Diary methodology

Recommended method: diaries

- **Asking people to log how much they wasted, and why**

- **Degree of information gathered and level of standardisation can vary**
  - E.g. asking if edible/inedible, cooked/uncooked, type of food and so on

- **Need to be mindful of data entry burden**

Example from:
https://www.cumbria.gov.uk/eLibrary/Content/Internet//538/6976/17173/42781133240.pdf

Day 1:

LOVE FOOD hate waste .com

BREAKFAST : What food did you throw away from breakfast?

What?	How Much?	Where?	Why?
eg: cereal	¼ bowl	council food waste collection	served too much

If table is left blank state why: No food waste: ☐ Meal eaten out: ☐ Meal skipped: ☐
Other: _____

Lunch : What food did you throw away from Lunch?

What?	How Much?	Where?	Why?
eg: sandwich	½	kitchen bin at work	didn't have time to eat

If table is left blank state why: No food waste: ☐ Meal eaten out: ☐ Meal skipped: ☐
Other: _____

Underestimation

Behavioural reactivity: Households waste less during the diary period

- Explicitly ask households not to do anything differently

- Make it clear that they are not being judged

Misreporting: Not all food waste recorded in diary

- Ask participants to involve all members of their household

- Design diary to maximise interaction (e.g., physical diary)

- Reminders

Measurement bias: Amounts recorded inaccurate

- Provide quick yet accurate measurement method, e.g., measuring jug for sewer waste

Self-selection bias: Those completing diary not being representative of population

- Consider ways of maximising participation of those approached, e.g.,:
  - reducing participant burden
  - well-designed 'first contact'
  - incentives

Misunderstanding system boundaries: Participants have different view of what should be measured

- Provide clear guidance of what should be included and excluded from diary
- Set clear definitions of terms, e.g. 'edible'

From: Comparing diaries and waste compositional analysis for measuring food waste in the home, https://doi.org/10.1016/j.jclepro.2020.121263

Diaries – Recommendations

- **Sample size:**
  - For a week-long diary, 300 households sufficient
  - Larger sample size for shorter diary period
- **Sample should reflect the population**
- **Undertake sampling at least two points during the year**
- **Approximate cost: $100-$300 per household**
- **Additional benefits of diaries**
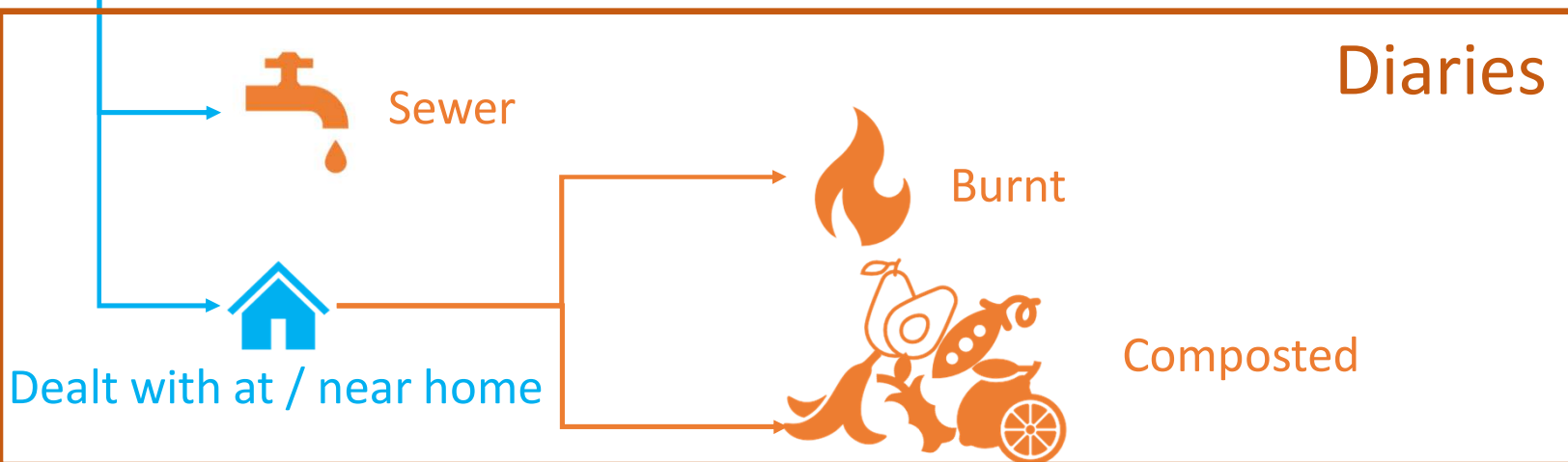- **Needed less frequently than waste comp. data for tracking – c. every six years (?)**

Destinations of household food waste
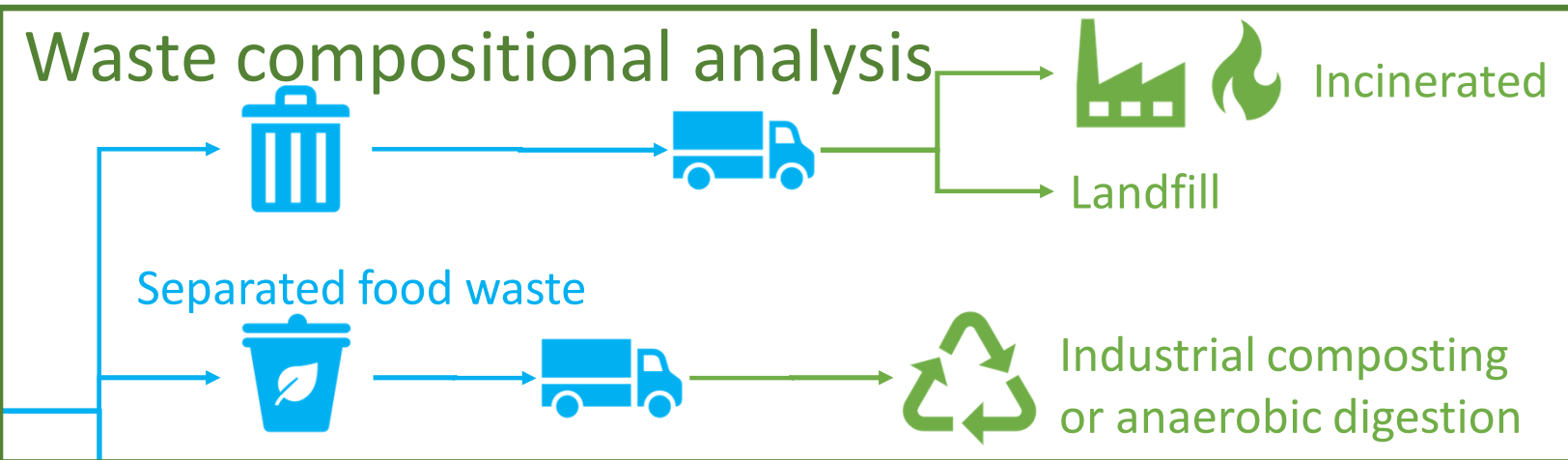
Is a diary methodology used for any food-related research in your country?

Diaries, causes and drivers of waste

Why is food wasted?

- **Not necessary for Food Waste Index reporting**

- **Very useful for planning strategies and interventions to reduce food waste**

- **First two things to capture:**
  - **Demographic determinants** – *e.g. household type, age, income, region etc.*
  - **Reasons for disposal (*causes*)** – *e.g. past use-by-date, cosmetic damage, spoilage, preferences etc.*
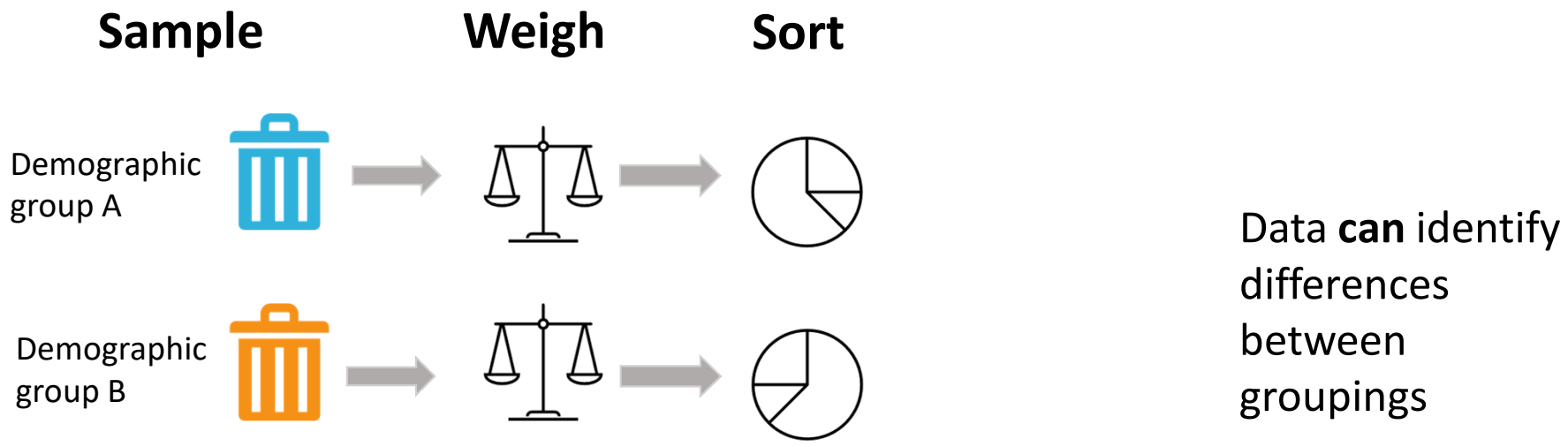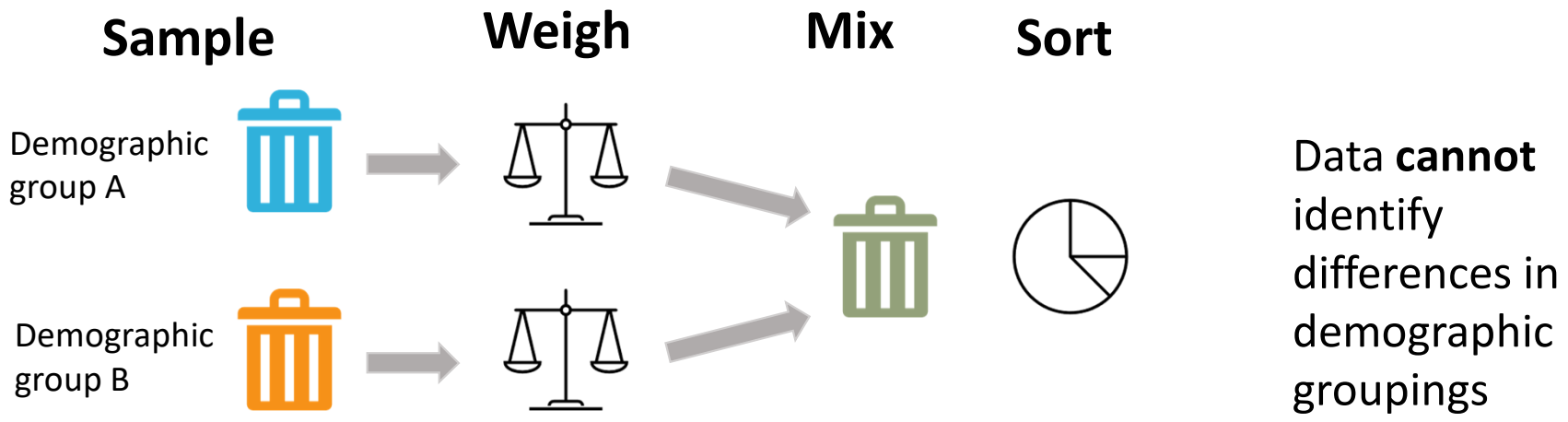
Demographic determinants

- **Do certain households or population groups waste food at different rates from others?**
  - *Is there more or less among different groupings?*
- **Do certain households or population groups waste different foods from others?**
  - *Is the composition of waste different? More which is edible/inedible, more of specific categories of food?*

Demographic determinants

- **Can be measured through our waste composition analysis**
    - Capture basic demographic data in short survey when getting household consent & planning sample
    - Ensure composition is done at smaller groupings *before* waste is mixed
    - To track differences between groups, sample sizes would need to increase: somewhere between 1,000 – 2,000 households would likely see major differences in household types

Sample   **Weigh**   **Mix**   **Sort**

Demographic group A

Demographic group B

Data **cannot** identify differences in demographic groupings

Sample   **Weigh**   **Sort**

Demographic group A

Demographic group B

Data **can** identify differences between groupings

Reasons for disposal

- **Causes** are the **immediate reason** for disposal (e.g. food is mouldy)
- **Drivers** are the **longer-term reason** for the cause emerging (e.g. food not stored properly)

- **What causes can you think of?**

Reasons for disposal

• Broadly, 5 main cause groups:

Cause group
Not used in time
Cooked/prepared/served too much
Classified inedible part
Personal preference
Accidents/Other

Reasons for disposal

Cause group	Examples / possible sub-groups	Possible drivers
Not used in time	Food is mouldy/stale/no longer judged edible	Purchased too much; poor inventory management; Inadequate storage; lack of infrastructure (refrigeration);
	Food is past its 'use-by', 'sell-by' or 'best-before' date (or equivalent)	Purchased too much; poor inventory management; confusion over date labels or over-reliance on them
Cooked/prepared /served too much	Cooked/prepared too much (food not served)	Cultural norms or expectations – presentation of abundance; portion control; packaging portions too large
	Served too much (food left on plate/in bowl/in cup)	Cultural norms around leftovers; portion control
Classified inedible part	Researchers/survey classifies a part as inedible	
Personal preference	Household considers a part inedible or undesirable	Lack of cooking skills/creativity; lack of knowledge; fussy eating/preferences
	Prepared meal rejected: tasted bad or below expectations	Poor cooking skills; errors/accidents made; fussy eating
Accidents/Other	Burnt	Food as secondary concern; lack of infrastructure (cooking over charcoal, harder to control heat)
	Dropped / spilled	Lifestyle stresses, food as secondary concern
	Other	*Responses which may not fit in other categories*

Reasons for disposal

- Identify the **causes** for disposal
- Infer **behaviours** related to the **drivers**
- Use these to design **interventions**

| Cause group	Examples / possible sub-groups	Possible drivers
Not used in time	Food is mouldy/stale/no longer judged edible	**Purchased too much; poor inventory management; Inadequate storage**; lack of infrastructure (refrigeration);
	Food is past its 'use-by', 'sell-by' or 'best-before' date (or equivalent)	**Purchased too much; poor inventory management**; confusion over date labels or over-reliance on them

Reasons for disposal

Possible drivers
Purchased too much; poor inventory management; Inadequate storage; lack of infrastructure (refrigeration);
Purchased too much; poor inventory management; confusion over date labels or over-reliance on them

Behavioural outcomes	Behaviour examples
Buy the right amount	Plan your meals
	Check what you already have in storage (fridge, cupboard etc.)
Correct storage	Refrigerate food at correct temperature
	Store products in appropriate place
Eat what you have bought (inventory management)	Eat or freeze ahead of 'use by' date
	Eat past 'best before' date
	East leftovers
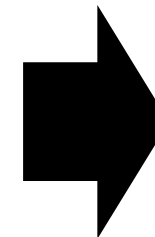
Food waste prevention

Reasons for disposal

- **How to measure?**
  - 1) Food waste diary
    - Participants fill out reason when they record food waste disposal
    - Group / categorise these into causes
    - Can be combined with quantification
  - 2) Survey
    - Ask people why they most recently wasted food
    - Likely to have challenges with memory and self-perception
    - *Should not be used to quantify amount of food wasted*
  - 3) Ethnography, interviews & in-home research
    - Qualitative research helps understand complex issues including emotions, behaviours and contexts
    - Does not develop quantitative understanding of causes