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:
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’

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

Waste compositional analysis

- Incinerated
- Landfill
- Industrial composting or anaerobic digestion

Separated food waste

- Diaries
- Sewer
- Dealt with at / near home

Burnt
Composted
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
Data cannot identify differences in demographic groupings.

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:

<table>
<thead>
<tr>
<th>Cause group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not used in time</td>
</tr>
<tr>
<td>Cooked/prepared/served too much</td>
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<tr>
<td>Classified inedible part</td>
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<tr>
<td>Personal preference</td>
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<td>Accidents/Other</td>
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## Reasons for disposal

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

- **Reasons for disposal**: The chart categorizes reasons for food disposal into various groups and provides examples and possible causes.
## Reasons for disposal

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

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## 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 vs. Behaviour examples

<table>
<thead>
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<th>Behaviour examples</th>
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<tr>
<td>Buy the right amount</td>
<td>Plan your meals</td>
</tr>
<tr>
<td></td>
<td>Check what you already have in storage (fridge, cupboard etc.)</td>
</tr>
<tr>
<td>Correct storage</td>
<td>Refrigerate food at correct temperature</td>
</tr>
<tr>
<td></td>
<td>Store products in appropriate place</td>
</tr>
<tr>
<td>Eat what you have bought (inventory management)</td>
<td>Eat or freeze ahead of ‘use by’ date</td>
</tr>
<tr>
<td></td>
<td>Eat past ‘best before’ date</td>
</tr>
<tr>
<td></td>
<td>Eat leftovers</td>
</tr>
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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