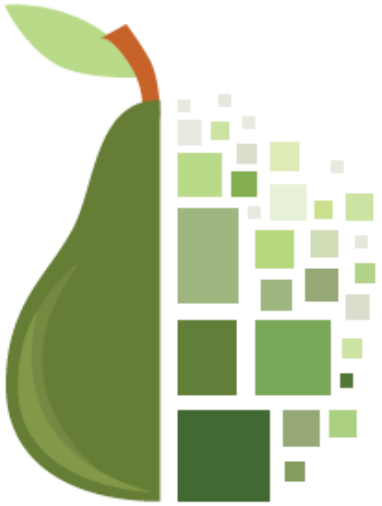


Food Loss + Waste PROTOCOL

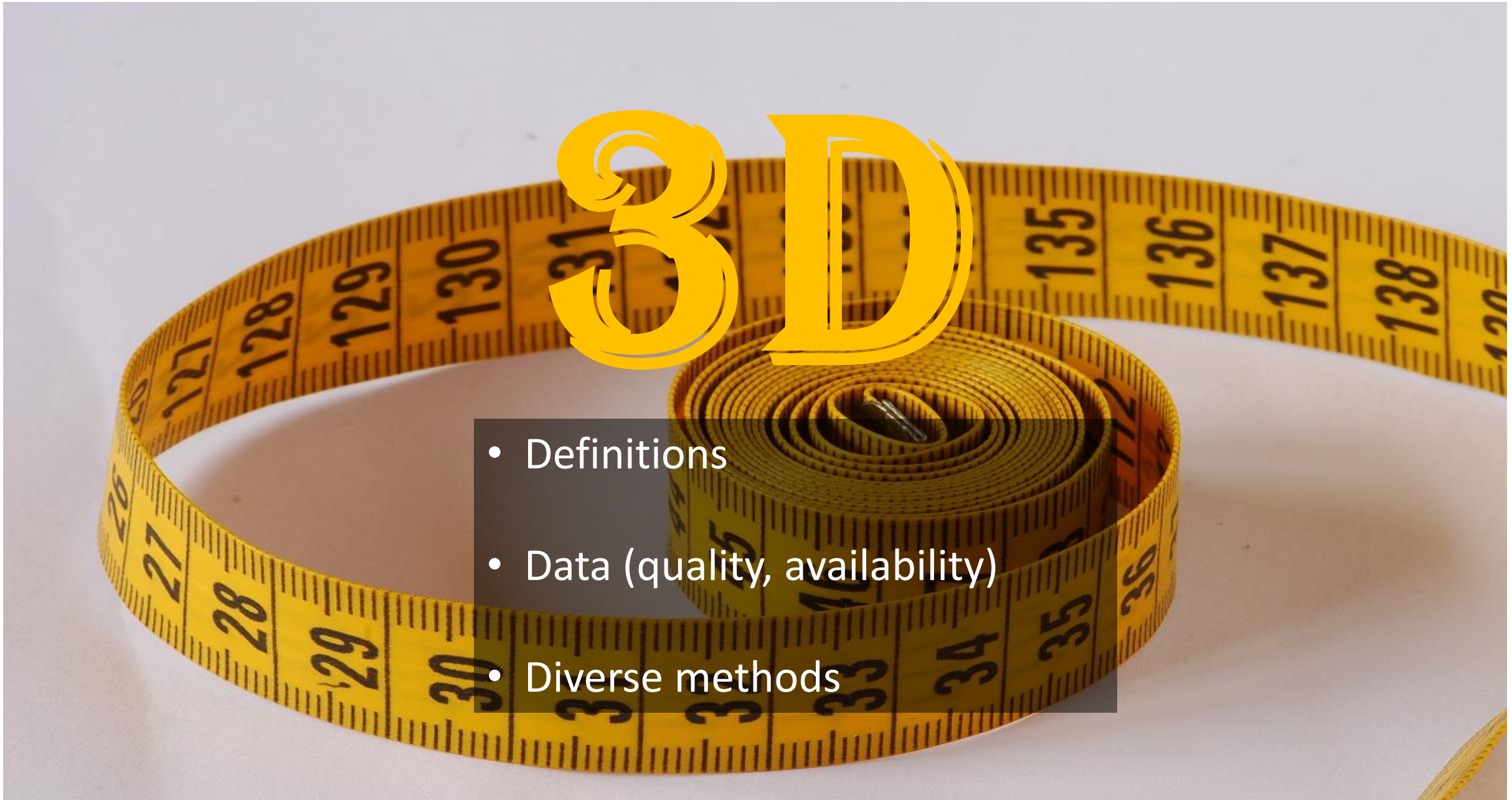
Reducing Food Loss and Waste: A Workshop on Impacts

Metrics for Understanding Food Loss and Waste

October 17, 2018

By Kai Robertson
Lead Advisor, FLW Protocol, World Resources Institute

Multi-dimensional Challenge

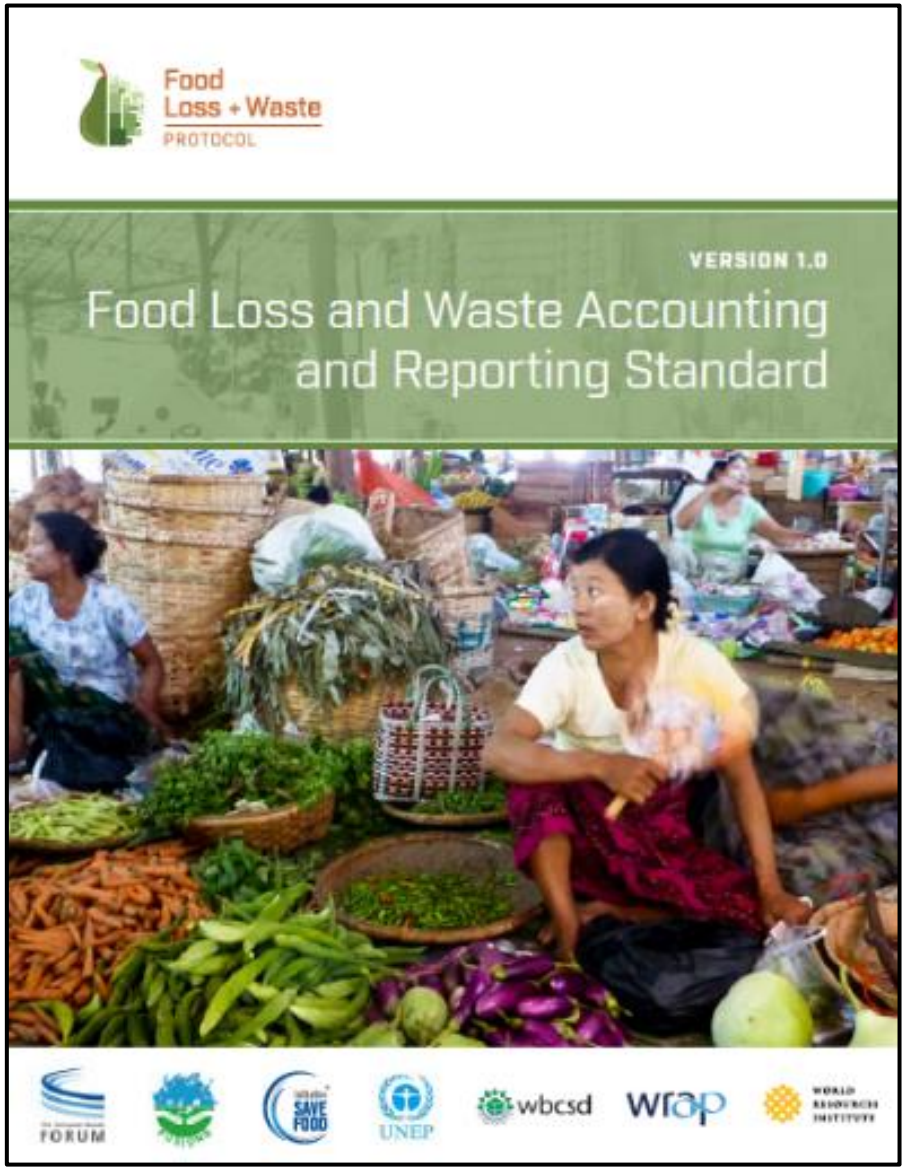


A Resource Helping Entities Measure and Report

- ✓ **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 (*a sampling*)

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

wrap · NC STATE UNIVERSITY · WWF · Cargill · Campbell's · DANONE ONE PLANET. ONE HEALTH · Blue Apron · sodexo QUALITY OF LIFE SERVICES · Walmart · NRDC · IKEA · LeanPath FOOD WASTE PREVENTION

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

Kellogg's

KELLOGG COMPANY: FOOD WASTE IN GLOBAL MANUFACTURING OPERATIONS
A Case Study

TESCO

TESCO'S OPERATIONS IN THE UNITED KINGDOM: FOOD WASTE IN STORES AND DEPOTS
A Case Study

Ahold Delhaize

DELHAIZE AMERICA'S OPERATIONS IN THE UNITED STATES: FOOD WASTE IN STORES AND DISTRIBUTION CENTERS
A Case Study

Nestlé

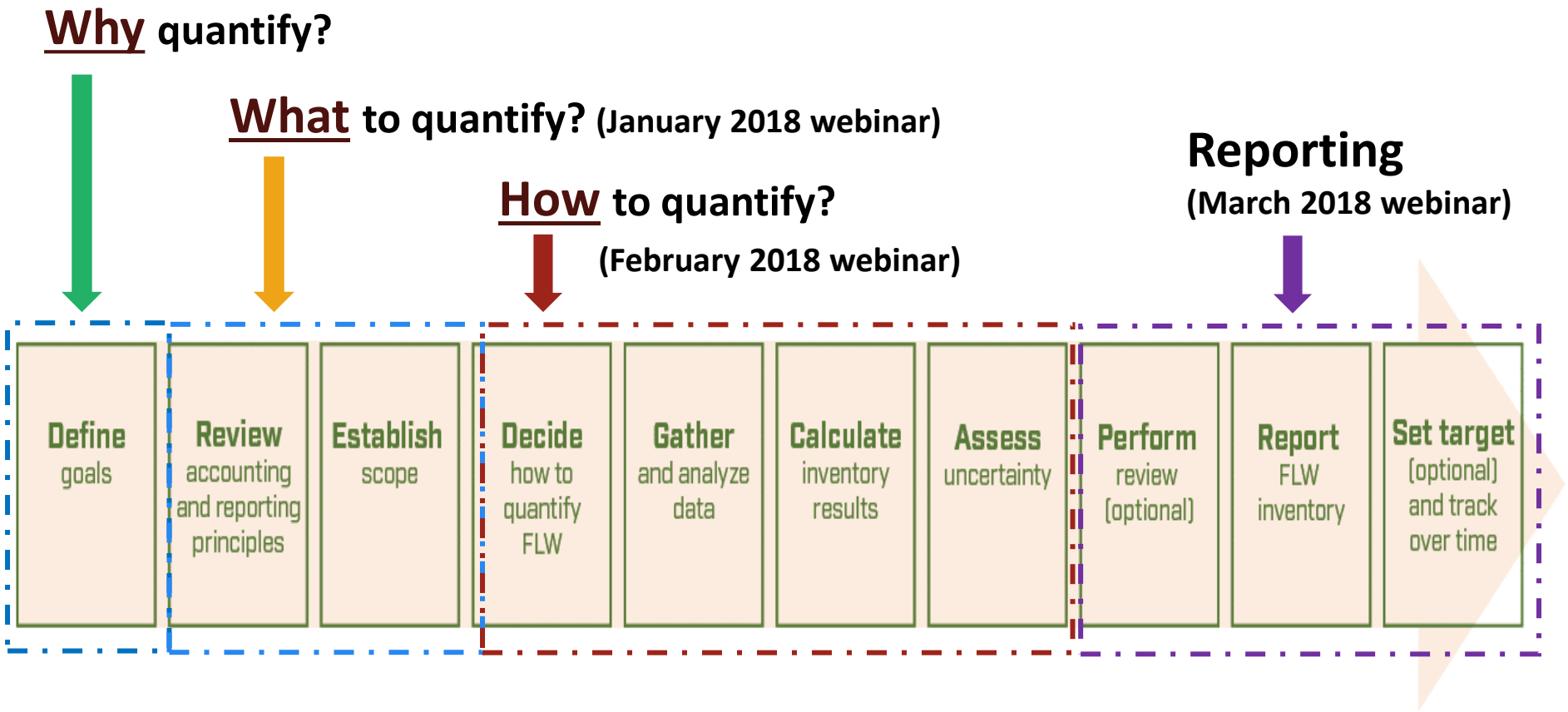
NESTLÉ DAIRY FACTORIES IN PAKISTAN: LOSSES ACROSS THE VALUE CHAIN
A Case Study

CRANSWICK

CRANSWICK GOURMET PASTRY'S OPERATIONS: QUANTIFYING FOOD WASTE FROM A SINGLE FACTORY
A Case Study

ESTIMATING QUANTITIES AND TYPES OF FOOD WASTE AT THE CITY LEVEL: TECHNICAL APPENDICES

Steps to Quantify and Report on FLW



Webinar slides and recordings are available at www.FLWProtocol.org

Goals May be Based on Public Targets or Internal Objectives

Define goals

A SAMPLING OF TARGETS:

Global

SUSTAINABLE DEVELOPMENT GOALS

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

Multi-stakeholder

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*

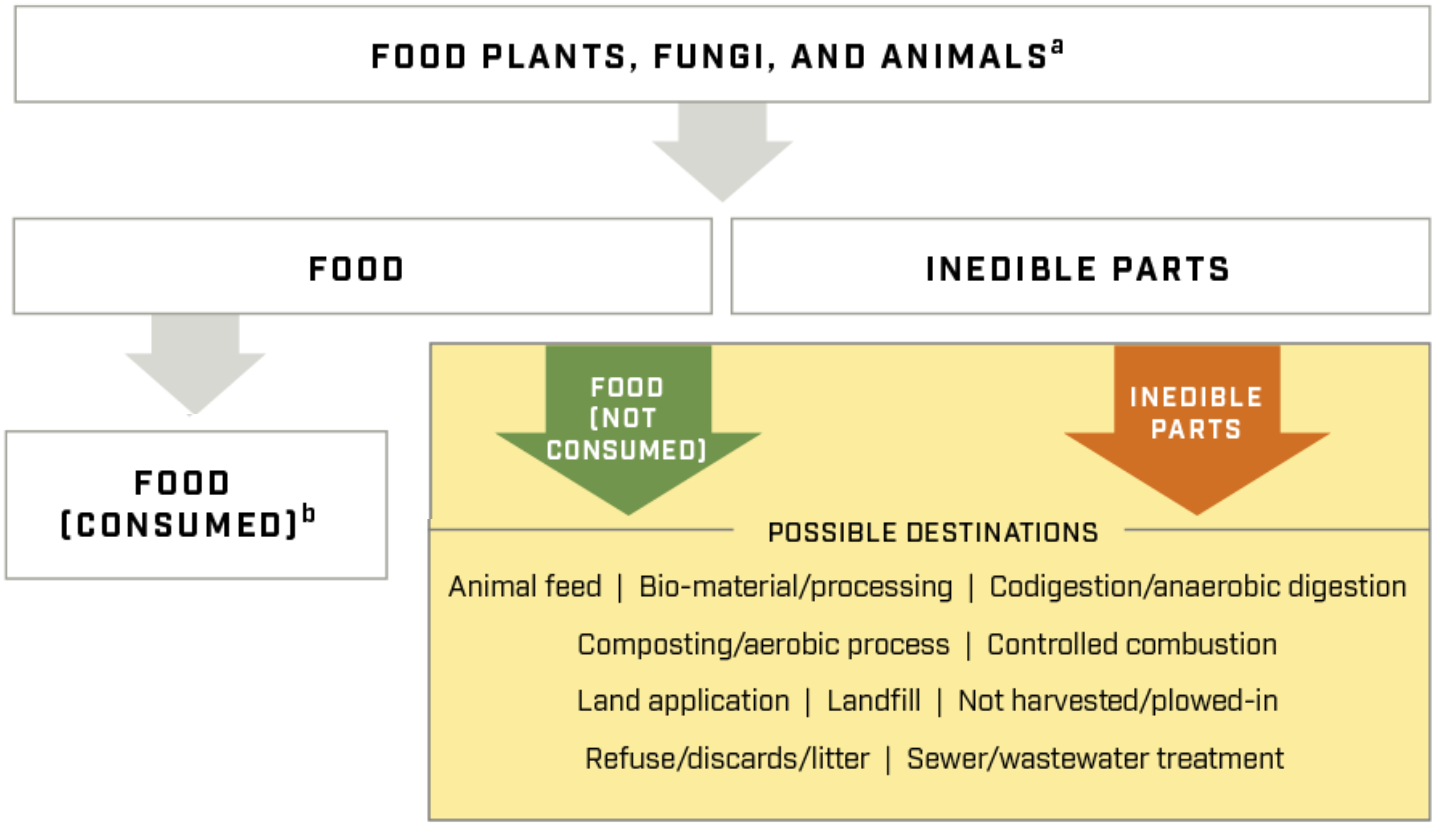
http://www.theconsumergoodsforum.com/sustainability-strategic-focus/waste/food-waste

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**."

Establish scope

Foundation of the Common Language



(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"

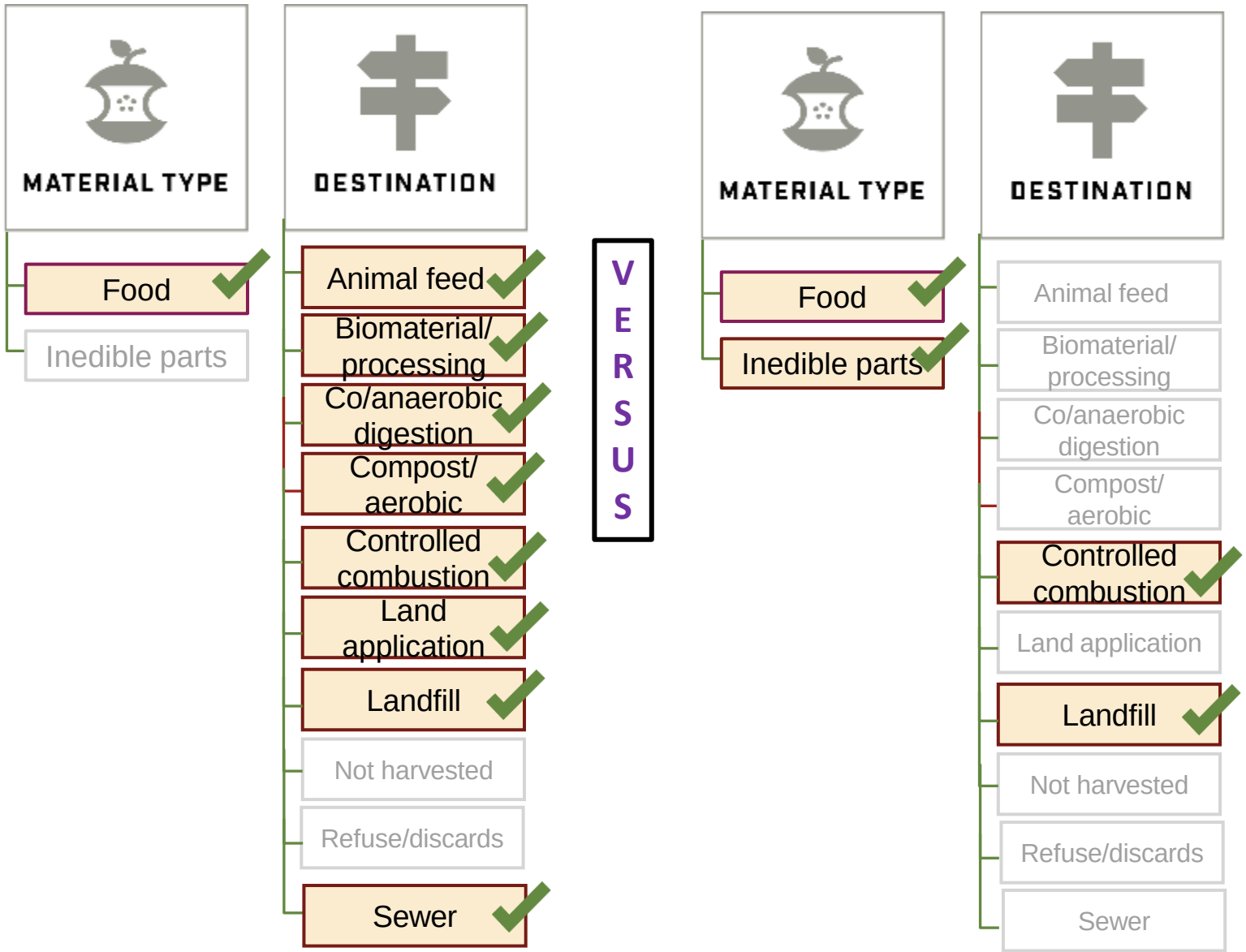
[a] Intended for human consumption (i.e., excludes crops intentionally grown for bioenergy, animal feed, seed, or industrial use)

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

Source: *FLW Standard*, Adapted from FAO, 2014. Definitional Framework of Food Loss. Working paper of the Global Initiative on Food Loss and Waste Reduction. Rome, Italy: FAO.

The Value of a Common Language … and Clear Reporting

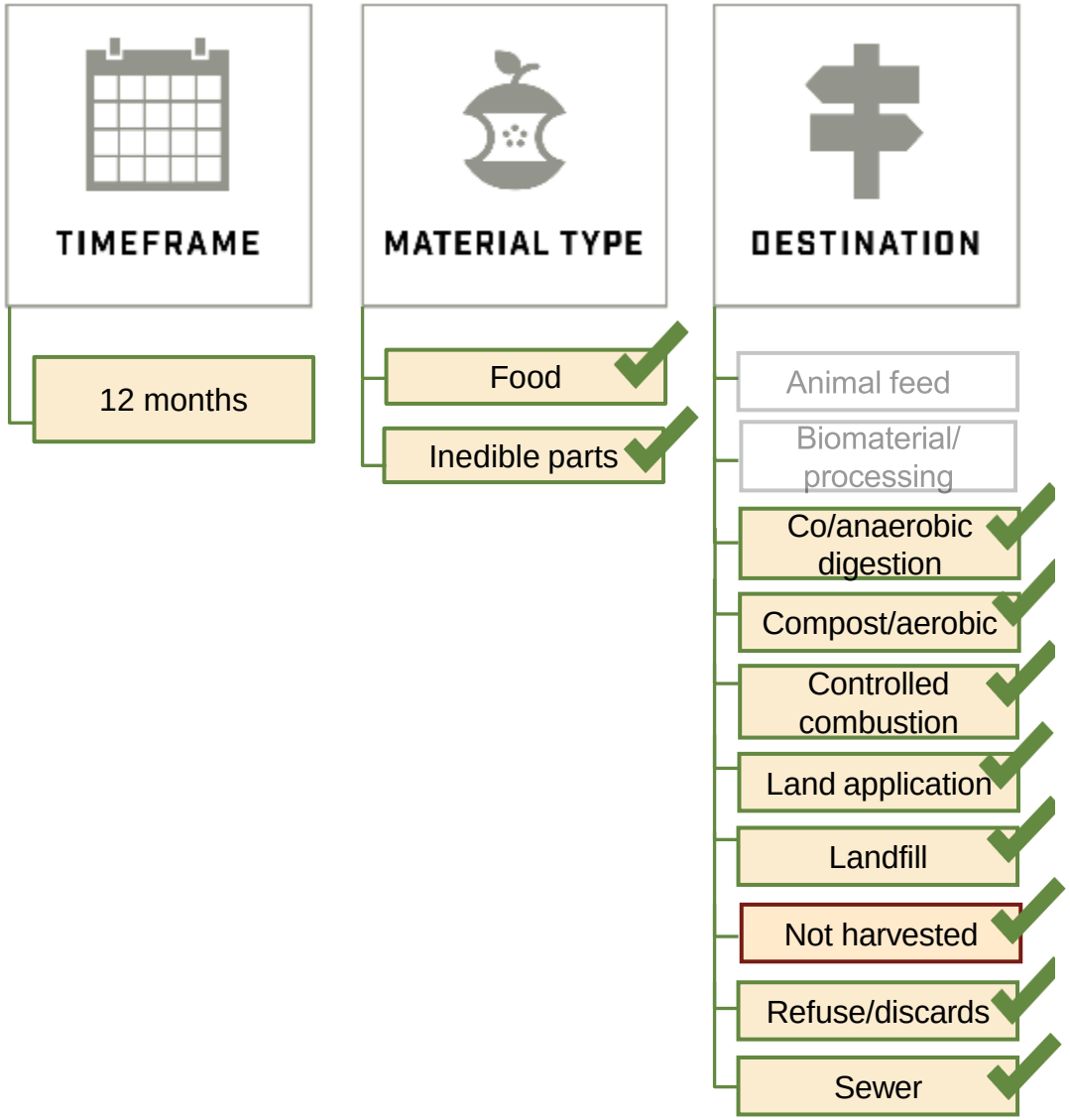
Goals (the "why") drive the definition (the "what")



USDA: 66.5 million tons

US EPA: 36.46 million tons *disposed*

Scope of SDG Target 12.3 Interpretation by Champions 12.3



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)

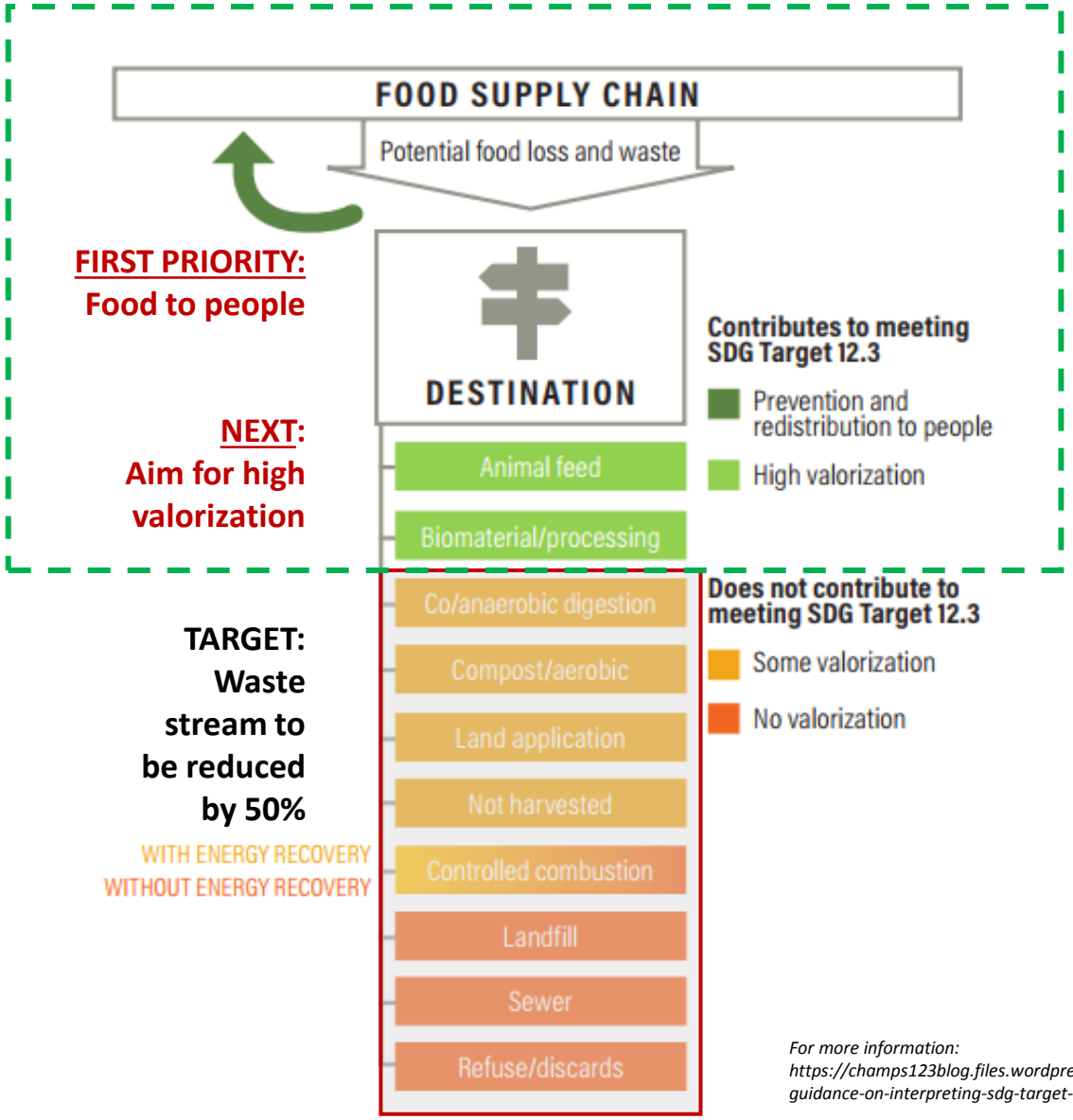
TARGET 12.3

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

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

Hierarchy of Destinations for Achieving SDG Target 12.3c

How to reach target?



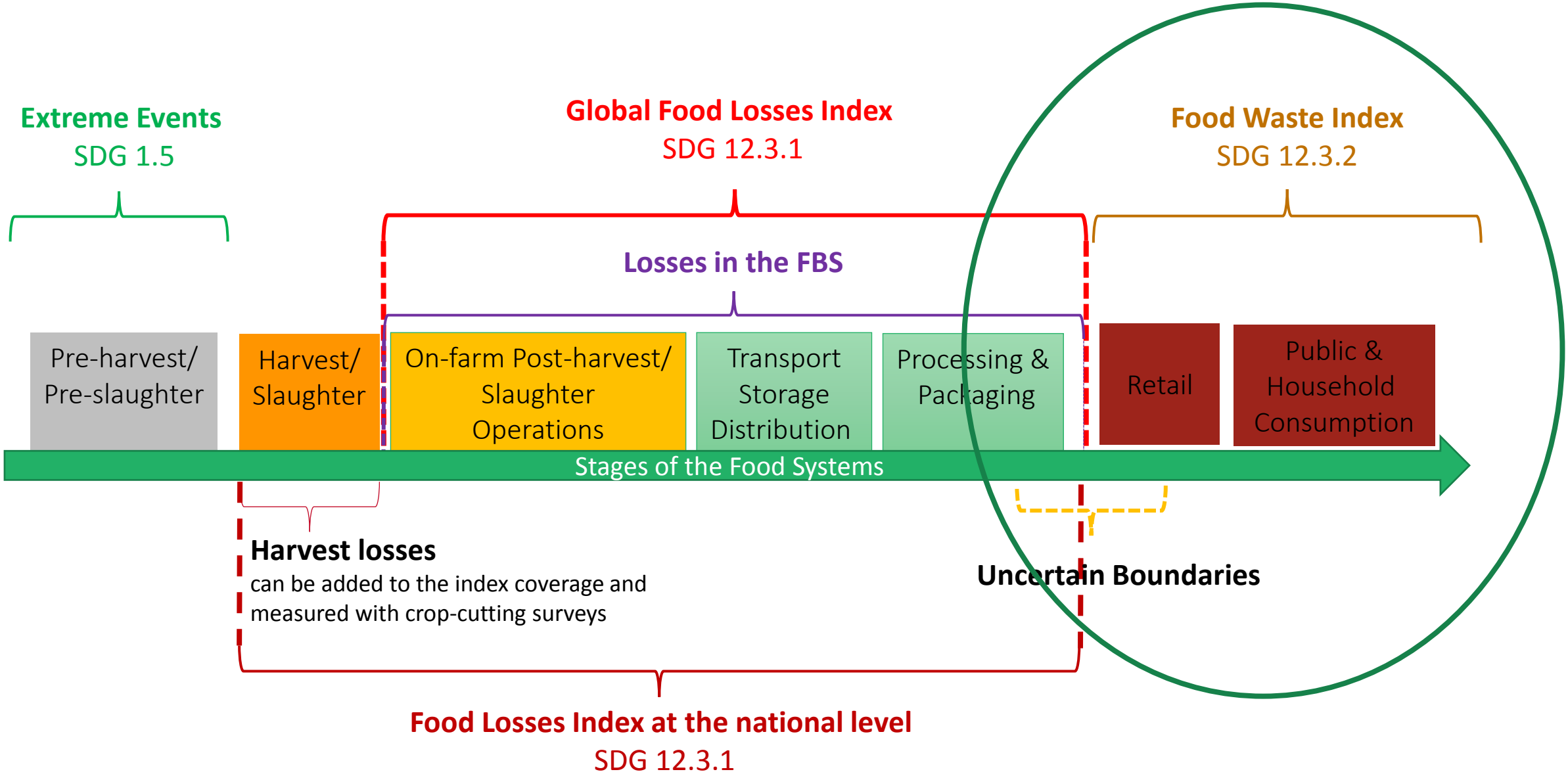
TARGET 12.3

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

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

CHAMPIONS 12.3

What the Indices Cover



Food Waste Index – Suggested Equation (Draft)

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

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

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

$$Food\ Waste\ Index = \frac{\left(\frac{FW_{Household,t} + FW_{Food\ Service,t} + FW_{Retail,t} + FW_{Manufacture,t}}{Population\ in\ year\ t}\right)}{\left(\frac{FW_{Household,b} + FW_{Food\ Service,b} + FW_{Retail,b} + FW_{Manufacture,b}}{Population\ in\ baseline\ year}\right)} \times 100$$

t = year of measurement

b = baseline year

FWI – Based on a Hypothetical Country

		amount of FW (tonnes)	country population	FW/capita	*calculation*		INDEX
2018	baseline	60,000,000	600,000,000	0.10	1	X100	100
	year t						
2020	YEAR 2	40,000,000	600,000,000	0.07	0.67	X100	67
	YEAR 3	40,000,000	650,000,000	0.06	0.62	X100	62
	YEAR 4	38,000,000	650,000,000	0.06	0.58	X100	58
2025	YEAR 7	35,000,000	650,000,000	0.05	0.54	X100	54
2030	GOAL	33,000,000	660,000,000	0.5			50

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).

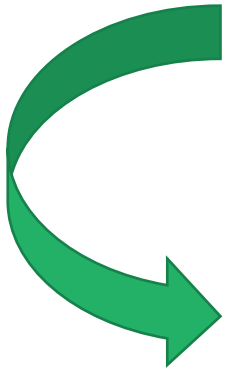
To ensure transparency and accountability ==> use format of FLWS inventory to describe what was measured and with which methods

Example of Retailer Indicators

Ahold Delhaize

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



Reduce food waste

KPI 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[4]
% food waste recycled for animal feed[5]
% food waste recycled for biogas generation[6]
% food waste recycled for compost[7]
% food waste recycled by rendering[8]
% of unsold food donated to feed people[9]

3 2016 data excludes Super Indo. Food waste is defined as food not sold by Ahold Delhaize brands, and not otherwise diverted to feed people. 'Food sales' includes all edible products we sell.
4 Recycling includes animal feed, biogas generation, composting, and rendering.
5 Recycling of organic waste to feed animals (e.g., diverting food scraps to feed farm, zoo or sanctuary animals).
6 Recycling of organic waste to produce biogas (e.g., anaerobic digestion, co-digestion, biomethanization).
7 Recycling of organic waste to produce compost (aerobic process), a product rich in minerals that can be used for gardening and farming as a soil conditioner.
8 Recycling of animal waste for bio-material and processing.
9 2016 data excludes Ahold USA and Albert Heijn. Food shrink donated is defined as food product inventory (in tonnes) that is no longer able to be sold, yet still is safe for consumption, which is given to hunger relief organizations. For this calculation, breakages and thefts are excluded from 'food shrink'.

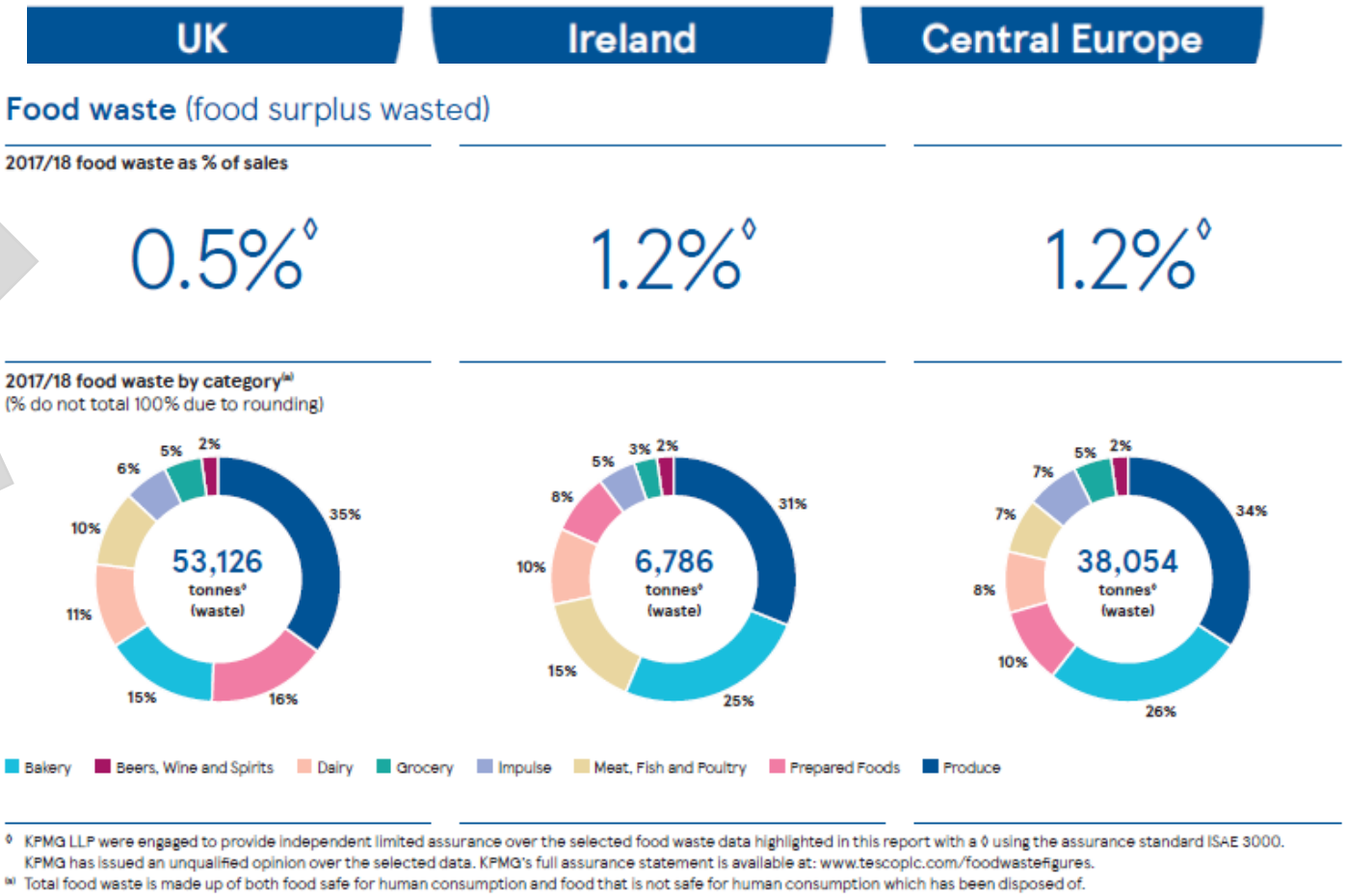
Source: Supplementary report on Sustainable Retailing performance, 2016

Example of Retailer Indicators

TESCO PLC

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



◊ 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.

[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.

Different Types of Food Waste Data Provide Different Insights

To target hotspots for source reduction

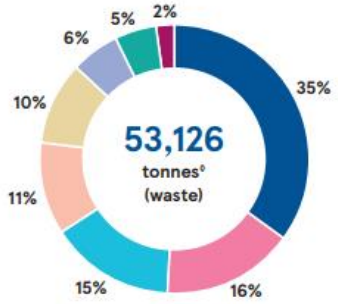
Look @ data by product category

To move material up the hierarchy

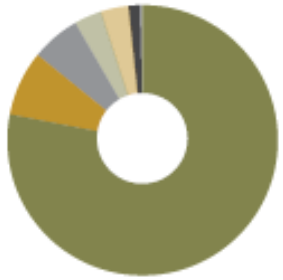
Look @ data by destinations

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

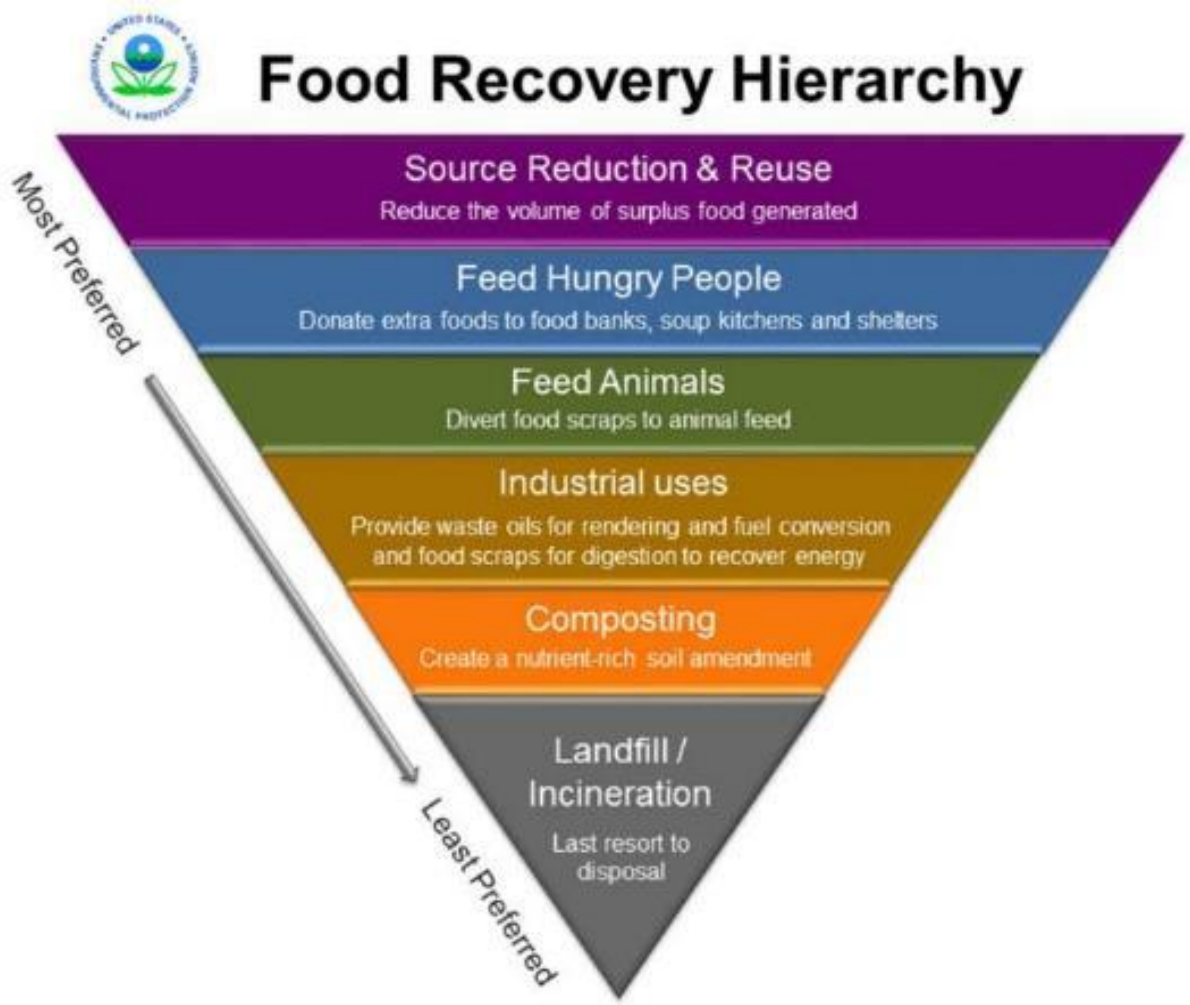
TESCO PLC



FOOD WASTE GENERATED
(tonnes)

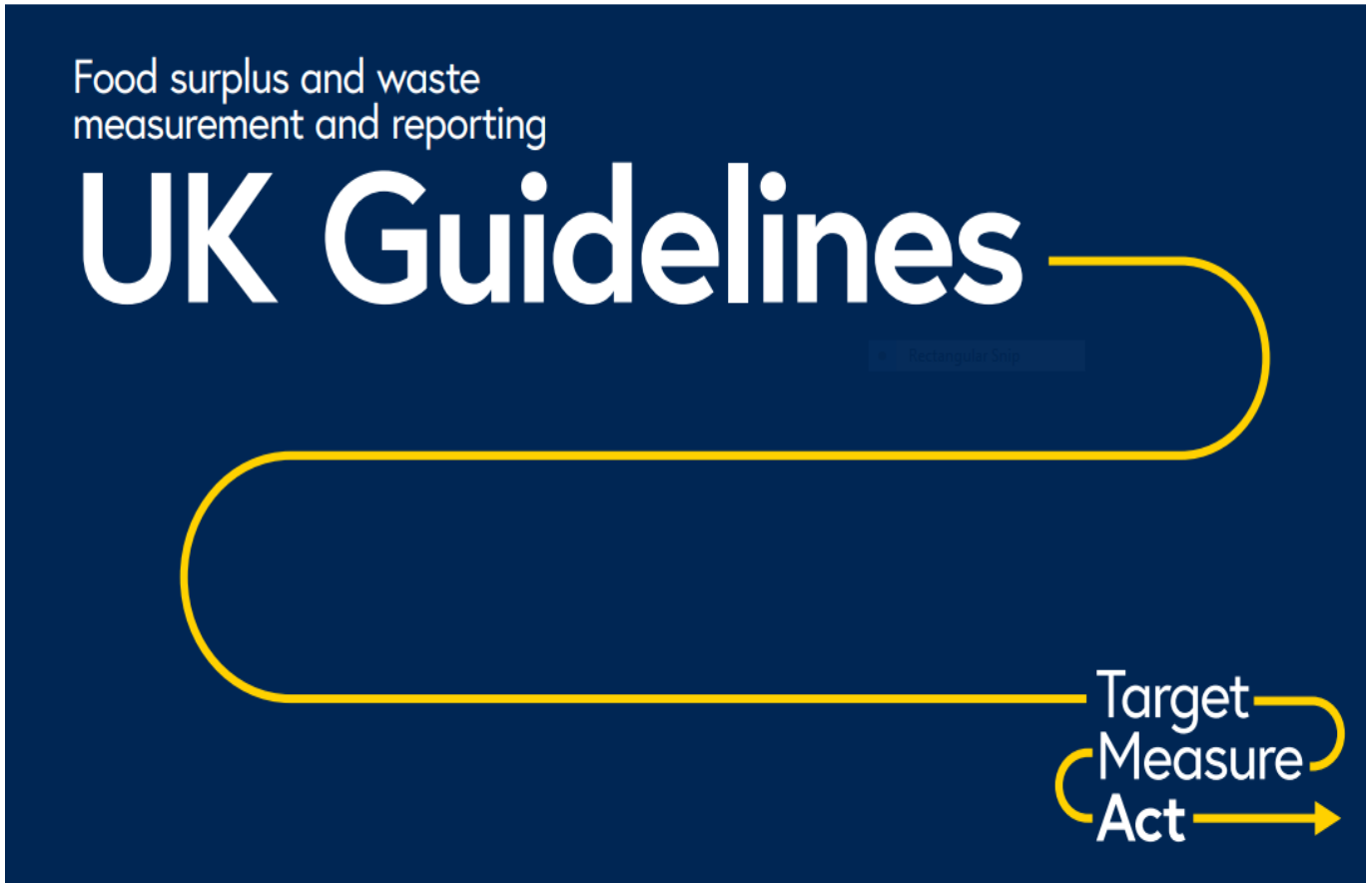


Animal Feed:	327,484
Land Application:	31,998
Anaerobic Digestion:	24,016
Aerobic Digestion:	14,722
Landfill:	13,838
Biomaterial Processing:	5,824
Controlled Combustion:	303



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**



UK Roadmap Common Reporting Template with Metrics

Summary

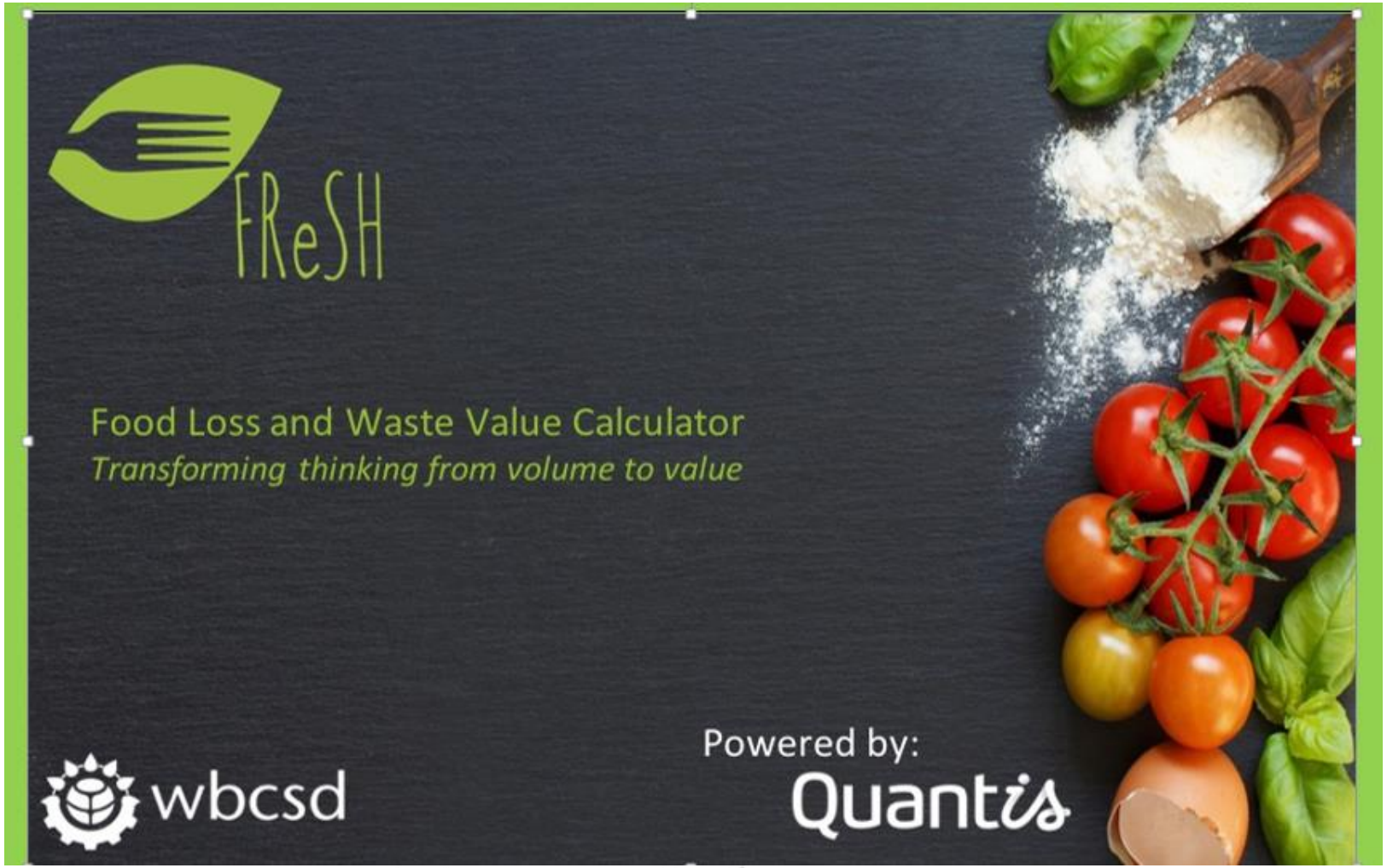
Reporting period (start date – end date):
Overall food waste in tonnes:
Food waste as a % of the product and ingredient handled by your organisation*:
(Optional) Percentage of inedible parts included in total food waste tonnage:

* 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)



Register for webinar: https://www.eventbrite.com/e/webinar-two-new-food-loss-and-waste-tools-to-know-tickets-50970373760

Why Use the FLW Value Calculator

Communicate value.

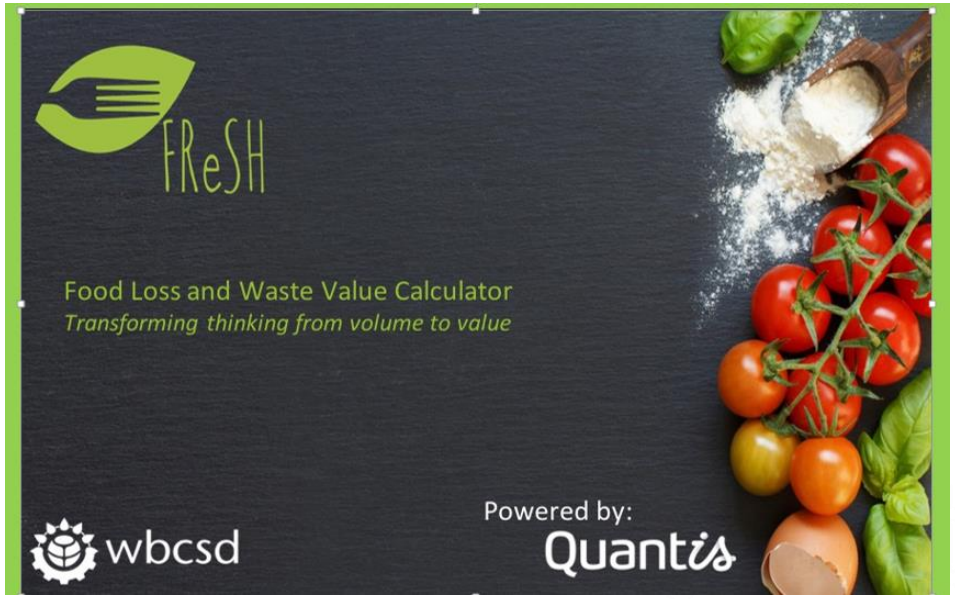
Demonstrate how efforts to prevent food loss and waste provide nutritional and environmental value

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

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

Acknowledgements | Funders of WRI's FLW Initiative

The Netherlands Ministry of Economic Affairs

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.


QUESTIONS
ANSWERS

CONTACT US WITH ANY QUESTIONS

Food Loss + Waste PROTOCOL

www.flwprotocol.org

For questions and suggestions, contact:
Kai Robertson (robertson.kai@gmail.com)
Brian Lipinski (blipinski@wri.org)
Craig Hanson (chanson@wri.org)