WORLD RESOURCES INSTITUTE

Creating a Sustainable Food Future – The Quantification Framework and Methodology by WRI

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Outline

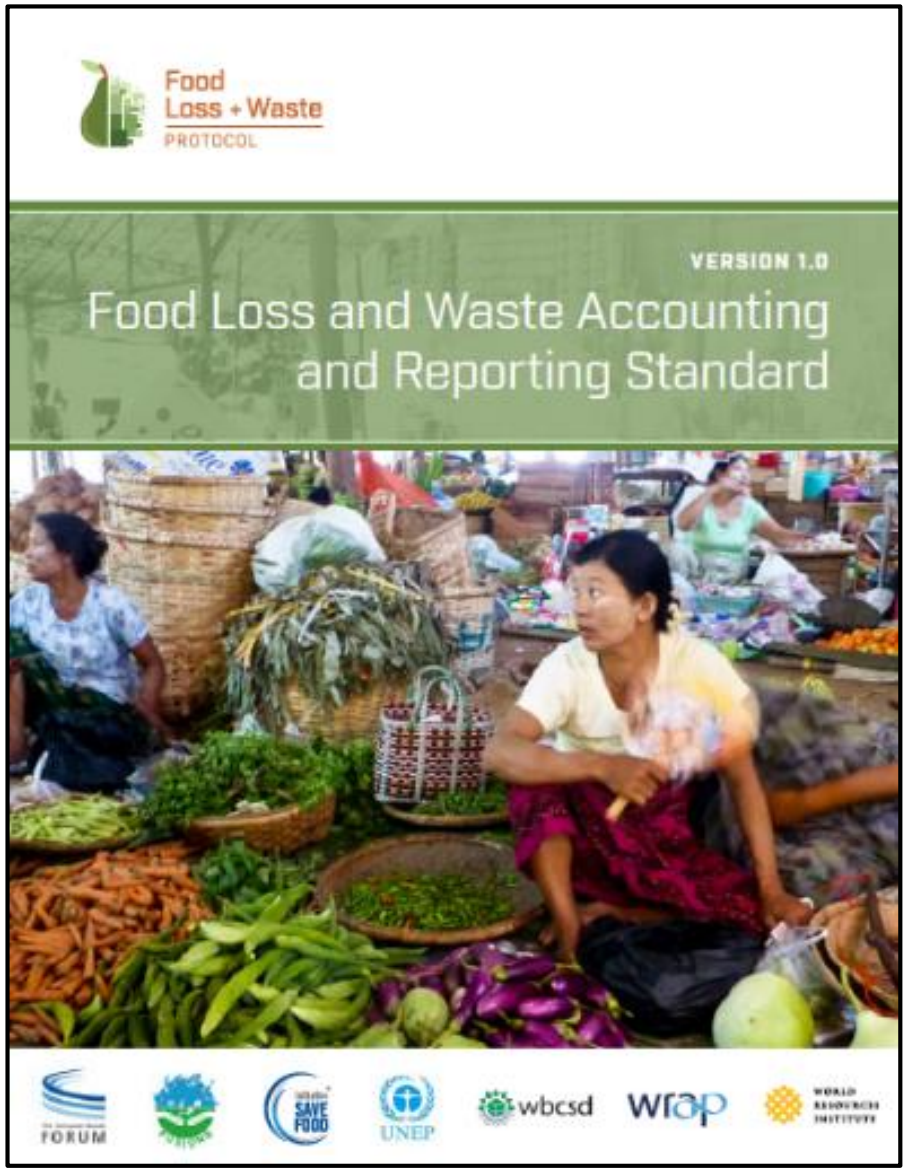
- FLW Standard
- CEC Practical Guide
- FLW Value Calculator

Benefits from using the *FLW Standard*

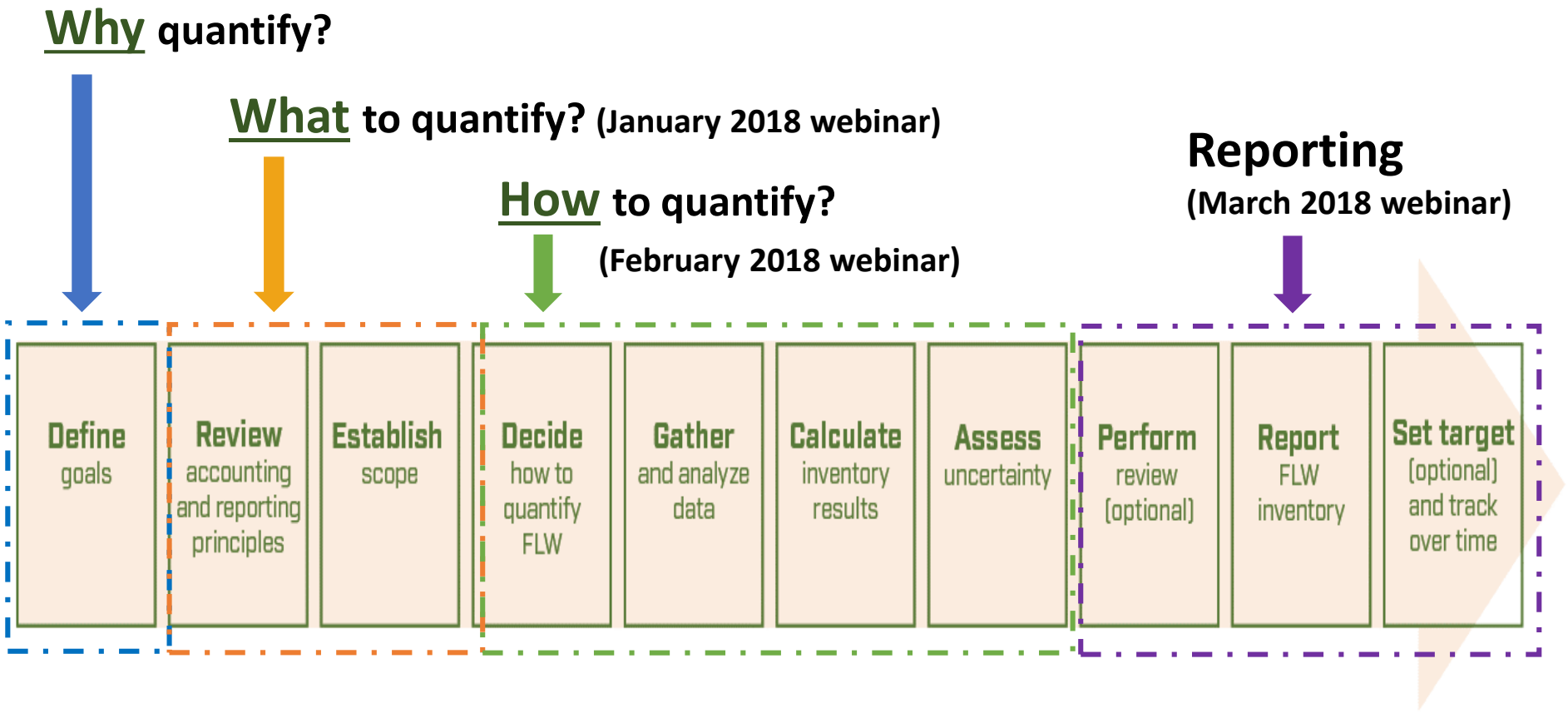
- ✓ **Common language**
- ✓ **Practical guidance**
- ✓ **Reporting framework**
  Summarize your inventory consistently and transparently

"… provides consistent language to use … and standard ways to measure and report."

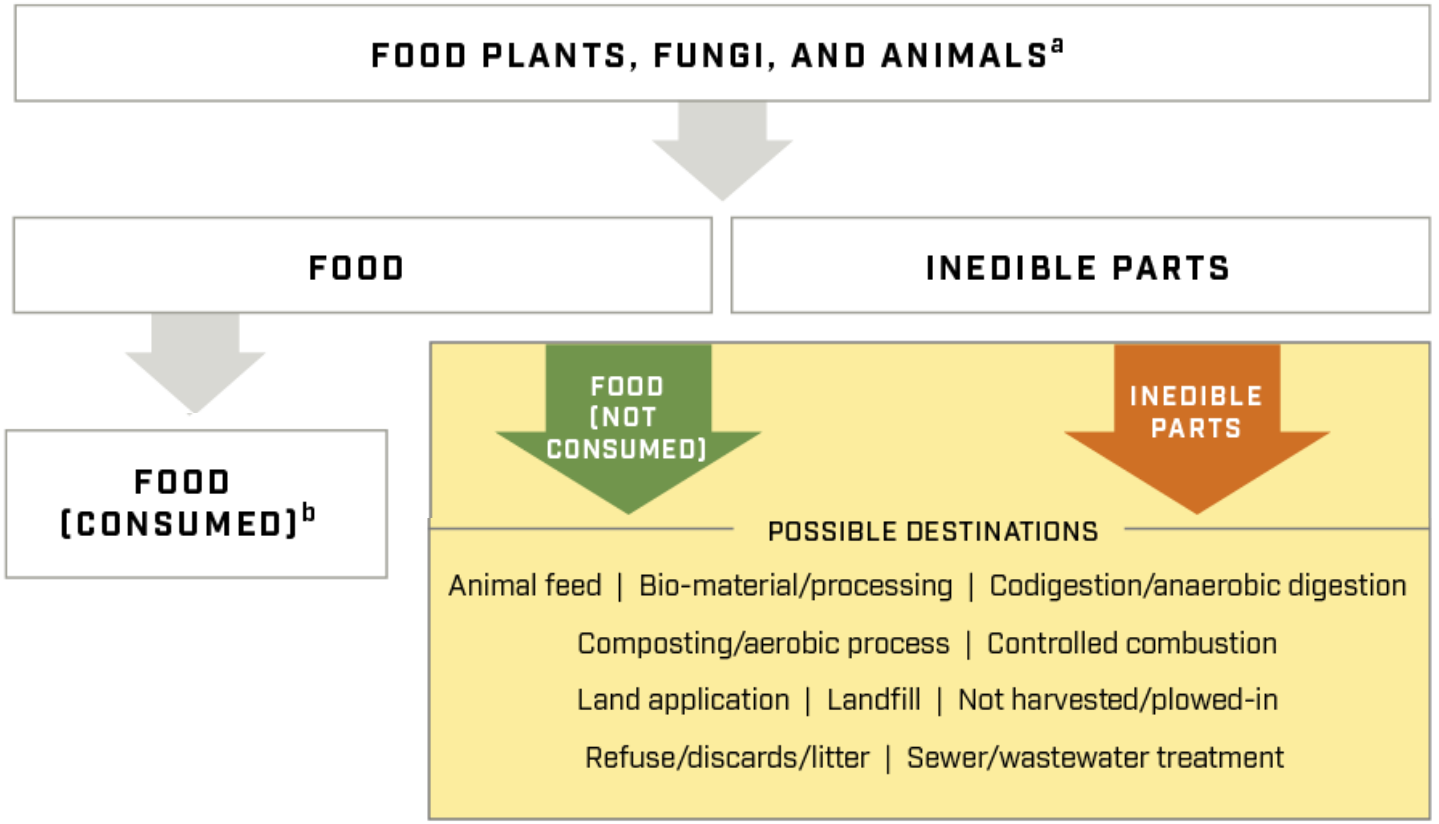
Kellogg Company



Steps to quantify and report on FLW



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"

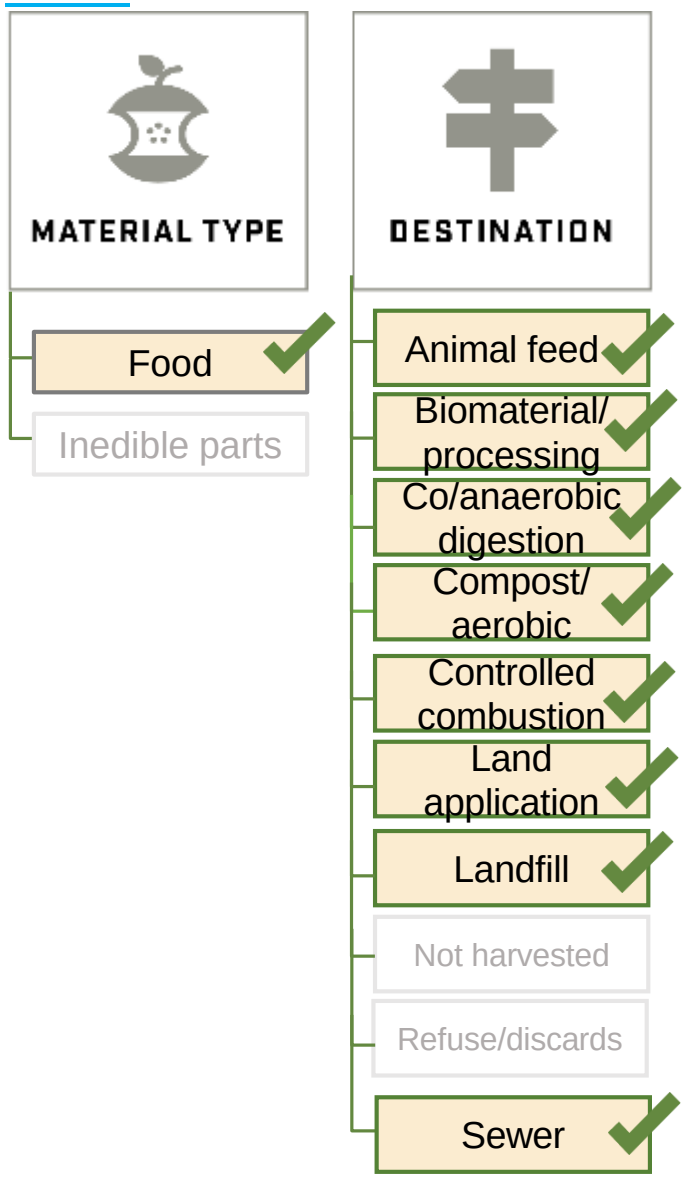
[a] Intended for human consumption (i.e., excludes crops intentionally grown for bioenergy, animal feed, seed, or industrial use)

[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.

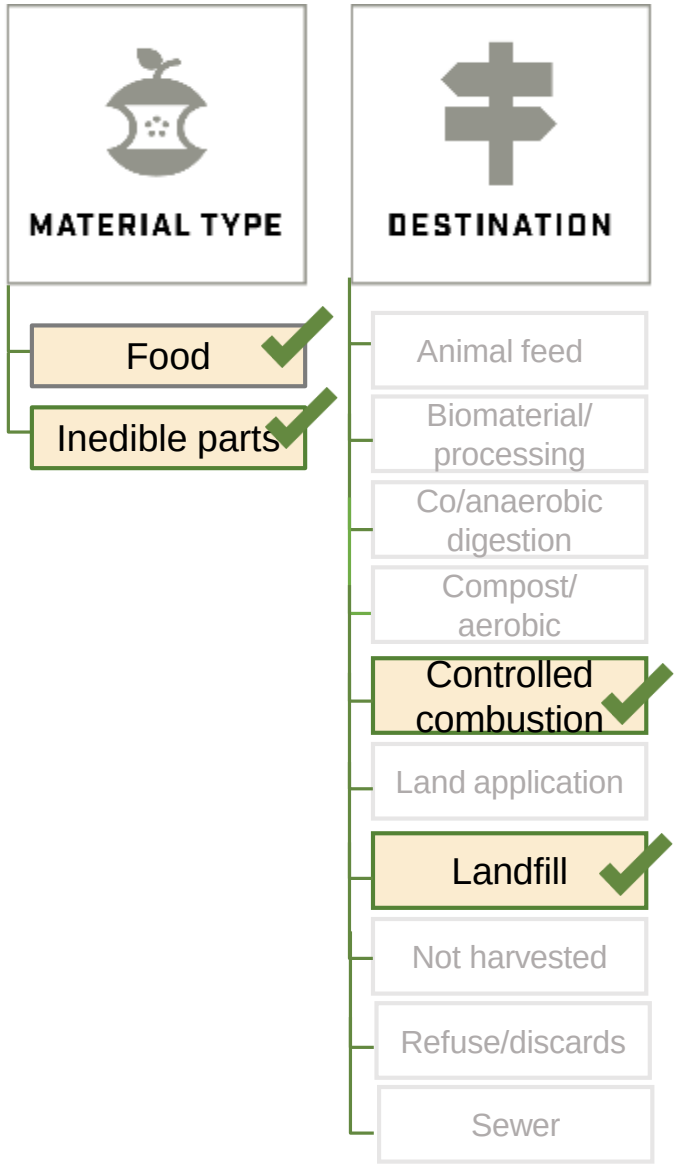
Goals -> drive definitions

USDA: 66.5 million tons



VERSUS

US EPA: 36.46 million tons *disposed*



Helpful hints about measuring

1. You don't need a super accurate number to get started
2. Measurement itself is an act of prevention
3. Think beyond “landfill avoidance”

Basic steps for collecting data

1. **Identify the main streams of possible FLW**
   - Where FLW is already separated from other material streams
     - e.g., FLW to animal feed
   - Where estimates may be needed to separate the FLW from other material streams
     - e.g., fraction of total material to compost that is FLW

2. **Gather and assess existing data**
   - *Sources may include*: storage records, waste collection receipts,
   - *Identify who has the data*
   - *Consider if existing data*
     - fits your scope and is reliable, and
     - could be extrapolated for other sites (if needed)

3. **Where data does not exist, determine how to calculate the amount of FLW** (i.e., measure, approximate, or infer by calculation)

Download at: www.cec.org/Measurement

Seven Modules for Food Loss and Waste Measurement

- Why Measure FLW?
- The Business Case for FLW Reduction
- Managing Change
- Setting Your Scope
- Determining Root Causes
- Selecting KPIs and Identifying Impacts
- Sector-Specific Guidance

Sector-Specific Guidance

- The guide gives suggestons on how to measure FLW for each of the following sectors:
  - Primary production
  - Processing and manufacturing
  - Distribution
  - Retail
  - Food service/institutions
  - Households
  - Whole Supply Chain Approaches

Processing and Manufacturing

Method Name	Direct FLW Access Needed?	Level of Accuracy?	Level of Resources Required?	Tracks Causes?	Tracks Progress over Time?
Methods for gathering new data					
Direct Measurement	Yes	High	High	Yes	Yes
Interviews/Surveys	Yes	High	High	No	Yes
Methods based on existing data					
Proxy Data	No	Medium	Low	No	Yes
Records	No	Variable*	Low	No	Yes
Less commonly used methods at the processing and manufacturing sector					
Diaries	No	Low-Medium	Medium	Yes	Yes
Mass Balance	No	Low-Medium	Medium-High	Yes	Yes
Waste Composition Analysis	No	Low	Low	No	No

*Accuracy depends on the type of record used: for example, waste transfer receipts may be highly accurate for determining FLW levels, whereas other records are less accurate

Supplement to the *FLW Accounting and Reporting Standard*

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 the 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.

Created by Quantis as part of WBCSD's FReSH program and with input from World Resources Institute

Guidance and Tools for Using the FLW Standard Online

Why use the Calculator and why is it unique?

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

Caveat: Results are based on a set of assumptions that may differ from your situation, and the calculator results have not been peer reviewed. This must be taken into account in any communication or decision making.

Decision guidance

- Prioritising and screening for questions related to:
  - multiple regions
  - multiple food types
  - different destinations
  - life cycle stages
  - environmental impacts (GHG, land, water, nutrients)
  - nutrition

Scope problem: packaging example
(a quick assessment)

- A retailer finds different food waste rates associated with different packaging designs. They estimate they are losing 10% of the following items:
  - lettuce
  - potatoes
  - beef
- Assuming alterations to packaging would reduce losses, and not drastically increase impacts of the packaging: for which products should they prioritise packaging design improvements in order to minimize the associated greenhouse gas impacts?

Gather data: packaging example
(a quick assessment)

- 10% of lettuce * 10 tonne per day stocked
  = 1 tonnes lost
- 10% of potatoes * 10 tonne per day stocked
  = 1 tonnes lost
- 10% of beef * 1 tonne per day stocked
  = 0.1 tonnes lost

Select up to three combinations of food and region of agricultural production (if known). Enter the lost or wasted amount in tonnes (1000 kg). Note that regional proxies are used (e.g. France for Europe) as indicated, however, most regions have a proxy available.

	Food	Region	Enter the amount		Food	Region	Enter the amount		Food	Region	Enter the amount	
1	lettuce	unknown	1	tonnes	2 potato	unknown	1	tonnes	3 beef	unknown	0.1	tonnes
	Regional proxy:	Global			Regional proxy:	Global			Regional proxy:	Global		

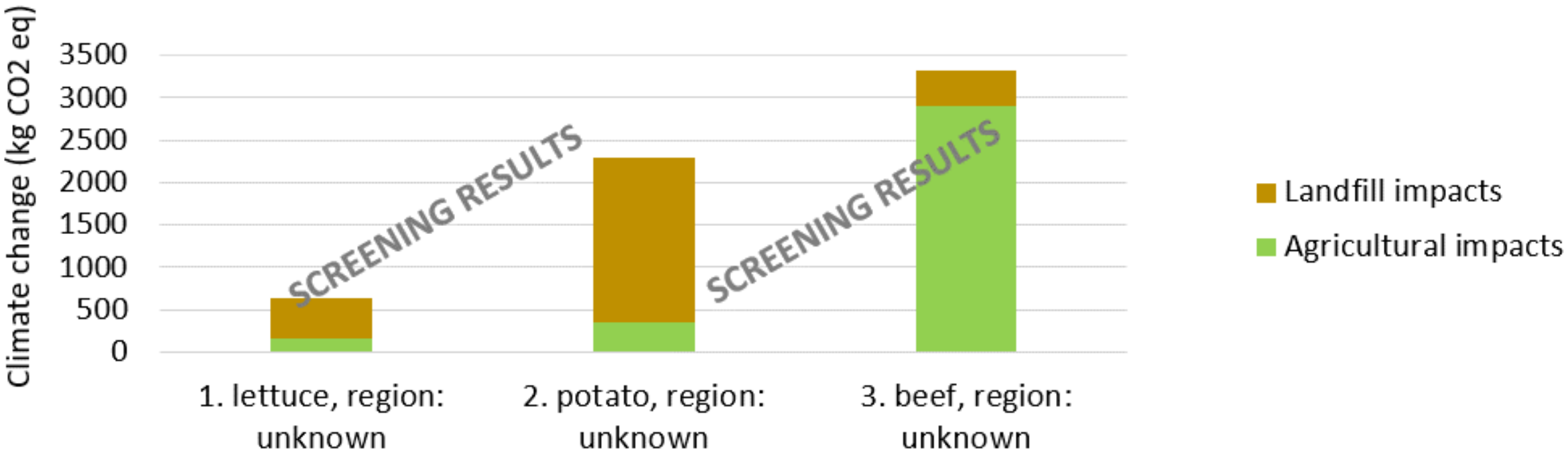
2 Results: environmental impacts (landfill used as default option, and only influences carbon footprint)

	1. lettuce, region: unknown			2. potato, region: unknown			3. beef, region: unknown		
	Agricultural impacts	Landfill impacts	Total	Agricultural impacts	Landfill impacts	Total	Agricultural impacts	Landfill impacts	Total
Climate change (kg CO2 eq	160.32	469.37	629.69	352.90	1,940.13	2,293.02	2,900.33	427.30	3,327.63
Water scarcity footprint (m	437.65	-	437.65	3,054.42	-	3,054.42	1,079.01	-	1,079.01
Land use (Points)	12,341.76	-	12,341.76	3,777,226.20	-	3,777,226.20	254,122.03	-	254,122.03
Eutrophication (kg P eq)	0.03	-	0.03	1.84	-	1.84	2.08	-	2.08
Eutrophication (kg N eq)	1.34	-	1.34	34.63	-	34.63	9.53	-	9.53

0.1 Introduction | 0.2 FAQs | A1. Quick assessment & results | B1. Detailed assessment | B2. Res ...

Calculate!

- Beef has 10x less waste, but highest impact.
- Between potatoes and lettuce, potatoes should be prioritized (if the assumption about landfill with no methane gas capture as the destination is correct)



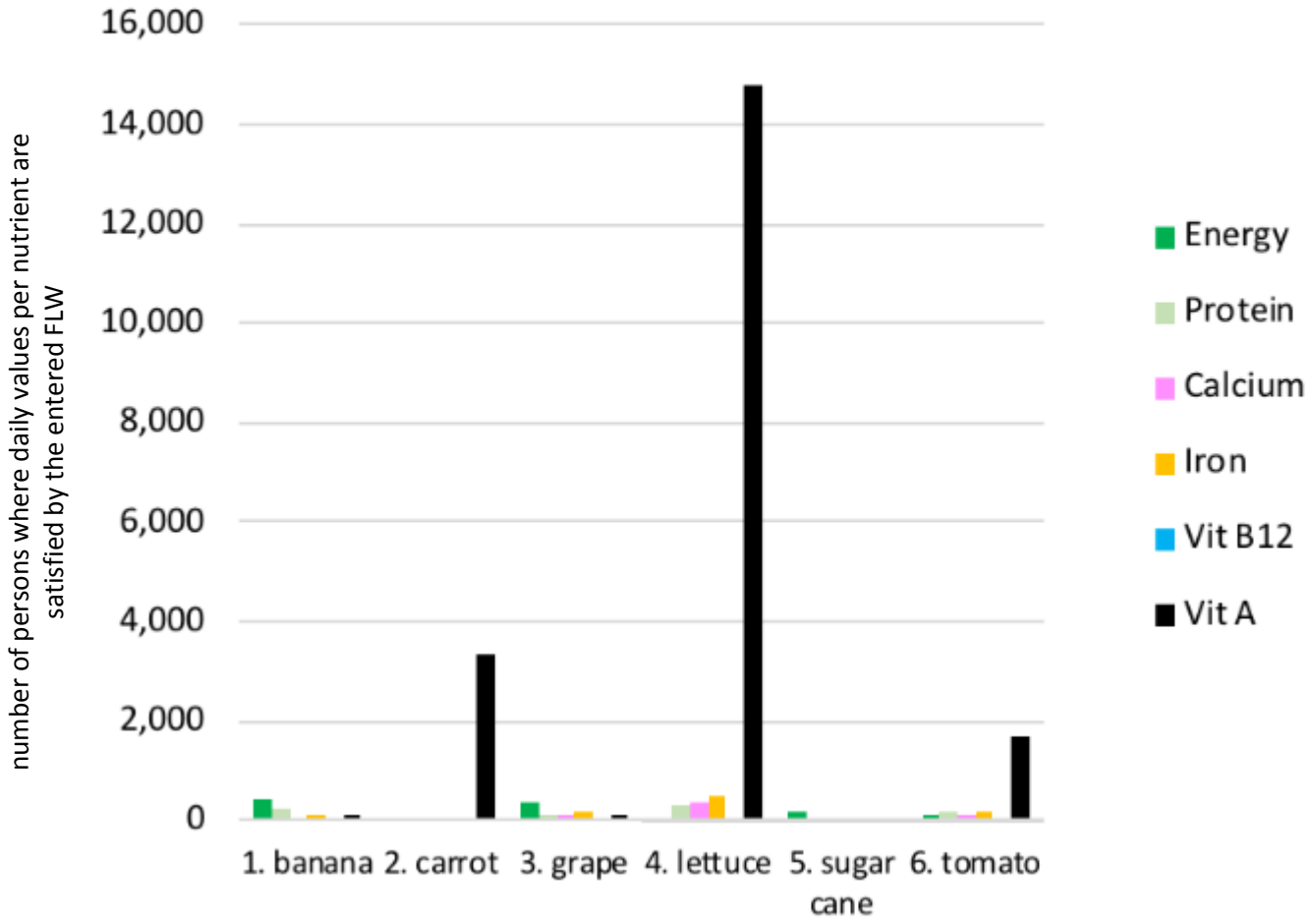
Gather data

- An NGO in India has obtained regional food loss data, which you use for your study.
- FLW data (hypothetical):
  - Banana→1 tonne per day
  - Carrot→0.1 tonne per day
  - Grape→1 tonne per day
  - Lettuce →1 tonne per day
  - Sugar cane→0.1 tonne per day
  - Tomato →1 tonne per day
- You are told losses are preventable and could satisfy market needs

Understand and visualise priorities

Banana→1 tonne per day
Carrot→0.1 tonne per day
Grape→1 tonne per day
Lettuce →1 tonne per day
Sugar cane→0.1 tonne per day
Tomato →1 tonne per day

Figure 5. Summary of key nutrients (number of US FDA daily values per nutrient that could have been fufilled by the report FLW)



Recommendations

- Target
  - Adopt an APEC-wide target
  - SDG 12.3 is most common target
- Measure
  - Measure in each APEC member economy using a common scope
- Act
  - Tailor actions within the region to the hotspots identified by the measurement process


QUESTIONS
ANSWERS