

WEBINAR

Guidance for Retailers: Why & How to Measure Food Waste

May 16, 2018

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&

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Anthesis UK

Focus of the Webinar

Guidance for retailers on why and how to measure food waste

PART 1. Webinar today (May 16, 2018)

- Why quantify
- Steps to take
- What to quantify
- How to quantify
- Retailer reporting examples
- Other retailer-relevant resources
- Discussion

PART 2. Deeper dive webinar (June 20, 2018)

- Explore in greater detail some of the quantification challenges retailers face
- Discuss further how to apply a product-level approach to food waste quantification

"What Gets Measured, Gets Managed"

Measurement enables you to:

- Understand size of the opportunity
- Identify priority hot-spots for action
- Set baseline and track progress against goals
- Provides a path to co-benefits



Why Address Food Loss and Waste?

"Transparency and measurement is essential for identifying hotspots, and in tackling the causes of food waste. It helps everyone understand how much, where, and why food is being wasted."

As shared by supermarket retailer Tesco:

Economic value

"Food waste results in <u>significant costs</u> to our business, as well as our suppliers and our customers.

Environmental value

We can <u>reduce our environmental</u>
<u>impact</u> since food waste puts
unnecessary pressure on land and
natural resources and results in
additional greenhouse gas emissions.

Reputational value

Our customers and colleagues care about reducing food waste."

Quote from Tesco's Annual food waste reporting & FLW Standard case study flwprotocol.org/case-studies/

Why Address Food Loss and Waste?

OUR RESULTS

All those actions have:

- Financial benefits reduced costs from waste disposal; tax benefits for donation in some markets; and, with onsite anaerobic digestion, reduced energy costs.
- Engaged associates the associates who launched Instock, who partnered with suppliers on the Brussels Beer Project, and who are involved in daily donations of unsold food to the communities we serve are proud to be involved and to make a difference on food waste.
- Built trust with suppliers, more and more looking at reducing food waste to minimise both environmental impact and their costs.



- Increased product innovation using the concepts of a circular economy, we are beginning to drive product innovation that meets customers' needs and drives down food waste.
- Benefited customers saving money through markdowns and/or tips to reduce food waste at home
- Supported communities reducing hunger from programmes to redistribute unsold food from our stores.
- Appealed shareholders, who are interested in responsible investing.

Source: Food waste commitments & achievements of CGF members, October 2017

Retailers Are Using the FLW Standard to Help Them Measure

Provides a:

- Common language
- Framework for consistent and transparent reporting

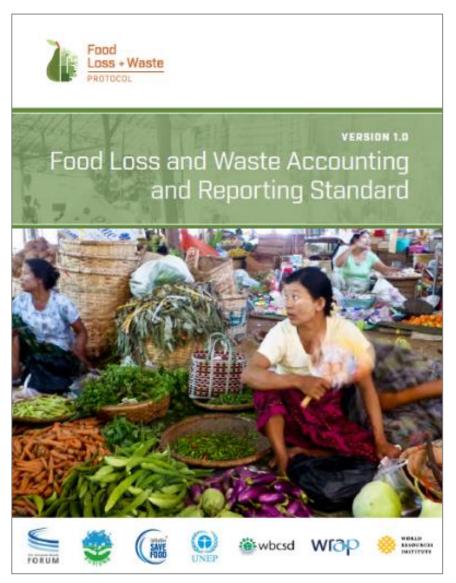
"...it gives us a clear unambiguous way for talking about food waste.

... helps our full company prepare for how we can get a more consistent baseline across our business."

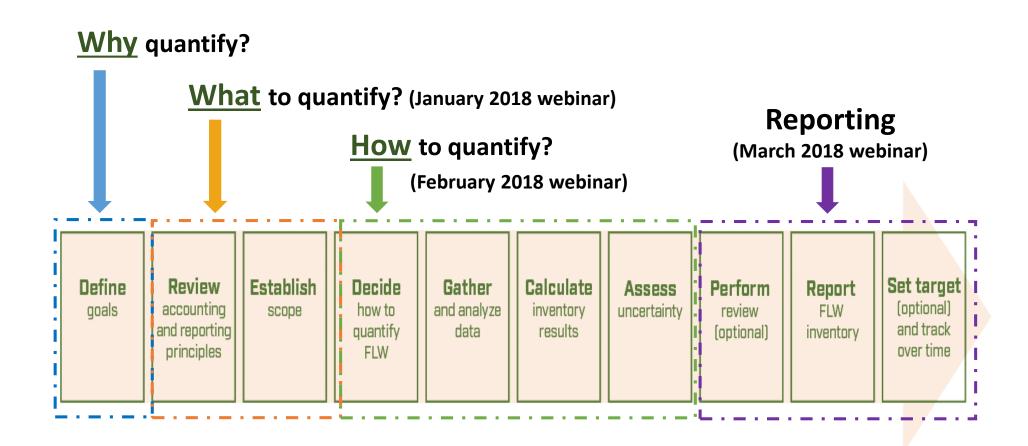
From Delhaize America FLWS case study

Practical guidance supports users in:

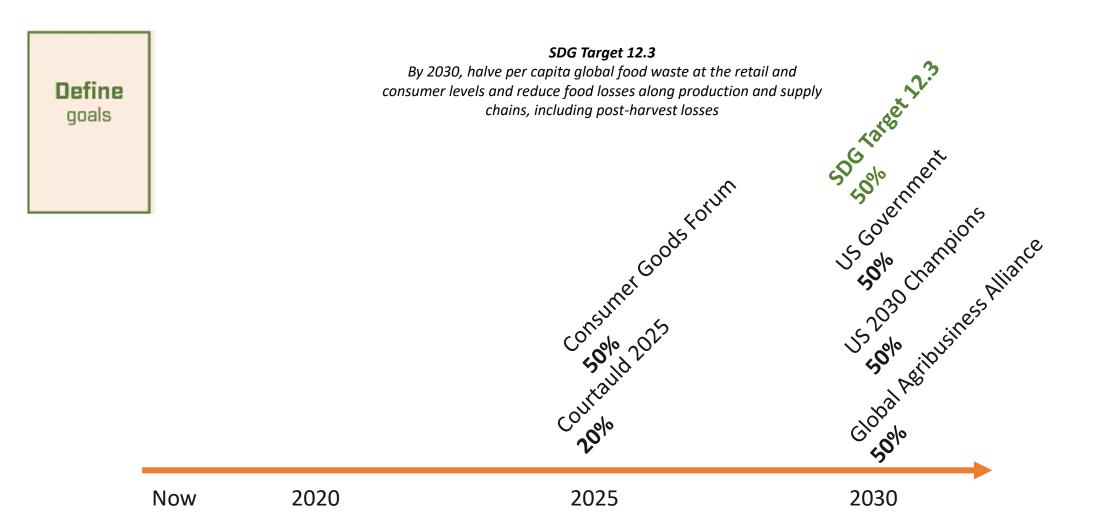
- Understanding why to measure FLW
- What to quantify
- Options for how to approach measurement



Steps to Take in Developing An Inventory



Goals May Be Defined by External Targets



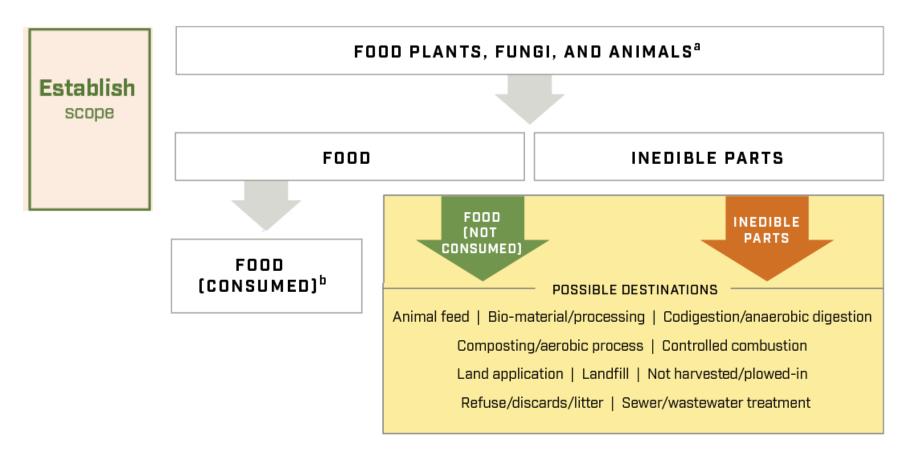
When in Doubt, Turn to the Basic Principles of Accounting and Reporting

Review accounting and reporting principles

A food loss and waste (FLW) inventory shall be based on five common principles:

- 1. Relevance: Contain information necessary for stakeholders to make decisions on FLW.
- 2. **Completeness**: Cover all FLW within the scope selected. Disclose and justify any exclusions.
- 3. **Consistency**: Use consistent methods to allow for meaningful tracking of FLW over time.
- 4. <u>Transparency</u>: Disclose quantification methods used, relevant assumptions made, and data sources.
- 5. <u>Accuracy</u>: Be sufficiently accurate to enable intended users to make decisions with reasonable confidence that the information in the inventory is credible.

Basic Framework For Thinking About Scope (What to Quantify)



(1) Material Types (i.e., food and/or inedible parts)

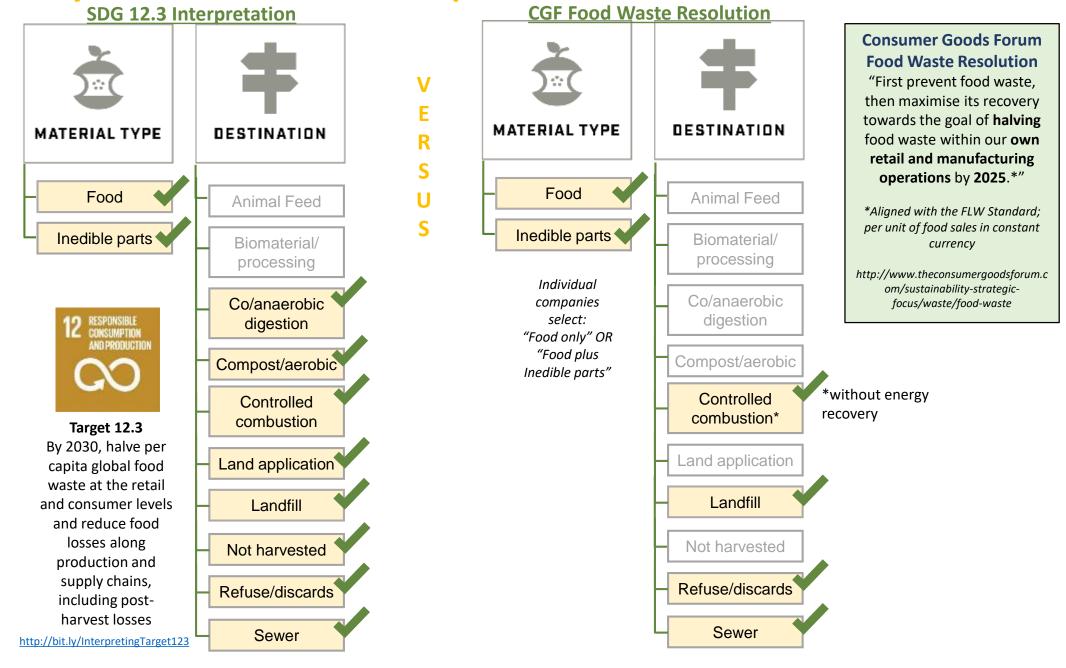
AND

(2) Destinations (where material goes when it leaves the food supply chain; 10 possibilities)

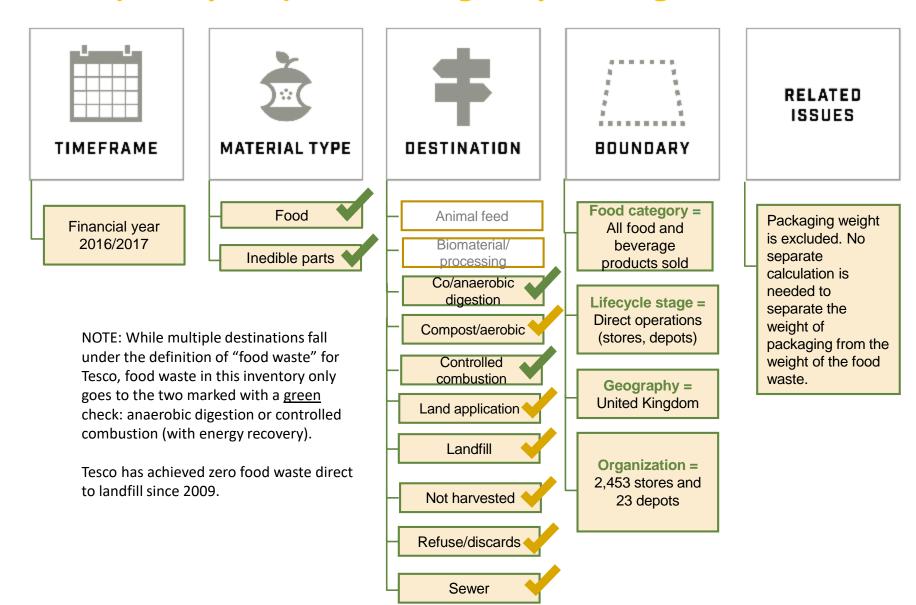
^a Intended for human consumption (i.e., <u>excludes</u> crops intentionally grown for bioenergy, animal feed, seed, or industrial use)

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

Scopes May Differ - SDG 12.3 Interpretation & CGF Food Waste Resolution

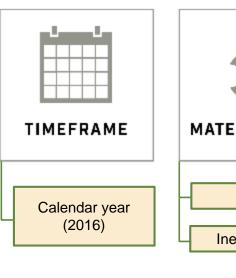


Tesco (example 1). Describing Scope Using the FLW Standard



Note: Tesco's Scope Maps to the SDG 12.3 Interpretation

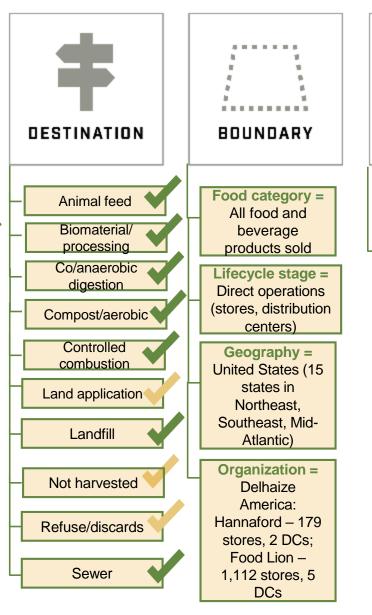
Delhaize America (example 2). Describing Scope Using the FLW Standard





NOTE: All destinations fall under the definition of "food waste" for Delhaize America. However, food waste only goes to those marked with a green check:

- · animal feed
- bio-based materials/biochemical processing (rendering)
- co/anaerobic digestion
- composting/aerobic processes
- controlled combustion (incineration)
- landfilll
- sewer/wastewater treatment



RELATED ISSUES

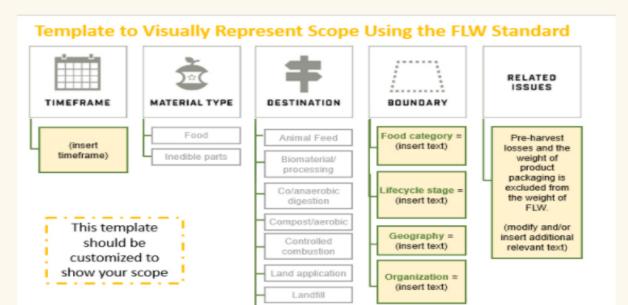
Packaging weight is excluded from the weight of food waste. Estimates of the packaging weight are based on samples in which the food waste and packaging were separately measured.

Customizable Visual Can Be Downloaded @ www.FLWProtocol.org



SUMMARIZING THE SCOPE OF A FOOD LOSS AND WASTE INVENTORY

The FLW Standard makes it easy to describe the scope of what you're measuring. Download a simple visual you can use in presentations or otherwise.



Guidance in the FLW Standard on How to Quantify

Decidehow to
quantify
FLW

Gather and analyze data

Calculate inventory results

Assess uncertainty

- The FLW Standard does not require use of a particular quantification method
- The FLW Standard does require that you: "Describe the quantification method(s) used. If existing studies or data are used, identify the source and scope."
- > Guidance on "how" is available in:
 - ✓ Chapters 7 9 of the *FLW Standard*
 - ✓ The stand-alone *Guidance on FLW Quantification Methods*. The most relevant chapters for retailers are:

Chapter 1. Direct weighing

Chapter 2. Counting (scanning)

Chapter 4. Waste composition analysis

One-third of all food produced in the world is **lost or wasted** between farm and fork.

The Food Loss and Waste Accounting and Reporting Standard enables companies, countries, cities and others to quantify and report on food loss and waste so they can develop targeted reduction strategies and realize the benefits from tackling this inefficiency.

Learn More

DOWNLOADS

FLW Standard Executive Summary

O(PDF) - ENG CHI JAP POR SPA

FLW Standard

O(PDF) - ENG JAP SPA

Sample Reporting Template for FLW Standard

(XIC) - ENG

Guidance on FLW Quantification Methods

(PDF) - ENG

FLW Quantification Method Ranking Tool

(XLS) - ENG

Learn to Use Triese Resources

How to Quantify - Two Main Steps

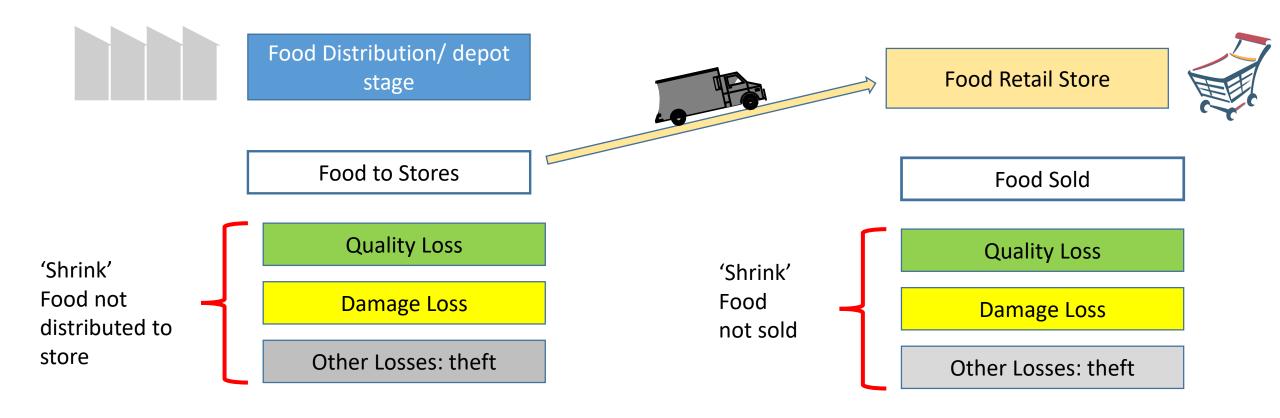
- 1. Understand current waste streams
- a) Disaggregate <u>sources</u> of surplus and food waste at retail (and in distribution centers, if relevant)
- b) Understand the <u>destinations</u> of food not sold/not distributed to stores

- 2. Collect and compile data to calculate food waste amount
- a) Gather and <u>evaluate relevant data</u> and/or records
- b) To <u>address current data gaps/weaknesses</u>, evaluate other quantification options
- c) Produce the <u>initial estimate</u> and assess quality
- d) Plan for <u>future improvements</u>/ refinements

Step 1: Understand current waste streams

1 a) Disaggregate sources of surplus and food waste at retail (and in distribution centers, if relevant)

Identify sources of food not sold/ distributed



1 b) Understand the destinations of food not sold/ not distributed to stores

"Future proofing" strategy

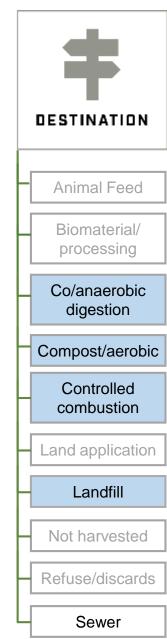
- Track <u>all</u> the food not sold/ distributed (i.e., to all possible destinations)
- Your reduction goal may only be for a subset of destinations

Notes For Retailers

The <u>four</u> destinations most commonly quantified are in blue.

Also important is sewer as a disposal route (relevant in some markets).

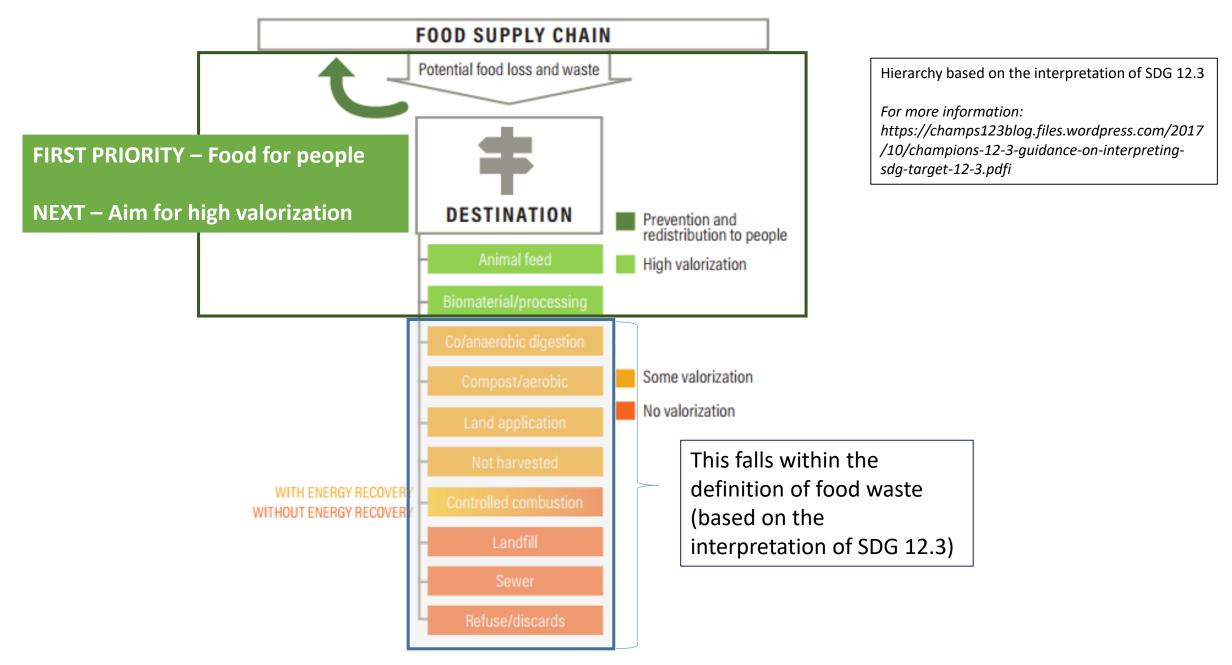
Other destinations retailers may quantify include animal feed or biomaterial/processing. This may or may not be considered "food waste" depending on a retailer's definition.



What about Donations/Food Rescued?

- Food rescued (redistributed or donated for consumption by people) is still in the human food supply chain. Even though it's an economic loss for the retailer, it's not wasted food.
- Do track the amount of food rescued but keep it <u>separate</u> from your food waste inventory

A hierarchy of destinations recommended by Champions 12.3

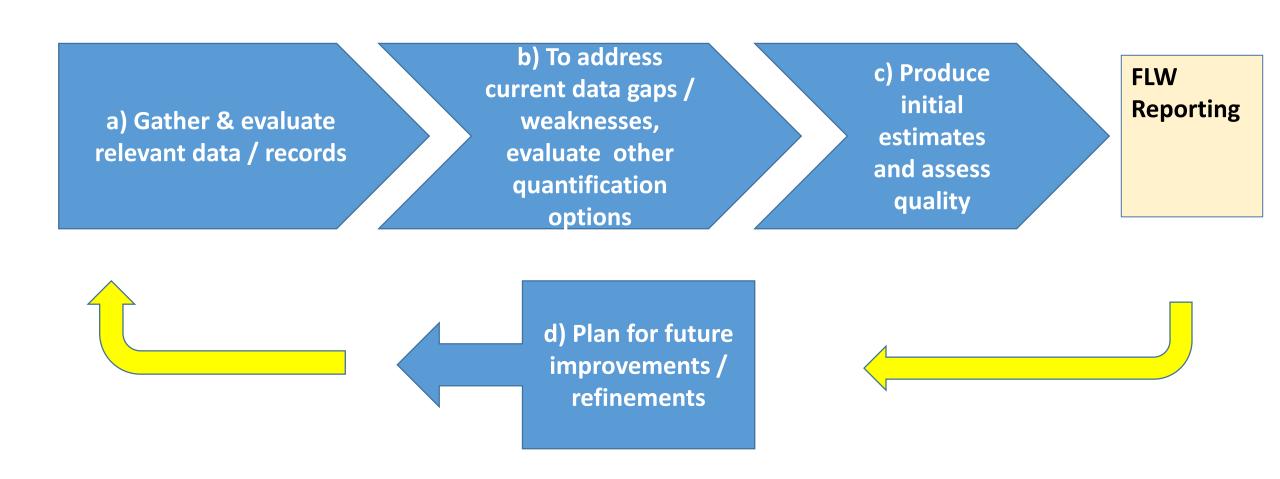


Step 2: Collect and compile data to calculate food waste amount

LESSONS LEARNED

- Involves a combination of different quantification approaches
- Potential to triangulate between different measurement techniques
 - e.g. estimates based on waste contractor data/ audits may be cross-checked against measurement based on POS/ SKU data
- Staff involvement and commitment is key (training, coordination of data sources, understanding / awareness of reporting commitments)
- Pathway to compiling food waste estimates a continuous improvement loop, rather than a single unmodified deployment

Step 2: Collect and compile data to calculate food waste amount



2 a) Gather and evaluate relevant data and/or records

Identify sources of data for FLW calculation

There are two typical methods for measuring retail food waste:

1. Waste contractor records – Top down method

- Based on reported tonnage collection
- Compositional analysis/ waste audits required for mixed waste streams



More easily available



Provides no granularity; waste audits subject to sampling error



2. Product (SKU) scanning – Bottom up method

Based on scanning unsold products and combining with standard product weights



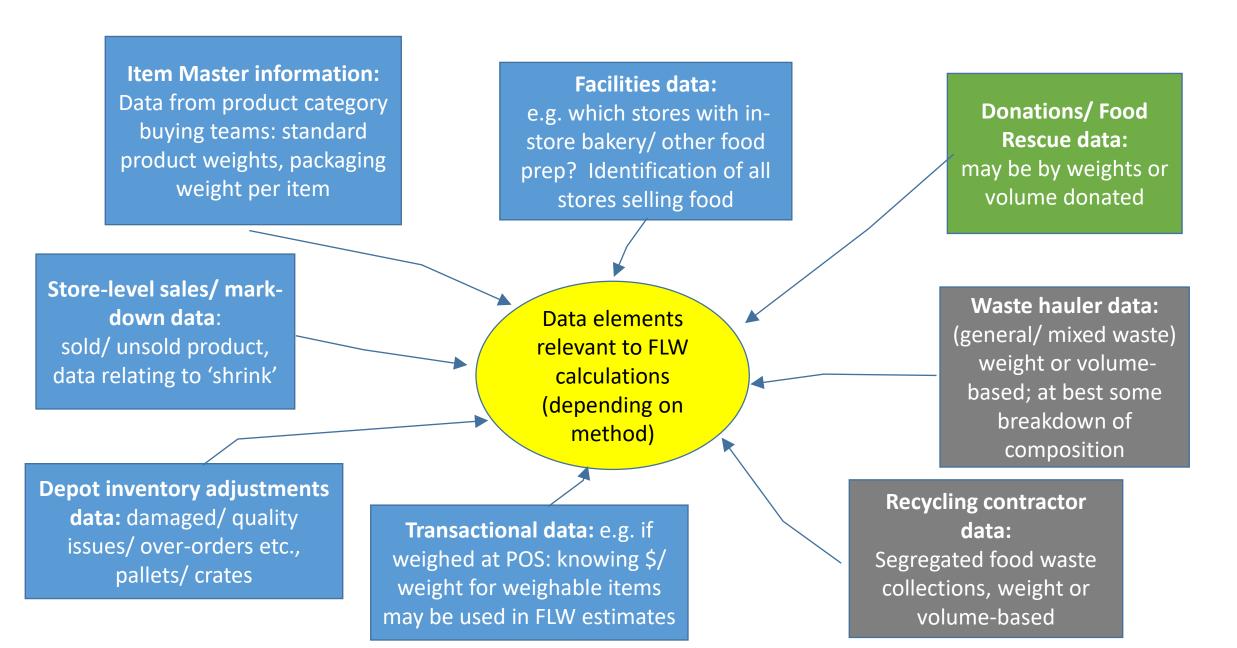
High level of granularity



Necessary systems may not be in place or work needed to get different datasets to relate



Identify who has the data – it's likely spread across the business



2 b) To address current data gaps/weaknesses, evaluate other quantification options

Higher level of accuracy & detail

Quantification approach

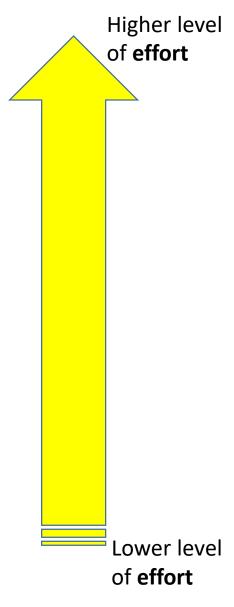
POS scanned data based on food product weights at SKU-level for all unsold products

Direct weighing of segregated food waste as it leaves retail stores/ depots, may be supplemented by more detailed waste audits: audits + waste contractor data

Waste sampling of mixed wastes leaving retail stores/ depots: audits + waste contractor data

Conversion of overall financial data (product category, lost sales value) to FLW weight estimates

Lower level of accuracy & detail



2 c) Produce the initial estimate and assess quality

Use the relevant data and/or records available as well as quantification approaches to address gaps and weaknesses in the data keeping in mind the following:

Quantification approach	Key issues impacting data quality	Food packaging included/ needs subtracting?	Food waste estimate produced
POS scanned data based on food product weights at SKU-level for all unsold products	SKUs without standard product weights will need to be estimated from direct weighing; data do not require scaling as generated item by item from POS scanning	Estimates may exclude packaging weight, depending on records available	Detailed SKU-level estimates, can be directly related to lost sales value and food waste reduction strategy
Direct weighing of segregated food waste as it leaves retail stores/ depots, may be supplemented by more detailed waste audits at point of disposal	Truck-scale measurement may not reflect food waste weight (weather/moisture, non-food contamination, poor segregation efficiency); uncertainty in scaling results	Includes weight of packaging, although some destinations may supply weight after depacking	Basic weight data with low granularity from hauler data, more detail from audits
Waste sampling of mixed wastes leaving retail stores/ depots	Requires waste sorting to estimate % food waste within mixed waste, subject to seasonality, sampling error	Items of food will need to be de-packed to exclude packaging weights	Basic estimates for food waste as % mixed waste, low granularity
Conversion of overall financial data (product category/ lost sales value) into FLW weight estimates	Data has high availability, but uncertain relationship with product weight information	N/A	Estimated food waste at category level; low granularity

2 d) Plan for future improvements/ refinements

- Gather more granular data at food category/ SKU level, geographically and through time:
 - Key to acting on food waste is to understand 'hotspots': most wasted food products
 - Where waste occurs: stores and depots
 - Seasonal drivers: e.g., wastage around holidays
- Understand causes of food waste:
 - Food quality issues/ 'date expiry' versus product damage, freezer breakdown
 - Systemic issues demand prediction and ordering systems
- Moving from FLW <u>measurement</u> to setting a course of <u>action</u> requires more detailed profiling of FLW causes and types....

....... you are not alone on this journey: learn from the experience of others!

Many Retailers Are Sharing Their Food Waste Data



Transparency and measurement is essential for identifying hotspots, and in tackling the causes of food waste. It helps everyone understand how much, where, and why food is being wasted.

As we grew our business in 2017/18 and total food sales increased, the level of waste as a % of sales remained broadly flat at 0.5%.

	2016/17	2017/18
Total UK food sales	9,957,374 tonnes	10,023,559 tonnes
Total food waste	46,684 tonnes	53,126 tonnes◊
Waste as % of food sales	0.5%	0.5%◊
Donations	5,700 tonnes	7,975 tonnes

Reports, policies and disclosure

How we calculate the food waste figure - UK

Scope and Definitions

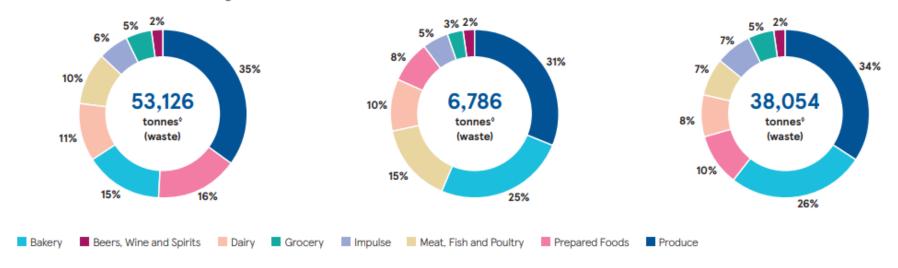
The methodology outlined below is used to calculate the total tonnes of food wasted in our UK operations in the full Tesco financial year 2016/17. The information provided is in conformance with the <u>Food Loss and Waste Accounting Standard (FLW Standard)</u>.



Publish details in Strategic Report and online, including methodology @ https://www.tescoplc.com/little-helps-plan/reports-and-policies/how-we-calculate-the-food-waste-figure-uk/

2017/18 food waste by category(a)

(% do not total 100% due to rounding)



KPMG LLP were engaged to provide independent limited assurance over the selected food waste data highlighted in this report with a ◊ using the assurance standard ISAE 3000.
 KPMG has issued an unqualified opinion over the selected data. KPMG's full assurance statement is available at: www.tescoplc.com/foodwastefigures.

Tesco notes the multiple sources of data publicly:

- Retail and depot waste
- Damaged, out-of-code, write-off, exceptional events waste
- Product data (contents weight and the packaged weight per item)
- Self-scan data
- Bakery weights
- Donation and charity data, colleague shop
- Animal Feed tonnage

⁽a) Total food waste is made up of both food safe for human consumption and food that is not safe for human consumption which has been disposed of.



In 2017 Annual Report

- Strategy, Targets, Progress, Destinations -

We have a three-pronged approach to driving down food waste. First, we *reduce food waste* across our operations, including stores, warehouses and transport. Ongoing actions include: smarter product ordering and supply management, providing storage guidance on food packaging, discounting perishable products that are reaching end-of-shelf-life as well as 'imperfect' vegetables, and raising associate awareness.

Secondly, we *divert surplus food* to food banks and charities and to innovative operations such as restaurants that cook with unsold food.

And thirdly, we *divert food no longer suitable for human consumption* to other recycling methods, to prevent it from going to landfill. These methods can include animal feed production, green energy facilities or industrial uses.

In 2017, we measured the food waste and where it went, across all Ahold Delhaize companies:

- We recycled 68% of our food waste, moving towards our 2020 goal of 90%.
- Our total food waste per food sales was 5.32 tonnes per million Euros. By 2020 we aim to reduce this by 20% from our 2016 baseline.

All these actions combined not only make us a better no buying decisions and reduced operational waste we cocustomers, making us a better place to shop.

For more details please see our reporting page.

Reduce food waste

Performance indicator description

Tonnes of food waste per food sales (t/MEUR)3

Tonnes of food waste sent to disposal per food sales (t/MEUR)3

% of total food waste recycled

- % food waste recycled for animal feed
- % food waste recycled for biogas generation
- % food waste recycled for compost
- % food waste recycled by rendering

% of unsold food donated to feed people4

Food waste

Tonnes of food waste per food sales (t/MEUR)



*Target is a 20% reduction from 2016

Teams at Delhaize Belgium have excelled at preventing food from becoming waste by optimizing the use of automated warehouses to minimize the time between receipt and delivery of fresh products, adjusting the assortment in the stores and donating unsold food to charities – resulting in the lowest food waste per sales among all our brands.

Two of our brands – Albert Heijn and Delhaize Belgium – recycle 100% of food waste through the various means available in each market.

In 2017, we used the waste reduction model developed by the Environmental Protection Agency to estimate the impact of all of our food waste reduction activities on our greenhouse gas emissions. The model suggests we prevented approximately 224,000 tonnes of equivalent CO₂ emissions, or 5% of our total emissions.

FLW Protocol Case Studies

HOW DOES THIS INVENTORY MEET THE FLW STANDARD'S REQUIREMENTS? DELHAIZE \$\frac{1}{2} \frac{1}{2} \frac\

The table below provides a summary of how Delhaize America's FLW inventory meets the eight reporting and accounting requirements contained in the FLW Standard.

FLW STANDARD REQUIREMENTS & DESCRIPTION OF DELHAIZE AMERICA'S FLW INVENTORY

(see www.FLWProtocol.org for details and guidance)

- 1. Base FLW accounting and reporting on the principles of relevance, completeness, consistency, transparency, and accuracy
 - Relevance: Data informs waste reduction activities
 - Completeness: All stores and distribution centers included
 - Consistency: Use same methodology each year
 - Transparency: Methodology, including assumptions, is shared with internal decision-makers
 - Accuracy: Calculation is validated by internal audit. Ongoing work to reduce uncertainties

2. Account for and report the physical amount of FLW expressed as weight

Reported as tonnes

Define and report on the scope of the FLW inventory (see FLW Standard for additional details)

Timeframe: Calendar year (2018)

Material type: Food and associated inedible parts

Destinations: All destinations fall under the definition of "food waste" for Delhaize America, but food waste only goes to some: animal feed, anaerobic digestion, bio-based materials/biochemical processing (rendering), composting, controlled combustion (incineration), or landfill

Boundary:

- Food category: All food and beverage [UNCPC2.1 Div. 21 24]
- Lifecycle stage: Direct retail operation and distribution centers (DCs)
- Geography: US; 15 states in Northeast, Southeast, Mid-Atlantic US regions
- Organization: Hannaford 179 stores, 2 DCs; Food Lion 1112 stores, 5 DCs

Related Issues: Packaging weight is excluded. Estimates of the packaging weight are based on samples in which the food waste and packaging were separately measured

Describe the quantification method(s) used. If existing studies or data are used, identify the source and scope

Records from waste management vendors

If sampling and scaling of data are undertaken, describe the approach and calculation used, as well as the period of time over which sample data are collected (including starting and ending dates)

N/A

6. Provide a qualitative description and/or quantitative assessment of the uncertainty around FLW inventory results

Sources of uncertainty include estimates made about the:

- The weight of packaging
- Total mass of food waste in dumpsters

If assurance of the FLW inventory is undertaken (which may include peer review, verification, validation, quality assurance, quality control, and audit), create an assurance statement

Extensive internal audit on process of collecting and recording data

 If tracking the amount of FLW and/or setting an FLW reduction target, select a base year, identify the scope of the target, and recalculate the base year FLW inventory when necessary N/A AND



Download and view online @ http://flwprotocol.org/case-studies/



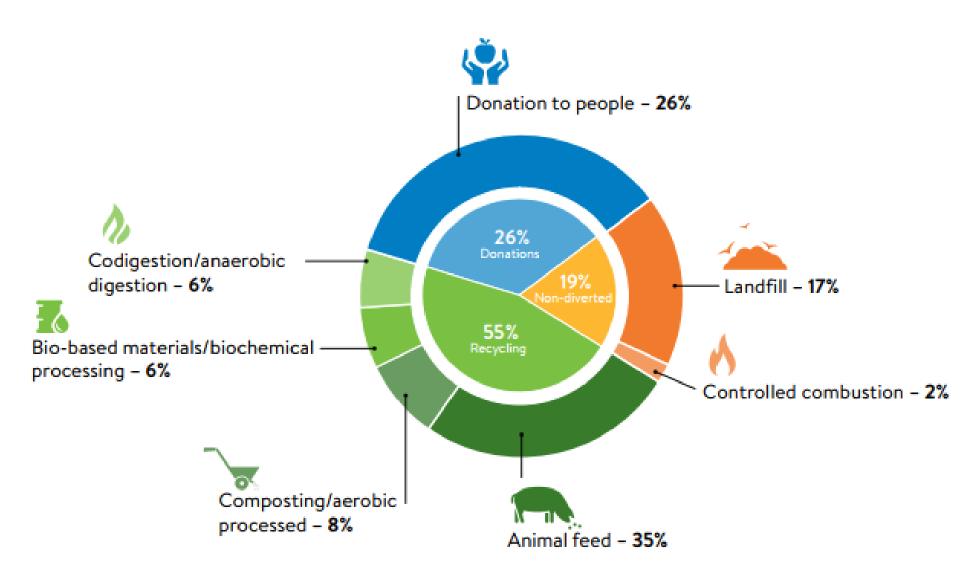
2017 Corporate Responsibility Report

MATERIALS DIVERTED FROM LANDFILL (tonnes)

Materials diverted from landfill from Australian Supermarkets, New Zealand Supermarkets and BIG W.

Total diverted	252,071	247,975	274,930	283,040
Total New Zealand	26,780	28,328	29,100	30,475
Other	430	435	440	1,193
Food to charity	-	509	509	509
Food waste to farmers	827	807	787	768
Plastic film	977	1,253	1,307	1,296
Cardboard	24,546	25,324	26,057	26,709
NEW ZELAND	2014	2015	2016	201
Total Australia	225,291	219,647	245,830	252,56
Other	205	131	47	290
Polystyrene	16	3	-	
Plastic film	7,869	7,028	8,226	9,23
Cardboard	201,165	192,170	218,535	222,14
Food to charity	1,381	2,956	3,231	4,01
Food waste to composting or energy	14,655	17,359	15,791	16,87
AUSTRALIA	2014	2015	2016	201

Walmart global food waste destination mix in Canada, Japan, U.K. and U.S.



Sampling of Resources for Retailers Available From Other Organizations

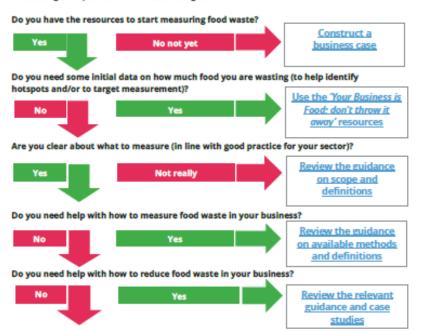


http://www.wrap.org.uk/content/foodwaste-measurement-principles-andresources-guide

Food waste measurement signposting tree

Why should I measure food waste? What should I measure? How should I do this? How can I action to reduce food waste? Answer the questions below and navigate to relevant resource find out.

Interactive guide - Just rollover and click to navigate



Contact WRAP to discuss how you can create a case study of your work

Food Waste Prevention

Digest Series

Version Number: 01

This document is regularly updated, so please check on our website that you have the latest copy, referencing the version number above.

Retailers

Access to all of the WRAP resources that you might need, to help you take action on food waste prevention, in one easy to use, interactive document.

To make use of all the interactive features, it is best viewed electronically.

http://www.wrap.org.uk/content/driving-outwaste-food-drink-manufacturing-and-retailing



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Sustainable Management of Food



Call to Action

- Learn more about the Call to Action by Stakeholders: United States Food Loss & Waste 2030 Reduction Goal
- Learn more about the 2030 Goal



- Basic Information
- Food Recovery Hierarchy
- Upcoming Webinars
- Previous Webinars



- EPA's Food Recovery Challenge
- Food Loss and Waste 2030 Champions
- Tools for Preventing and Diverting Wasted Food



- Reduce Wasted Food Tips
- Food: Too Good to Waste Toolkit and Guide
- Donate Food

THURSDAY, MAY 17: EPA SMM Web Academy:

Business Innovations in Reducing Food Loss and Waste https://register.gotowebinar.com/register/7182742617092163074

.. highlighting the actions of three United States Food Loss and Waste 2030 Champions that are leading the way in helping the U.S. reach its 50% food loss and waste reduction goal. Speakers from each company will share best practices, tools, and resources they have created to prevent food from going to waste, and will address how shifts in company culture have changed operations as well as the critical role measurement of food waste plays in achieving their goals.



FALL 2015 | Volume 2



BEST PRACTICES & EMERGING SOLUTIONS

GUIDE

A joint project by the Food Marketing Institute, the Grocery Manufacturers Association & the National Restaurant Association.







ASSESSING WASTE STREAMS TO IDENTIFY DIVERSION OPPORTUNITIES

EXECUTE WASTE ASSESSMENTS

- Identify waste diversion improvement opportunities by looking at the various material streams in a sorted and weighed sample compacter load of solid waste.
- This provides a "snapshot" of WHAT is being disposed.

CONDUCT SITE ASSESSMENTS

- Conduct a site walk through to understand all policies, processes and employee actions related to the collection and disposal of waste materials.
- This explains WHY materials end up in the solid waste container.
 In addition, the site visit of fers insight into how a company can improve its current diversion processes, programs and reveal new best practices.

CREATE A WASTE BASELINE

Determine diversion rate baseline including historical wa

data and seasonal fluc (i.e., all waste and recy service tonnage, by a least one year).

 This provides insight in you are starting and the from which you can meet performance to goal.

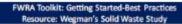


© 2013 Weste Management

FOOD WASTE

Wegmans Solid Waste Study

- Worked with local Waste Management representative to arrange landfill tour for store team.
- Store team was able to watch their compactor emptied in front of them.
- Team hand sifted through trash to identify recyclables and/or food.
- Powerful visuals aid in identifying what was truly junk and what could be saved.









http://www.foodwastealliance.org/wp-content/uploads/2014/02/Wegmans-Solid-Waste-Study-with-headers.pdf



FOOD WASTE









Food waste quantification manual to monitor food waste amounts and progression

Date: 31.03.16

Reducing food waste through social innovation
FURDING DISPOSED AND PROPERTY OF THE PROPERTY AND PROPERTY AND



What's Next?

- ✓ Monthly webinar series to continue (third Wednesdays)
 - Next webinar (June 20, 2018) will take a deeper dive for retailers TELL US IN THE EVALUATION SURVEY what would you like to see covered?
- ✓ Sectoral guidance and other tools under development
- ✓ If you aren't already signed up for the news update, do so at the bottom of

any page @ FLWProtocol.org

STAY IN TOUCH AND INFORMED Sign up to stay updated on the latest FLW news, case studies, tools, and training events.					
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Acknowledgements | Funders of WRI's FLW Initiative













Note: The Ministry of Foreign Affairs of the Netherlands, the Royal Danish Ministry of Foreign Affairs, the Swedish International Development Cooperation Agency (SIDA) and the Department of Foreign Affairs and Trade of Ireland (Irish Aid) provided core funding of the World Resources Institute, which made possible the development of the Food Loss and Waste Protocol.

GIANSWERS. QUESTIONS



www.flwprotocol.org

CONTACT US WITH ANY QUESTIONS

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