Reducing Food Loss and Waste: A Workshop on Impacts

*Metrics for Understanding Food Loss and Waste*

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Multi-dimensional Challenge

- Definitions
- Data (quality, availability)
- Diverse methods
A Resource Helping Entities Measure and Report

✓ Common language
✓ Practical guidance
✓ Standard way to summarize inventory

“... provides consistent language to use ... and standard ways to measure and report.”

Kellogg Company
An Increasing Number of Companies and Others are Measuring Food Loss and Waste \textit{(a sampling)}

Tesco’s major suppliers representing >£17 billion of sales

Case studies give insight about using the FLW Standard (FLWProtocol.org)

- Kellogg’s: Food Waste in Global Manufacturing Operations
  \textit{A Case Study}

- Tesco’s Operations in the United Kingdom: Food Waste in Stores and Depots
  \textit{A Case Study}

- Delhaize America’s Operations in the United States: Food Waste in Stores and Distribution Centers
  \textit{A Case Study}

- Nestlé Dairy Factories in Pakistan: Losses Across the Value Chain
  \textit{A Case Study}

- Cranswick Gourmet Pastry’s Operations: Quantifying Food Waste from a Single Factory
  \textit{A Case Study}

- \textit{Estimating Quantities and Types of Food Waste at the City Level}

\textbf{Technical Appendices}
Steps to Quantify and Report on FLW

**Why** quantify?

**What** to quantify? (January 2018 webinar)

**How** to quantify? (February 2018 webinar)

**Reporting** (March 2018 webinar)

- Define goals
- Review accounting and reporting principles
- Establish scope
- Decide how to quantify FLW
- Gather and analyze data
- Calculate inventory results
- Assess uncertainty
- Perform review (optional)
- Report FLW inventory
- Set target (optional) and track over time

Webinar slides and recordings are available at www.FLWProtocol.org
Goals May be Based on Public Targets or Internal Objectives

A SAMPLING OF TARGETS:

**TARGET 12.3**

By **2030**, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.

**Consumer Goods Forum Food Waste Resolution**

“First prevent food waste, then maximise its recovery towards the goal of **halving** food waste within our own retail and manufacturing operations by **2025**.”

*Aligned with the FLW Standard; per unit of food sales in constant currency


**Own Target**

“The **IKEA** initiative, **Food is Precious**, aims to cut food waste in its food operations by **50%** by the end of its fiscal year **2020**.”
Foundation of the Common Language

**FOOD PLANTS, FUNGI, AND ANIMALS**

**FOOD**

**INEDIBLE PARTS**

**FOOD (NOT CONSUMED)**

**INEDIBLE PARTS**

Possible Destinations:
- Animal feed
- Bio-material/processing
- Codigestion/anaerobic digestion
- Composting/aerobic process
- Controlled combustion
- Land application
- Landfill
- Not harvested/plowed-in
- Refuse/discards/litter
- Sewer/wastewater treatment

(1) Material Types (i.e., food and/or inedible parts)
AND
(2) Destinations (where material goes when it leaves the food supply chain; 10 possibilities)

The FLW Standard allows an entity to select which combination of material types and destinations it considers to be “food loss and waste”

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*a* Intended for human consumption (i.e., excludes crops intentionally grown for bioenergy, animal feed, seed, or industrial use)

*b* At some point in the food supply chain (including surplus food redistributed to people and consumed)

The Value of a Common Language ... and Clear Reporting Goals (the “why”) drive the definition (the “what”)

USDA: 66.5 million tons

US EPA: 36.46 million tons disposed
**TARGET 12.3**

By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.

**Why the interpretation by Champions 12.3?**

Lack of clarity including what is defined as food loss and waste (i.e., the material types and destinations).

**Source:** Guidance on Interpreting Sustainable Development Goal Target 12.3 (September 2017), page 3
https://champions123.org/target-12-3/Champions 12.3
TARGET 12.3

By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

How to reach target?

FIRST PRIORITY: Food to people

NEXT: Aim for high valorization

TARGET: Waste stream to be reduced by 50%

WITH ENERGY RECOVERY

WITHOUT ENERGY RECOVERY

For more information:
https://champs123blog.files.wordpress.com/2017/10/champions-12-3-guidance-on-interpreting- sdg-target-12-3.pdf
What the Indices Cover

**Global Food Losses Index**
SDG 12.3.1

**Food Waste Index**
SDG 12.3.2

**Stages of the Food Systems**

- Pre-harvest/Pre-slaughter
- Harvest/Pre-slaughter
- On-farm Post-harvest/Slaughter Operations
- Transport Storage Distribution
- Processing & Packaging
- Retail
- Public & Household Consumption

**Uncertain Boundaries**

**Food Losses Index at the national level**
SDG 12.3.1

**Harvest losses**
can be added to the index coverage and measured with crop-cutting surveys

**Extreme Events**
SDG 1.5

**SDG 12.3.1**
Losses in the FBS

**SDG 12.3.2**
Global Food Losses Index

**SDG 12.3.3**
Food Waste Index
Food Waste Index – Suggested Equation (Draft)

The FW Index tracks progress as kg / capita / year.

\[
Food \ Waste \ Index = \frac{\left( \frac{\text{Total food waste in year } t}{\text{Population in year } t} \right)}{\left( \frac{\text{Total food waste in baseline year}}{\text{Population in baseline year}} \right)} \times 100
\]

If data can be collected by sector, a more detailed equation would be:

\[
Food \ Waste \ Index = \frac{\left( \frac{\text{FW\_Household}, t + \text{FW\_Food\_Service}, t + \text{FW\_Retail}, t + \text{FW\_Manufacture}, t}{\text{Population in year } t} \right)}{\left( \frac{\text{FW\_Household}, b + \text{FW\_Food\_Service}, b + \text{FW\_Retail}, b + \text{FW\_Manufacture}, b}{\text{Population in baseline year}} \right)} \times 100
\]

\(t = \) year of measurement

\(b = \) baseline year
FWI – Based on a Hypothetical Country

<table>
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<tr>
<th></th>
<th>amount of FW (tonnes)</th>
<th>country population</th>
<th>FW/capita</th>
<th>calculation</th>
<th>INDEX</th>
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<td>60,000,000</td>
<td>600,000,000</td>
<td>0.10</td>
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<tr>
<td><strong>year t</strong></td>
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<td>2020 YEAR 2</td>
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<td>2025 YEAR 7</td>
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<td>650,000,000</td>
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<td>2030 GOAL</td>
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<td>0.5</td>
<td></td>
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3 Approaches Being Refined and Tested for Food Waste Index

1. **Modelling** *(acceptable data quality; feasible for most countries)*
   - Subtracting consumption from supply would give an approximation of waste.
   - Using widely available regularly collected data.
   - FAO data on food supply from the retail stage of the supply chain, and a modelled value of national food consumption by humans.

2. **Proportion of total waste** *(better data quality; feasible for majority of countries)*
   - Apply a percentage to an estimate of total municipal waste generation that is food and the associated inedible parts.
   - Using data from moderately frequent studies.
   - This would overlap with work to provide information for SDG 11.6 on waste streams.

3. **Supply chain stage specific studies** *(best data quality; feasible for some countries)*
   - Data from each relevant supply chain stage (primary studies/data collection exercises).
   - These data would likely be collected at less frequent intervals (e.g. every four years).

To ensure transparency and accountability ==> use format of FLWS inventory to describe what was measured and with which methods.
Example of Retailer Indicators

Multiple metrics to meet 3-pronged strategy
1. Reduce food waste across operations
2. Divert surplus food to food banks and others
3. Divert food no longer suitable for human consumption to prevent it from going to landfill

Source: Supplementary report on Sustainable Retailing performance, 2016
Example of Retailer Indicators

Joint commitment with suppliers to adopt SDG Target 12.3, measure and publish food waste data for own operations (and act to reduce food waste farm to fork)

- Food surplus (total of food not sold), tonnes
- Food surplus safe for human consumption, tonnes

- Food waste as % of food sales in tonnes
- By category, food waste tonnes and %age
Different Types of Food Waste Data Provide Different Insights

To target hotspots for source reduction

Look @ data by product category

To move material up the hierarchy

Look @ data by destinations
Multi-Sector Approach: UK Food Waste Reduction Roadmap Toolkit

1. Allow businesses to measure and report consistently
2. Help food businesses take targeted action to reduce waste in their own operations, their supply chain and from consumers
3. Help food sector deliver against Courtauld 2025 targets
4. Help UK deliver its part in SDG Target 12.3
5. Guidelines for quantifying and reporting consistent with the FLW Standard
Summary

Reporting period (start date – end date):

Overall food waste in tonnes:

Food waste as a % of the product and ingredient handled by your organisation*:

(Optional) Percentage of inedible parts included in total food waste tonnage:

* this should be tonnes food waste ÷ tonnes (food product produced or sold as intended + food waste + food sent to other destinations). If food tonnes cannot be measured, provide an alternative metric, such as % by value, and explain the method used.
New Tool! FLW Value Calculator – Overview Webinar: Oct. 18th

**Beta Release. Version 1.**

- This calculator builds on the *FLW Standard (Appendix D)*

- Users enter the weight of FLW; the tool quickly quantifies FLW in terms of:
  - Nutritional value
  - Environmental impacts (GHG, water consumption, land, nutrients)

Why Use the FLW Value Calculator

Communicate value.
Demonstrate how efforts to prevent food loss and waste provide nutritional and environmental value.

Prioritize actions.
Prioritize food loss and waste efforts based on environmental sustainability and nutrition security goals.

Explore options.
Explore different destinations and scenarios for food loss and waste to reduce impacts.
FLW Standard, Case Studies, Trainings etc. @ www.FLWProtocol.org

FLW Value Calculator

Quickly estimate the value of food loss and waste in terms of nutritional and environmental impacts.

The FLW Value Calculator (in beta test version) creates a snapshot of the impacts related to food loss and waste of different types of food. With this knowledge you can demonstrate how your efforts to prevent food loss and waste provide nutritional and environmental value.
How to Learn What’s New Through the FLW Protocol

Sign up for regular updates at the bottom of any page @ FLWProtocol.org

hotlink: http://flwprotocol.org/#signup
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Food Loss + Waste Protocol

www.flwprotocol.org

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