART OF FSSC 22000 VERSION 6



CREATING A BETTER WORLD

FSSC is the leading brand that provides trust and delivers impact to the consumer goods industry

SCHEMES



ASSURANCE

Accreditation Bodies
Certification Bodies
Compliance Activities
Governance

IMPROVEMENT

Assurance Platform
Development Programs
Learning and Development

OUR VALUES

Transparency, Integrity, Ambition, Engagement, Care



SIZE OF THE PROBLEM

- Growing world population and hunger rising since 2014
- 33% of all food produced is lost while:
 - 1 billion MT food = 1 trillion USD loss per year
 - 2 billion people could be fed, ending world hunger
 - 8% of all human-caused global GHG emissions
- Undermines food system sustainability



DRIVERS

AGRONOMY, ANIMAL HUSBANDRY AND FISHING PRACTICES

- Agronomic factors
- Standard of livestock rearing
- Choice of fishing gear
- Choice of cultivar

BIOLOGICAL AND ENVIRONMENTAL FACTORS

- Pests and diseases
- Environmental factors:
 - Weather
 - Climate
 - Soil
 - Water

TECHNOLOGY AND INFRASTRUCTURE

- Harvest and post-harvest technologies
- Storage, containers + packaging
- Infrastructure + connection to market

DIRECT DRIVERS

INDIRECT DRIVERS

HUMAN FACTORS

- Culture of land ownership
- Training and outreach
- Labor
 - Availability
 - Quality
 - Cost

MARKET STRUCTURE, GOVERNANCE, INVESTMENT AND FAIR TRADE

- Market structure
- Regulations + standards
- Investment
- Access to finance
- Fairtrade + contractual agreements

GOAL

- Food Loss and Waste is about raw material efficiency to maximize food production while minimizing loss & waste.
- The pathway towards improving:
 - ✓ Global food security
 - ✓ Reducing economic costs
 - ✓ Reducing environmental impact
 - ✓ Support legal compliance





SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



14 LIFE BELOW WATER



15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



HOW CAN WE HELP?

WUR Master of Science Thesis:

- ✓ Contribution to SDGs 1, 3, 8, 12, and 17
- ✓ Food loss and waste are the largest areas of agreed impact by experts
- ✓ SDG 12.3 target: 50% food waste reduction by 2030
- ✓ FSSC 22000 v6: food loss and waste objective and goals





DOING THE RIGHT THING!

- ✓ Vision: creating a better world
- ✓ Mission: lead by example to provide trust and deliver impact
- ✓ Maximize impact with over 30,000 certified organizations
- ✓ Support implementation of the UN Sustainable Development Goal (SDG) 12.3 on food loss and waste through sharing best practices.

FSSC 22000 SCHEME REQUIREMENTS ON FOOD LOSS AND WASTE

NEW ADDITIONAL REQUIREMENTS

2.5.16 - Food loss and waste (All Food Chain Categories, excluding I):

- Documented policy and objectives on the strategy to reduce food loss and waste.
- Controls to manage product donations.
- Management of surplus products/by-products intended as animal feed/food.
- Not compromise on food safety.

FOOD LOSS AND WASTE

Food loss occurs before the food reaches the consumer as a result of issues in the supply chain (production, processing, storage, and distribution phases).

Food waste refers to food that is fit for consumption, but consciously discarded at the retail or consumption levels.

In the context of the FSSC 22000 Scheme, food loss and waste only relate to food – it does not include packaging material wastage.

NEW ADDITIONAL REQUIREMENTS

Example of an objective on a strategy
to reduce food loss and waste:

**REDUCE FLW BY
10% YEAR ON YEAR;
WITH AN OVERALL REDUCTION OF
50% OVER 5 YEARS**



GUIDANCE DOCUMENT FOOD LOSS AND WASTE

GUIDANCE FOR ALL ORGANIZATIONS

THREE-STEP PROCESS

1. Target

2. Measure

3. Act

1. TARGET

a)

Quantify your organization's food loss and waste:

- Establish the scope and identify types of food loss and waste (FLW) generated at each step,
- Establish the time period.
- Calculate and quantify the current FLW for each type generated.
- Determine current processes in place to manage FLW.
- Investigate the root causes of FLW and how to address them.

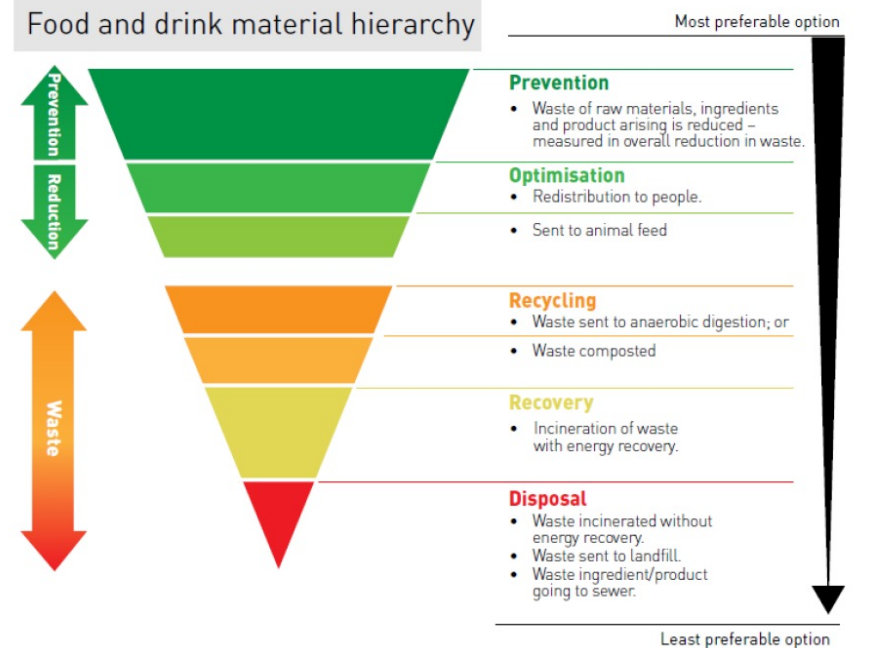
b)

Establish a prevention plan including objectives:

- Decide on focus areas for FLW,
- Set objectives and targets,
- Define actions to reduce FLW.

DESTINATIONS

- The intent is to move waste up the hierarchy.
- For example, waste currently sent to a disposal destination should be investigated to determine whether there are solutions to move this waste up to:
 - ✓ recovery,
 - ✓ recycling, or
 - ✓ optimization destinations.



2. MEASURE



a) Define monitoring procedures to measure food loss and waste.



b) Monitor and measure FLW at defined intervals using defined methodology.



c) Monitor the current destination of FLW.



d) Evaluate the results to determine if objectives and targets have been met.

3. ACT

a)

Where target(s) has not been met:

- Investigate and determine the causes,
- Implement suitable actions.

b)

Where target(s) has been met:

- Evaluate the current quantity of FLW and destinations,
- Determine if further reductions are possible,
- Determine if another destination could have a larger impact.

GENERAL GUIDANCE

- Only relates to food – excludes packaging material wastage
- Excludes pre-harvest wastage
- Includes food* intended for human/animal consumption and associated inedible parts not intended for consumption. For example:
 - a) Product: Egg
 - Inedible part: Shell
 - b) Product: Banana
 - Inedible part: Peel
- Includes safe and wholesome food rescued/recovered and supplied to secondary markets to feed people, e.g., donations to charities.

**Food includes ingredients, additives, drinks, pet food, etc.*

GENERAL GUIDANCE

- Investigate ways to improve process efficiencies to reduce the amount of product that needs to be downgraded.
- Seek alternative markets for products that do not meet quality parameters.
- Review established shelf life.
- Implement effective stock rotation.

SPECIFIC GUIDANCE

- Catering and Food Service
- Retailers and Wholesalers
- Brokers and Traders
- Transport and Storage
- Bio/Chemical Manufacturers



RELATED INDUSTRY INFORMATION

➤ Refer to page 10 of 24 of the Guidance Document on Food Loss and Waste.

8. RELATED INDUSTRY INFORMATION

The references below are not an exhaustive list and are for information purposes only, and may not apply to all organizations. The requirements of the Scheme shall be adhered to in all cases.

- Champions 12.3. URL: [Home | Champions 12.3 \(champions123.org\)](#)
- Commission for Environmental Cooperation. URL : [Case Studies on Food Loss and Waste in North America \(cec.org\)](#)
- European Union Guidelines on food donation. URL: [EUR-Lex - 52017XC1025\(01\) - EN - EUR-Lex \(europa.eu\)](#)
- European Union Guidelines for the feed use of food no longer intended for human consumption. URL: [EUR-Lex - 52018XC0416\(01\) - EN - EUR-Lex \(europa.eu\)](#)
- European Consumer Food Waste Forum. URL: [European Consumer Food Waste Forum | Knowledge for policy \(europa.eu\)](#)
- EU Platform on Food Losses and Food Waste. URL: [EU Platform on Food Losses and Food Waste \(europa.eu\)](#)
- EU Food Loss and Waste Prevention Hub: [European Food Loss and Waste Prevention Hub - Explore the Member States Initiatives \(europa.eu\)](#)
- EU Guidance on Best Before and Use By Dates to prevent food waste. URL: [fw lib best before en.pdf \(europa.eu\)](#)
- EU Farm to Fork Strategy. URL: [Farm to Fork Strategy \(europa.eu\)](#)
- EU Food Waste. URL: [Food Waste \(europa.eu\)](#)
- Interreg Europe. URL: [interregeurope.eu/find-policy-solutions/policy-briefs/food-waste](#)
- ReFED. URL: [Resources and Guides | ReFED](#)
- Stop Food Waste Australia. URL: [Australian Food Pact - To Reduce Food Waste in Australia \(stopfoodwaste.com.au\)](#)
- The Consumer Goods Forum, Case Study Booklet on Food Waste. URL: [Environmental Sustainability Food Waste Booklet 2018.pdf \(theconsumergoodsforum.com\)](#)
- Together Against Food Waste. URL: [Together Against Food Waste \(samentegenvoedselverspilling.nl\)](#)
- UNEP, FAO. Prevention and reduction of food and drink waste in businesses and household – Guidance for governments, local authorities, businesses and other organizations, Version 1.0. URL: [Prevention and Reduction of Food and Drink Waste in Businesses and Households: Guidance for Governments, Local Authorities, Businesses and Other Organisations. Version 1.0 \(unep.org\)](#)
- UN Global Compact. No time to lose (Food). URL: [Report: Food Loss on the Table - UN Global Compact Network Netherlands \(gcnetherlands.nl\)](#)
- WRAP. Food Waste Reduction Roadmap. URL: [Food Waste Reduction Roadmap | WRAP](#)
- WRAP. Guidance for Food Retail operations. URL: [Food Retail operations | WRAP](#)
- WRAP. Guidance for the Dairy Sector. URL: [Dairy processing | WRAP](#)
- WRAP. Guidance for the Meat Sector. URL: [Meat processing | WRAP](#)
- WRAP. Guidance for the Fresh Produce Sector. URL: [Fresh produce | WRAP](#)
- WRI. URL: [Reducing Food Loss and Waste: Setting a Global Action Agenda](#)
- WRI. URL: [Reducing Food Loss and Waste: Ten Interventions to Scale Impact](#)

INDUSTRY PERSPECTIVE



FrieslandCampina nl
nourishing by nature



Food Loss and Waste reduction at FrieslandCampina

John Niederer | December 6th 2023

Royal FrieslandCampina Cooperative at a glance



9,500 mln

kg milk

14.1 billion

euros revenue



Facilities in

31 countries



21,715

Employees



15,137

Member dairy
farmers



Export to

>100 countries

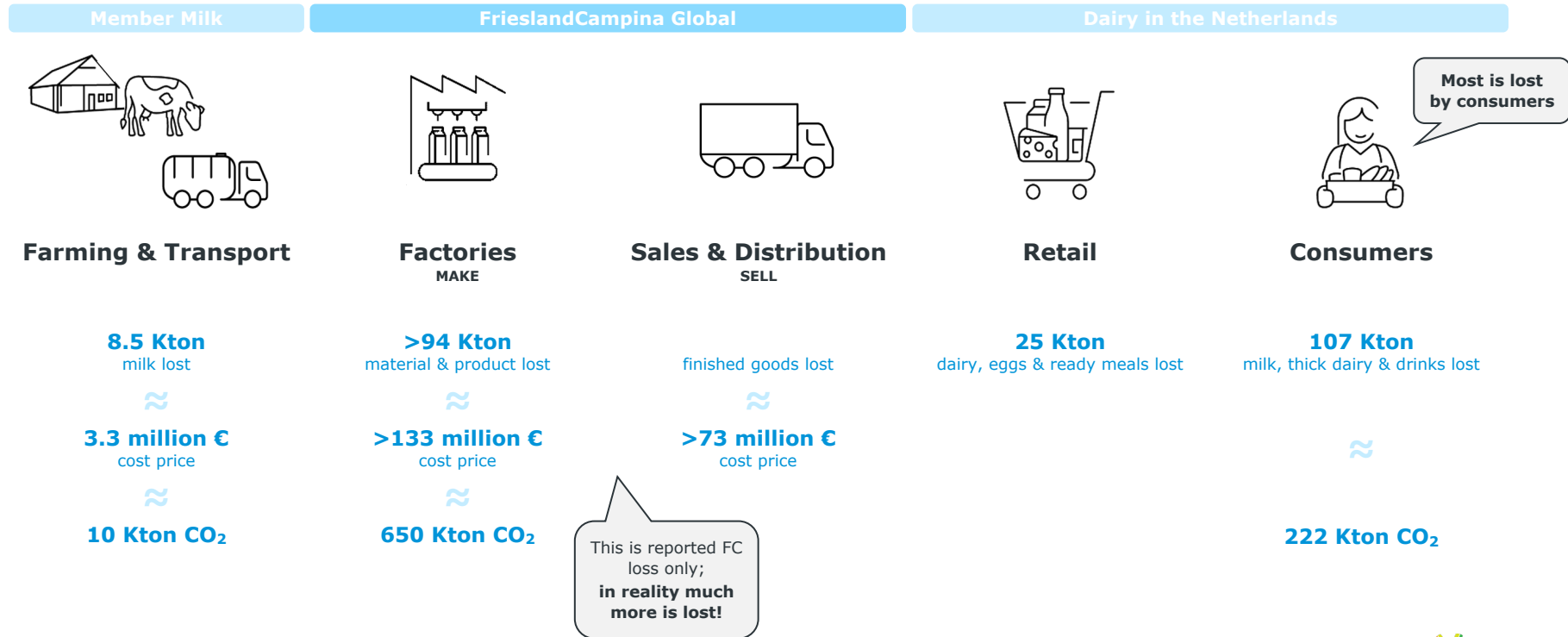


Every day

millions

of consumers

Setting the scene; based on first loss assessment RFC can save a lot of valuable nutrients (and € and CO₂)



Setting the Scene: Food Losses and Waste

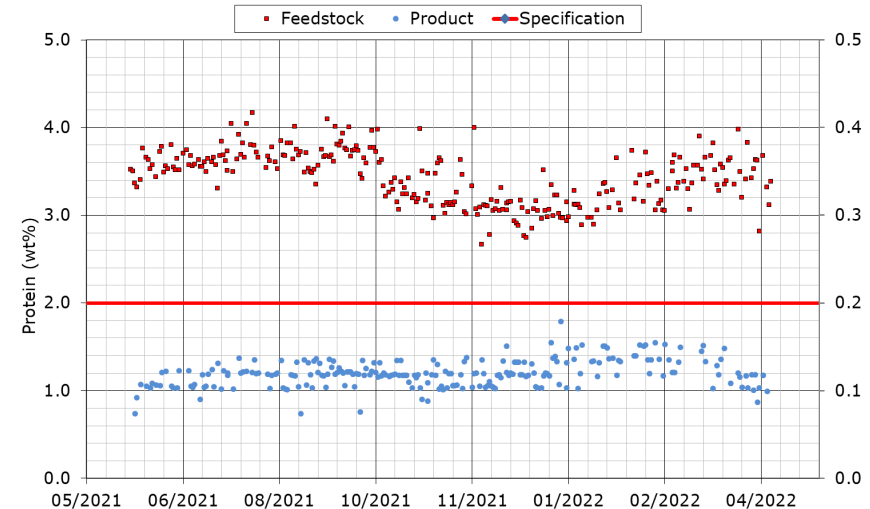
- Some typical examples of food waste:
 - Process losses (e.g. start/stop cut off, CIP losses, etc)
 - By-products (e.g. from membrane filtration, demineralisation, crystallisation, etc)
 - Out-of-Spec product
 - Shelf life
 - Etc.
- Main routes in holistic approach:
 - Prevention
 - Reduction
 - Valorisation



Example waste prevention: ensure First Time Right

Can we produce reliably in spec?

- Typical for new products and specification change requests
- Input:
 - Feedstock variation
 - Analysis method variation
 - Process variation (capability analysis)
- Some typical tools:
 - Measurement System Analysis
 - Process Capability studies
 - Control charts
- Output:
 - Product specification with assessment business risk (% OOS confidence interval)



Examples waste reduction

Reduce off spec, QC sampling, improve process control, ...

- Typical for existing products and production lines
- Some typical tools:
 - Preventive Maintenance / sensor calibration
 - Process and product Control Charts
 - Root Cause Analysis for process technological and product issues
 - Process and Product variation reduction methodologies: Lean Six Sigma
- QC optimisations:
 - Analytical Measurement Fit-for-Purpose
 - Analysis frequency optimisation based on Capability studies

Examples waste valorisation

Can we valorise our food waste?

- Specification variation (end of pipe solution)
 - Different customer, different specification; batch cherry picking
 - 'Downgrade' product (e.g. grated cheese)
- Waste valorisation
 - Feedstock for Feed (by-product valorisation, Start/stop powder, etc.)
 - Mineral waste upgrade (RFC products such as Milk calcium, NaFos, etc)
- Supply Chain:
 - Optimal production location and timing (run length optimisation, transport, etc)
 - Product gifts such Catastrophy aid, Food bank, etc.

Guided by good support systems and practices



- Documented policy and objectives in place
- Controls to manage product donations in place (e.g. Foodbanks)
- Manage surplus- or by products to prevent contamination (e.g. feed)
- Ensure compliance processes with legislation



Some concluding remarks

- Generally, for waste reduction: assess options in supply chain holistically and multi-disciplinary
- This is even more so the case in Food Waste reduction programs
- Be creative!
- Optimisation / problem solving projects have a Waste reduction spin-off
- However, no one-size-fits-all solutions
- And for management: there is actual payback!

Q&A



SAVE THE DATE

The first FSSC Insights Webinar for next year is scheduled:

Date: Tuesday, 30 January 2024

Time: 1 PM (CET)

Topic: FSSC 24000

**THANK
YOU**



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