

Food Loss + Waste

PROTOCOL

WEBINAR

Guidance for Retailers: Why & How to Measure Food Waste **Part 2**

June 20, 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 (May 16, 2018)

Slides and recording at <http://flwprotocol.org/trainings/>

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

PART 2. Webinar today (June 20, 2018)

- Using food waste data to inform action
- Applying a product-level approach to food waste quantification
- Some common quantification issues
- Sharing food waste data

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 also shared by supermarket retailer Tesco:

Economic value

“ Food waste results in significant costs to our business, as well as our suppliers and our customers.

Environmental value

We can reduce our environmental impact 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/

Retailers Are Using the *FLW Standard* to Help Them Measure

Provides a:

- Common language
- Framework for consistent and transparent reporting

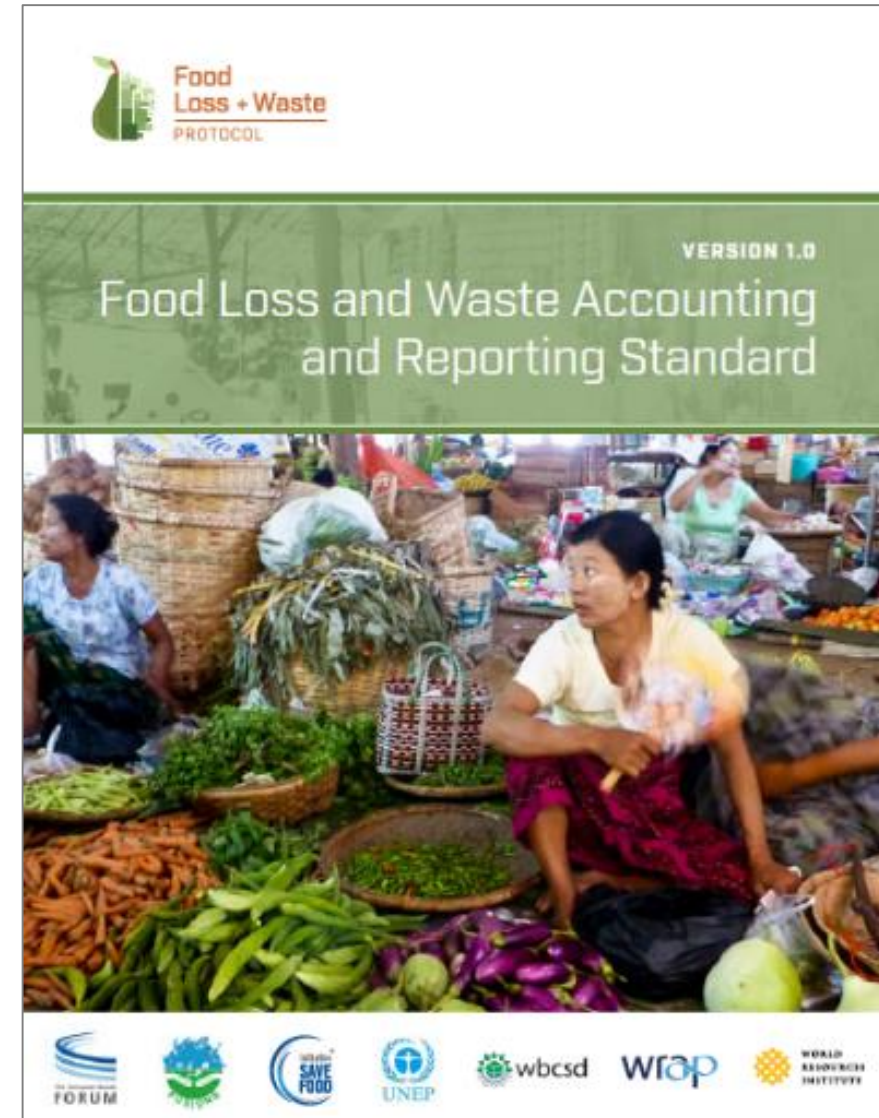
“...it gives us a clear unambiguous way for talking about food waste.”

... 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



www.FLWProtocol.org

Steps to Take in Developing A Food Waste Inventory

Why quantify?



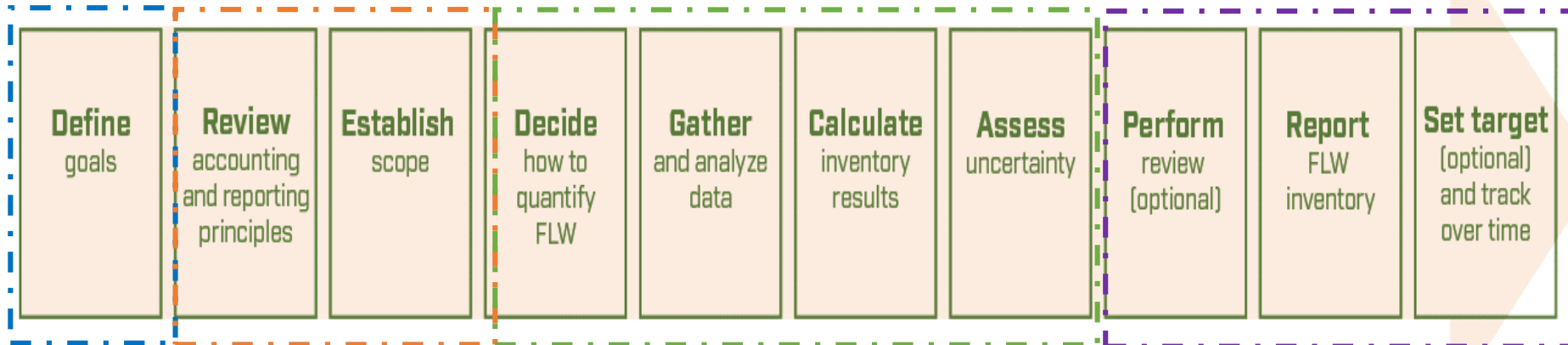
What to quantify? (January 2018 webinar)



How to quantify?
(February 2018 webinar)



Reporting
(March 2018 webinar)



Where to Find the FLW Standard & Resources (@ www.FLWProtocol.org)

[Why Measure?](#)[FLW Standard ▾](#)[News & Updates](#)[About the FLW Protocol](#)

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](#)

[📄 \(PDF\) - ENG | CHI | JAP | POR | SPA](#)

[FLW Standard](#)

[📄 \(PDF\) - ENG | JAP | SPA](#)

[Sample Reporting Template for FLW Standard](#)

[📄 \(XLS\) - ENG](#)

[Guidance on FLW Quantification Methods](#)

[📄 \(PDF\) - ENG](#)

[FLW Quantification Method Ranking Tool](#)

[📄 \(XLS\) - ENG](#)

[Learn to Use These Resources](#)

Guidance in the FLW Standard on How to Quantify

Decide

how 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; product-based)
 - Chapter 4. Waste composition analysis
 - Chapter 5. Records

Discussed on May Webinar (Part 1 for Retailers)

How to Quantify - Two Main Steps

1. Understand current waste streams

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

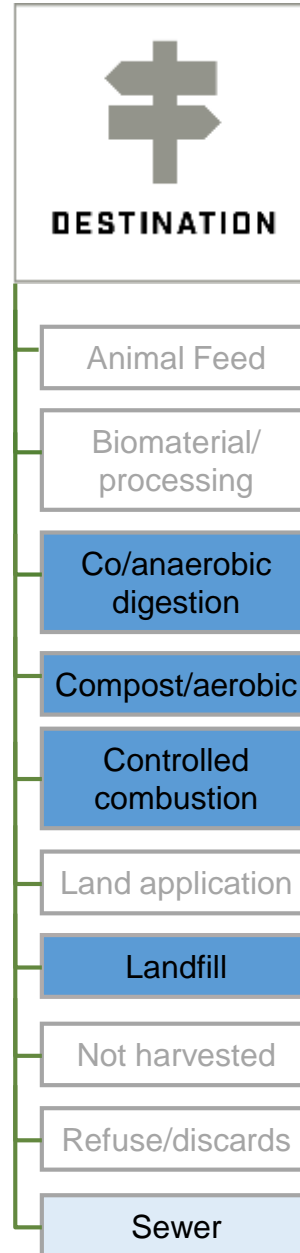
1 b) Understand the destinations of food not sold/ not distributed to stores

“Future proofing” strategy

- Track all 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

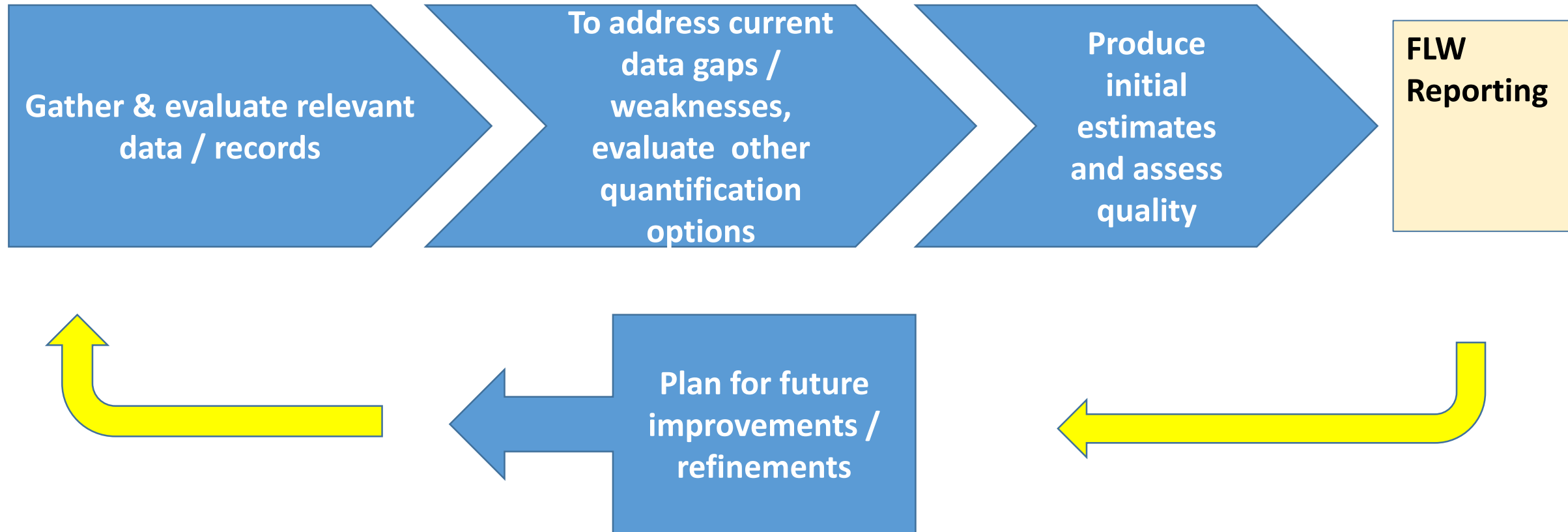
- The four destinations most commonly quantified are in blue.
- Also important is sewer as a disposal route (relevant in some markets).
- Other destinations retailers may quantify include animal feed or biomaterial/processing. This may or may not be considered “food waste” depending on a retailer’s definition.



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 separate from your food waste inventory

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



Discussed on May Webinar (Part 1 for Retailers)

How to Quantify - Two Main Steps

1. Understand current waste streams

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

2. Collect and compile data to calculate food waste amount

- a) Gather and evaluate relevant data and/or records
- b) To address current data gaps/weaknesses, evaluate other quantification options
- c) Produce the initial estimate and assess quality
- d) Plan for future improvements/ refinements

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 measurements 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

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 measurement to setting a course of action requires more detailed profiling of FLW causes and types....**
 - you are not alone on this journey: learn from the experience of others!

Topics to Cover

Using food waste data to inform action

1. Set a baseline – it's never too early
2. Different types of data provide different insights
3. The pros & cons of different methods

Applying a product-based method

Options and sources of data

1. Options for increasing granularity and accuracy of data
2. Considerations
3. Sources of data

Checking data and calculations

1. Steps in checking data
2. Tips when calculating your food waste

Some common quantification issues

Sharing food waste data

Set A Baseline – It's Never Too Early

- **Why set a baseline**
 - To know whether you're making progress (internal or externally announced targets)
- **How to set a baseline**
 - Use whatever data you have to set a baseline to get on the journey
 - Gives you more time to take action on reducing food waste
- **Improve the data over time (it's okay to recalculate your baseline)**
 - Even retailers with track-record in this area have room for improvement
 - As you get more granular data, you'll gain different insights

Different Types of Food Waste Data Provide Different Insights

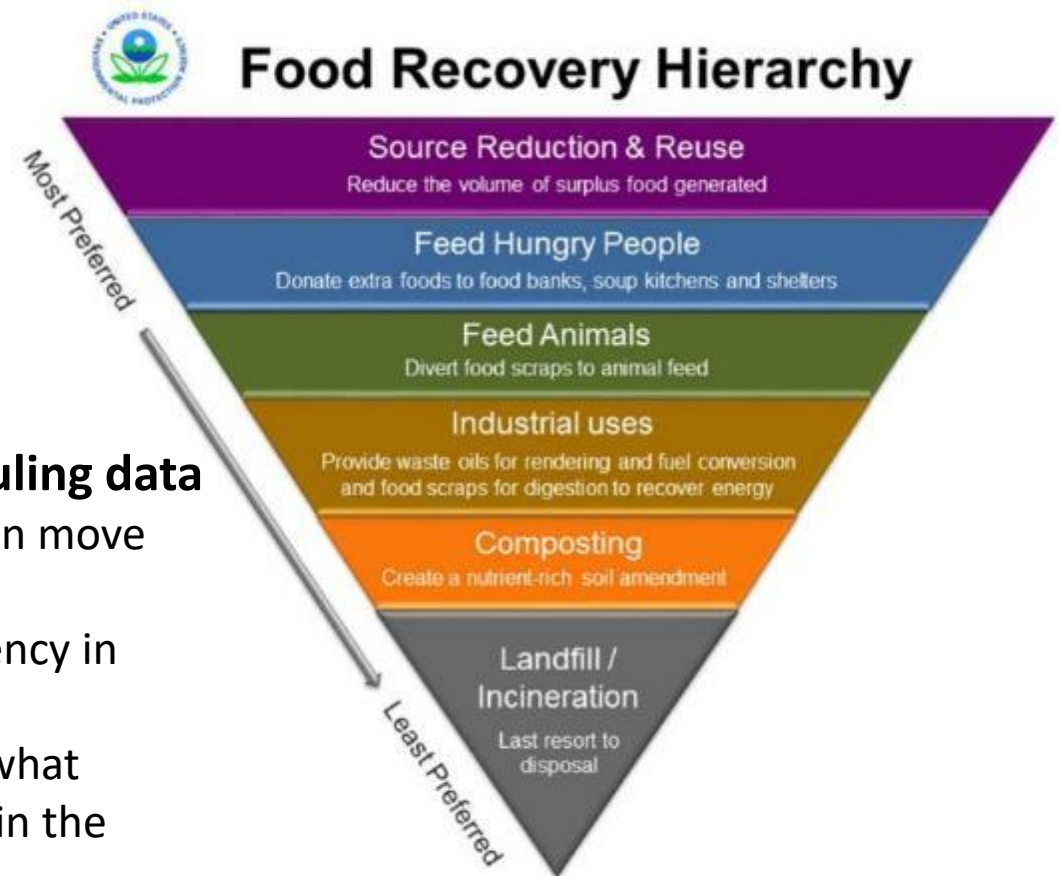
To understand the opportunities for meeting reduction targets (e.g. SDG Target 12.3), a retailer will over time need to use different types of data

To prevent food waste ==> Product-based data

- Enables you to identify product/category hot spots in order to prioritize interventions
- Enables you to gather information on causes of waste

To improve “end of pipe” management ==> Waste hauling data

- Enables you to understand current destinations so you can move food waste up the hierarchy
- Waste audit data enables you to assess segregation efficiency in your store.
 - If you are segregating then you want to ensure that what should be in the food waste stream is not ending up in the mixed waste stream



The Pros & Cons of Different Quantification Methods

More about the two typical quantification methods

1. Product based (SKU) scanning (Bottom up method)

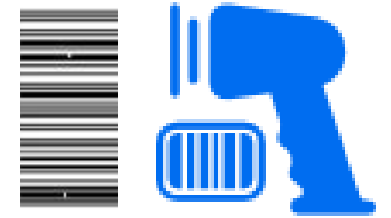
- ✓ Based on scanning unsold products and combining with standard product weights
- ✓ Retailer IT systems vary – for some additional calculation may be needed to convert ‘cost’ to ‘weight’



- High level of granularity
- Allows you to prioritize prevention action by product / category



- Necessary systems may not be in place or work needed to get different datasets to relate
- Doesn't tell you where it went unless scanning codes adapted further



2. Waste contractor records (Top down method)

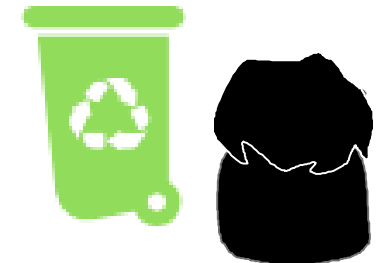
- ✓ Based on reported tonnage collection
- ✓ Compositional analysis/ waste audits required for mixed waste streams



- More readily available
- Allows you to understand destinations (to support better “end of pipe” management; segregation efficiency)



- Provides no granularity unless waste audits used – expensive and subject to sampling error
- Difficult to use to prioritize hot spots by product / category
- Need to subtract packaging weights



Options for Increasing Granularity and Accuracy of Data

FOCUS OF WEBINAR: PRODUCT-BASED APPROACHES (OPTIONS IN BLUE)

Quantification methods

Product-based:

- POS scanned data based on food product weights at SKU-level for all unsold products
- Conversion of overall financial data (product category, lost sales value) to FLW weight estimates

Waste-records based:

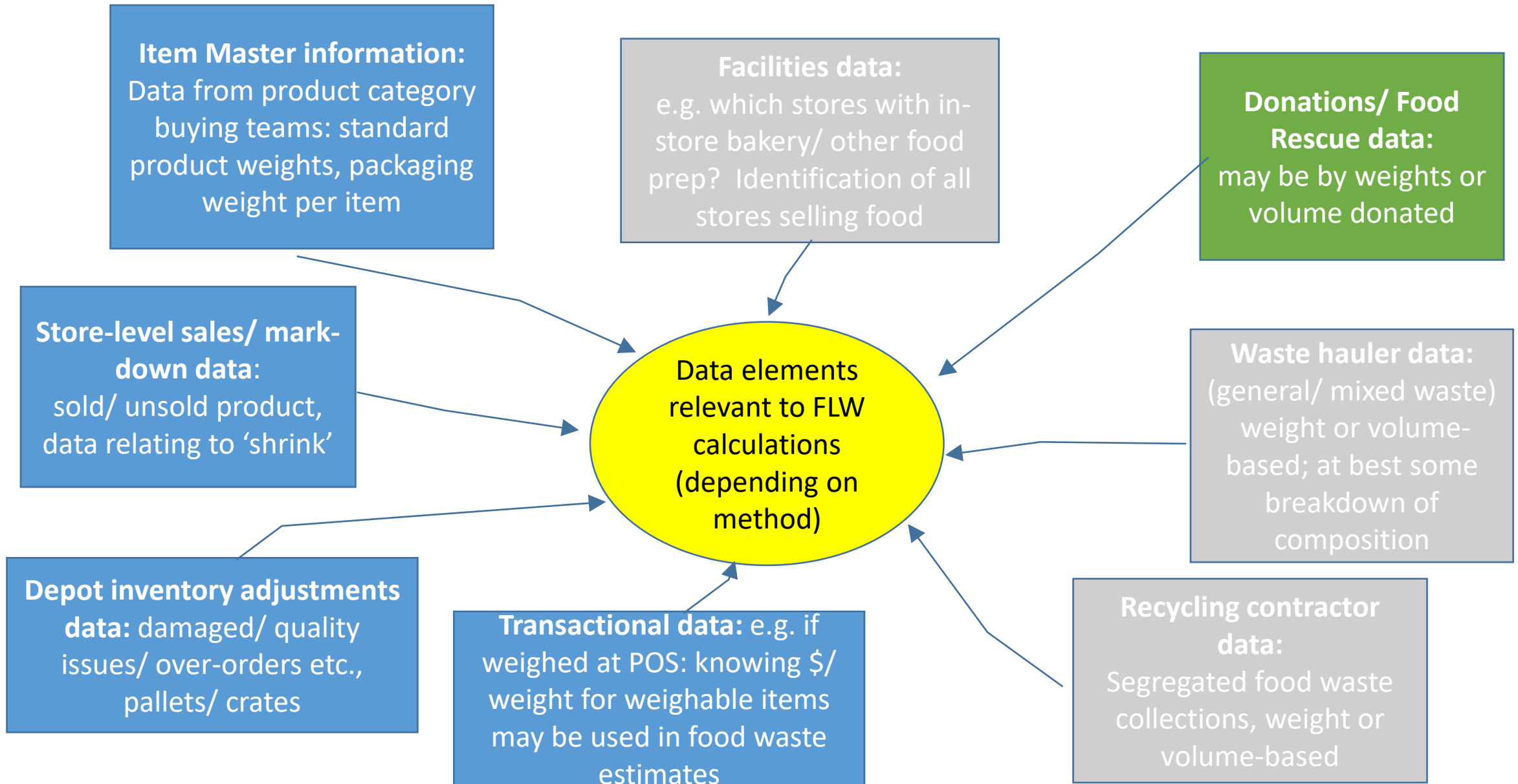
- Direct weighing of segregated food waste as it leaves retail stores/ depots, may be supplemented by more detailed waste audits: audits + waste contractor data
- Waste sampling of mixed wastes leaving retail stores/ depots: audits + waste contractor data

Considerations Related to Product-based Methods

Approach	Key issues impacting data quality	Food packaging included / needs subtracting?	Food waste estimate produced
POS scanned data on all unsold product - linked to food product weights at SKU-level	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	Ensure food product weight excludes packaging. If not, calculations to subtract packaging are needed.	Detailed SKU-level estimates, can be directly related to lost sales value and food waste reduction strategy
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	Ensure food product weight excludes packaging. If not, calculations to subtract packaging are needed.	Estimated food waste at category level; low granularity

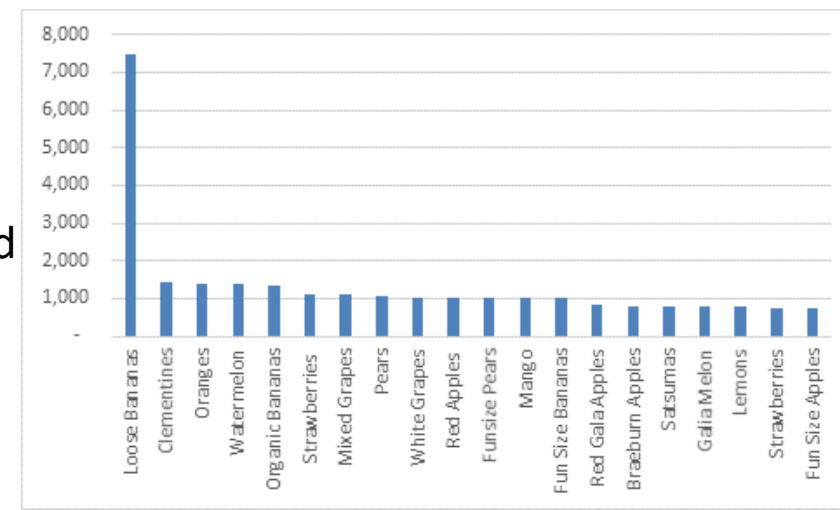
Sources of Data for Product-Based Methods

In blue are data elements relevant to product-based methods



Product-Based Method – Steps in Checking Data

1. Rank what is most wasted within each product category
2. Do products listed at top of ranking seem logical?
 - Highest food waste will likely be among items with short shelf life, easily damaged, subject to quality issues and sold in high volumes
 - For example: fruits (bananas); vegetables (potatoes); in-store bakery
 - Does your food waste inventory make sense based on what you sell in your store? (e.g., food waste inventory for a store with lots of shelf-stable SKUs will be different from a store with more of a fresh profile)
3. Look at gap between different calculations and try to explain it
 - Compare what you got from waste contractor records and any waste audits vs. product based method
4. If results seem odd:
 - Ask questions of teams that sit over the data sets – that's where errors creep into the final calculations (small error in highly wasted product may have a big impact)



Product-Based Method - Tips When Calculating Your Food Waste

Where calculations often go wrong:

1. Was the right weight unit used?

- Potential 'order of magnitude' errors if ***weight units are confused*** – be sure to check carefully (e.g. single burger bun marked as 700 grams = 1.5 pounds – not possible!)
- Product sold as ***multiples or single items, check that sales units are accurate*** (e.g., Avocadoes loose or packs of 4)

2. Was volume to weight conversion done correctly?

- Where product sold by volume ***need correct conversion to weight*** - but density cannot be assumed to be same as water (e.g. bottle of cooking oil, ice cream tub. A gallon of ice cream weighs about *5 pounds* vs. A gallon of milk weighs about *8.6 pounds*)

3. Loose product sold by item – is average weight correct?

- Establish how loose product feature in the scanning process: if sold by unit, check how average weights are collected (e.g. items of fruit)

Some Common Quantification Issues

Scope

- Whether or not to account for **store canteens / restaurants**
- Whether to include **depot returns** in scope (issue of product ownership)

Data

- How to measure **prepared foods**
- Excluding weight of **packaging** from weight of food waste
- Amount sent to particular **destinations**
- How to track food **donated / redistributed** to charities

Sharing Food Waste Data

1. Companies are increasingly sharing their food waste data publicly
2. Use the FLW Standard for transparency and consistency
3. More granular data provides additional insights

In 2017 Annual Report: Sharing Strategy, Targets, Progress, Multiple Metrics



- Tonnes food waste/food sales
- Tonnes food waste to disposal/food sales
- %age recycled (to various destinations)
- %age of unsold food donated to people

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 wh

- We recycled 68% of our food waste, mo
- Our total food waste per food sales we reduce this by 20% from our 2016 base

All these actions combined not only make us buying decisions and reduced operational w customers, 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

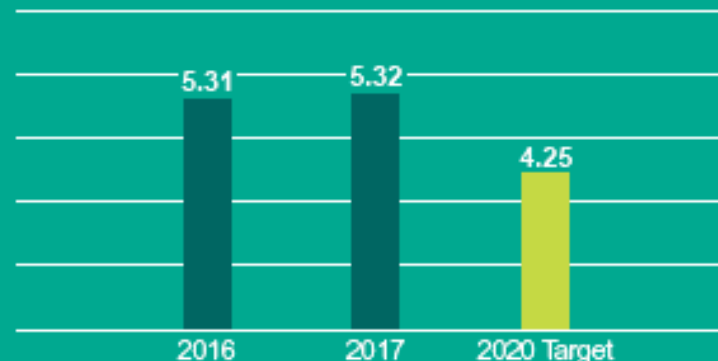
% food waste recycled for compost

% 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.

Use FLW Standard For Consistency & Transparency in Summarizing Data

HOW DOES THIS INVENTORY MEET THE *FLW STANDARD'S* REQUIREMENTS?

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*.

DELHAIZE  **AMERICA**

TESCO PLC

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

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

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

Reported as tonnes

3. Define and report on the scope of the FLW Inventory (see *FLW Standard* for additional details)

Timeframe: Calendar year (2016)

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 (UN CPC2.1 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

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

Records from waste management vendors

5. 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

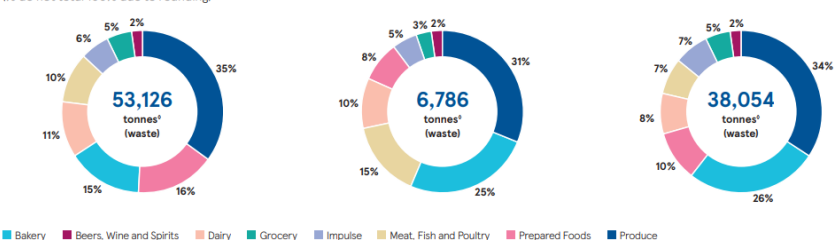
Sources of uncertainty include estimates made about the:

Different Types of Food Waste Data Provide Different Insights

In order to understand the opportunities for meeting reduction targets (e.g. SDG Target 12.3), a retailer will over time need to use different types of data

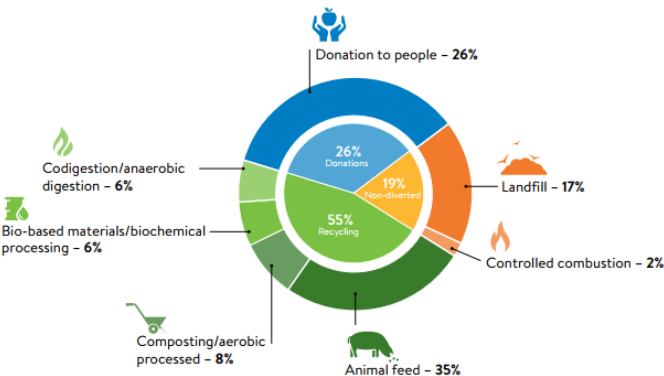
To target source reduction

2017/18 food waste by categoryⁱⁱⁱ
(% do not total 100% due to rounding)



ⁱ KPMG LLP were engaged to provide independent limited assurance over the selected food waste data highlighted in this report with a 0 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.tescopic.com/foodwastefigures.
ⁱⁱⁱ 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.

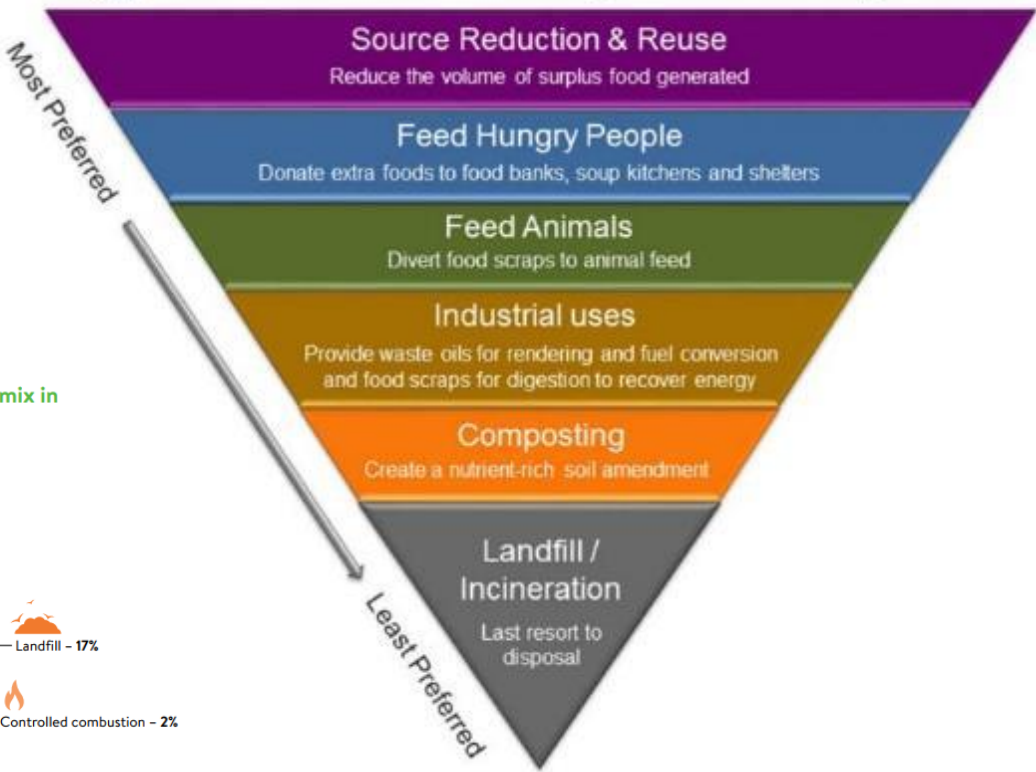
Walmart global food waste destination mix in Canada, Japan, U.K. and U.S.



Note: Cited weights are all net of packaging

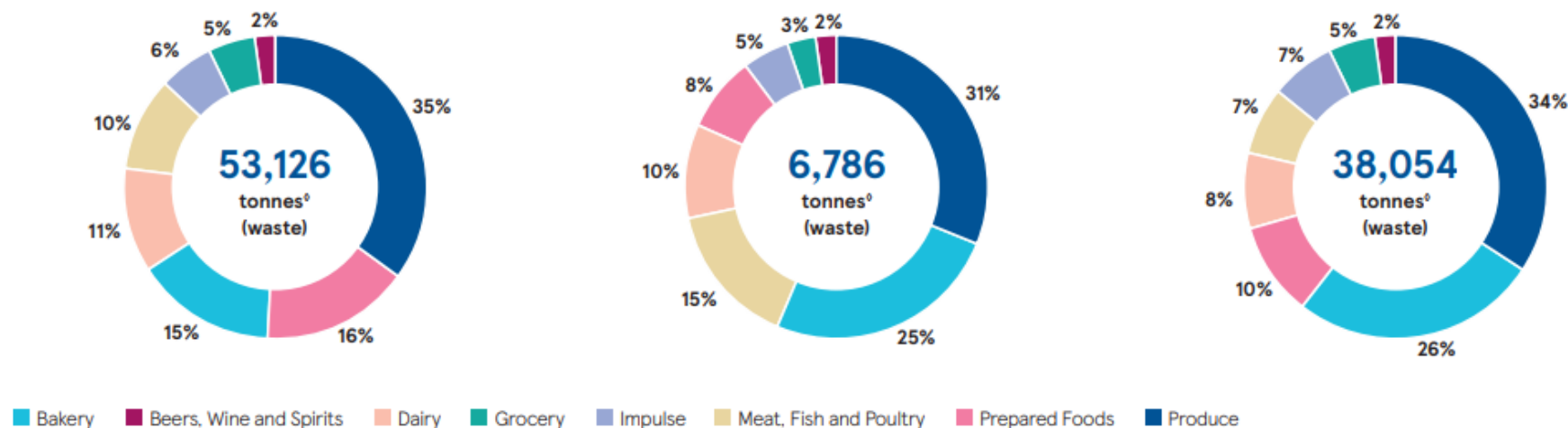


Food Recovery Hierarchy



End of pipe view

2017/18 food waste by category^(a)
(% do not total 100% due to rounding)



^o KPMG LLP were engaged to provide independent limited assurance over the selected food waste data highlighted in this report with a ^o using the assurance standard ISAE 3000.

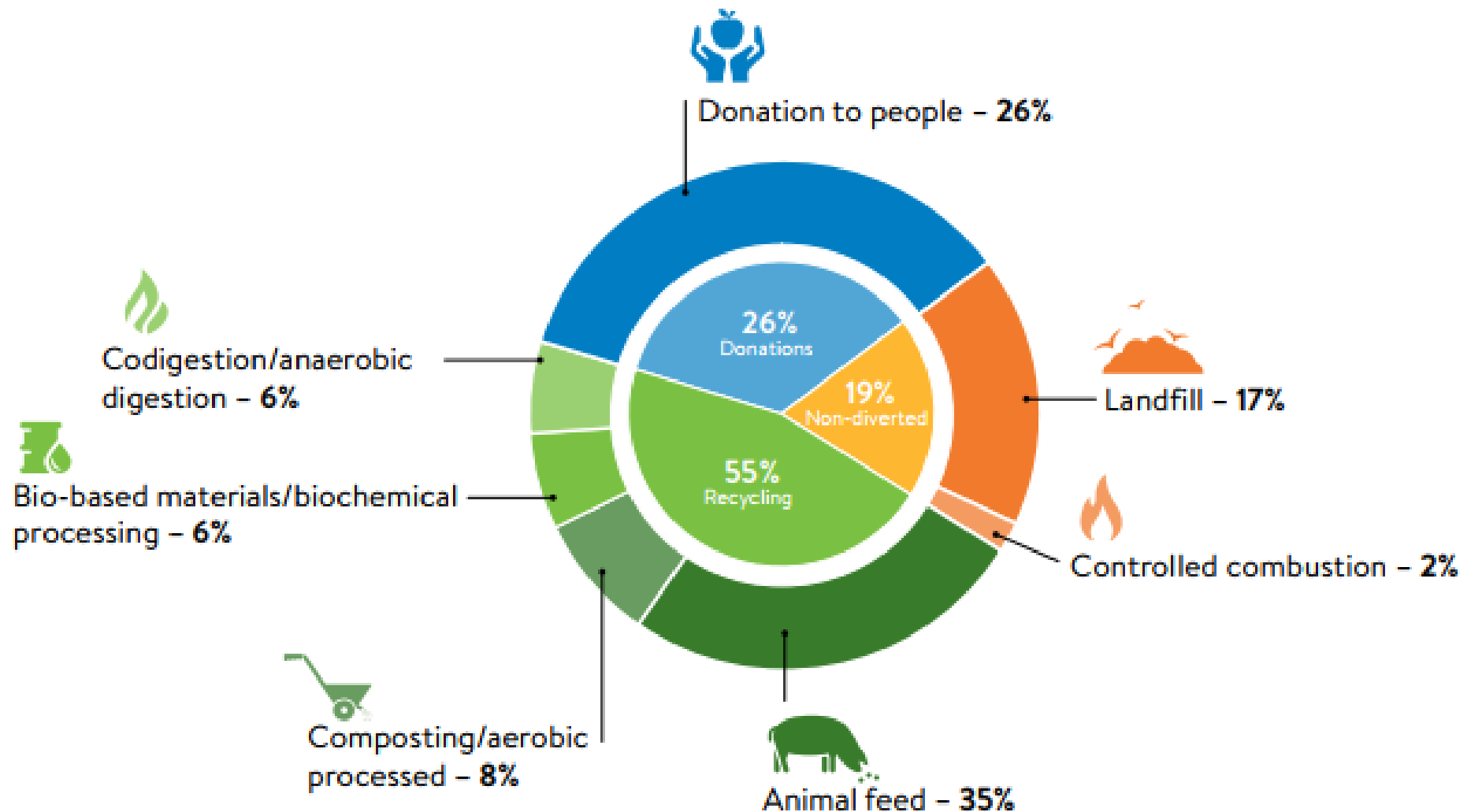
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^(a) Total food waste is made up of both food safe for human consumption and food that is not safe for human consumption which has been disposed of.

Tesco notes the multiple sources of data publicly:

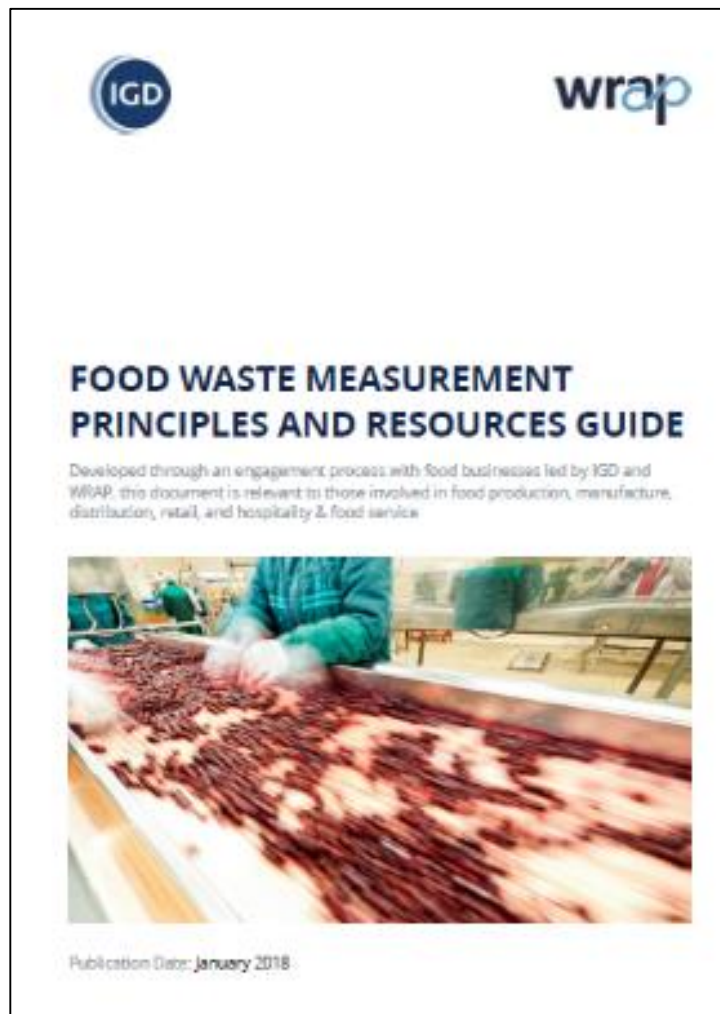
- Retail and depot waste
- Damaged, out-of-code, write-off, exceptional events waste
- Product data (contents weight and the packaged weight per item)
- Self-scan data
- Bakery weights
- Donation and charity data, colleague shop
- Animal Feed tonnage

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



Note: Cited weights are all net of packaging

WRAP's Resources for Retailers

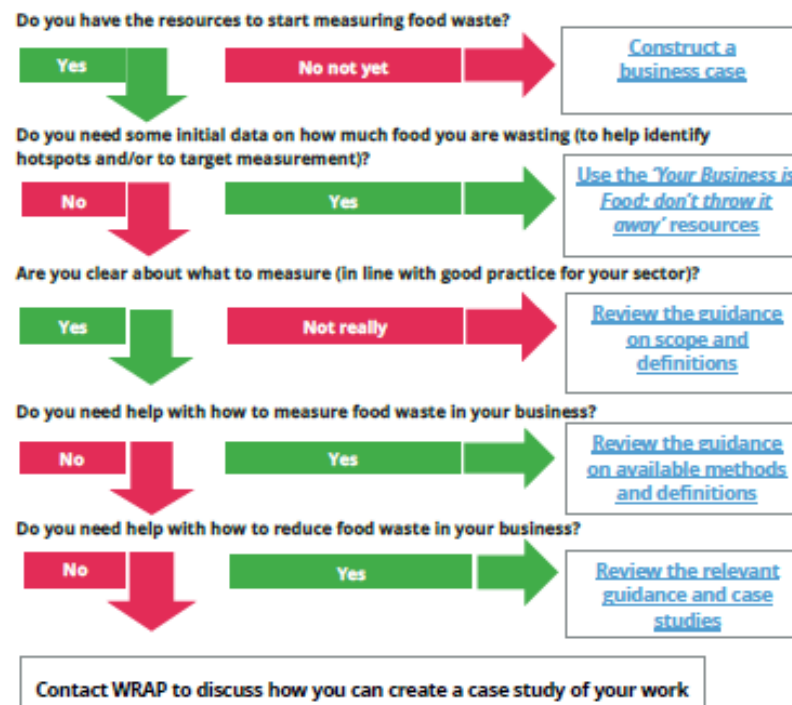


<http://www.wrap.org.uk/content/food-waste-measurement-principles-and-resources-guide>

Food waste measurement signposting tree

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

Interactive guide – just rollover and click to navigate



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.

wrap

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.

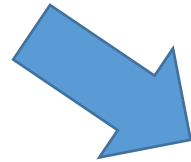
To make use of all the interactive features, it is best viewed electronically.



<http://www.wrap.org.uk/content/driving-out-waste-food-drink-manufacturing-and-retailing>

What's Next?

- ✓ Monthly webinar series to continue (third Wednesdays): July to focus on restaurants
- ✓ 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 (hotlink: <http://flwprotocol.org/#signup>)



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Acknowledgements | Funders of WRI's FLW Initiative



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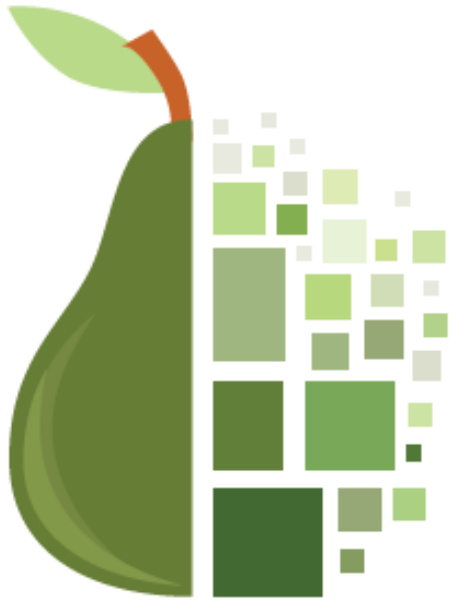
Ministry of Foreign Affairs of the
Netherlands

MINISTRY OF FOREIGN AFFAIRS OF DENMARK
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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.





Food Loss + Waste

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www.flwprotocol.org

CONTACT US WITH ANY QUESTIONS

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