SDG 12.3 and the Food Waste Index
International Workshop on Food Loss and Waste Prevention
South East and East Asia
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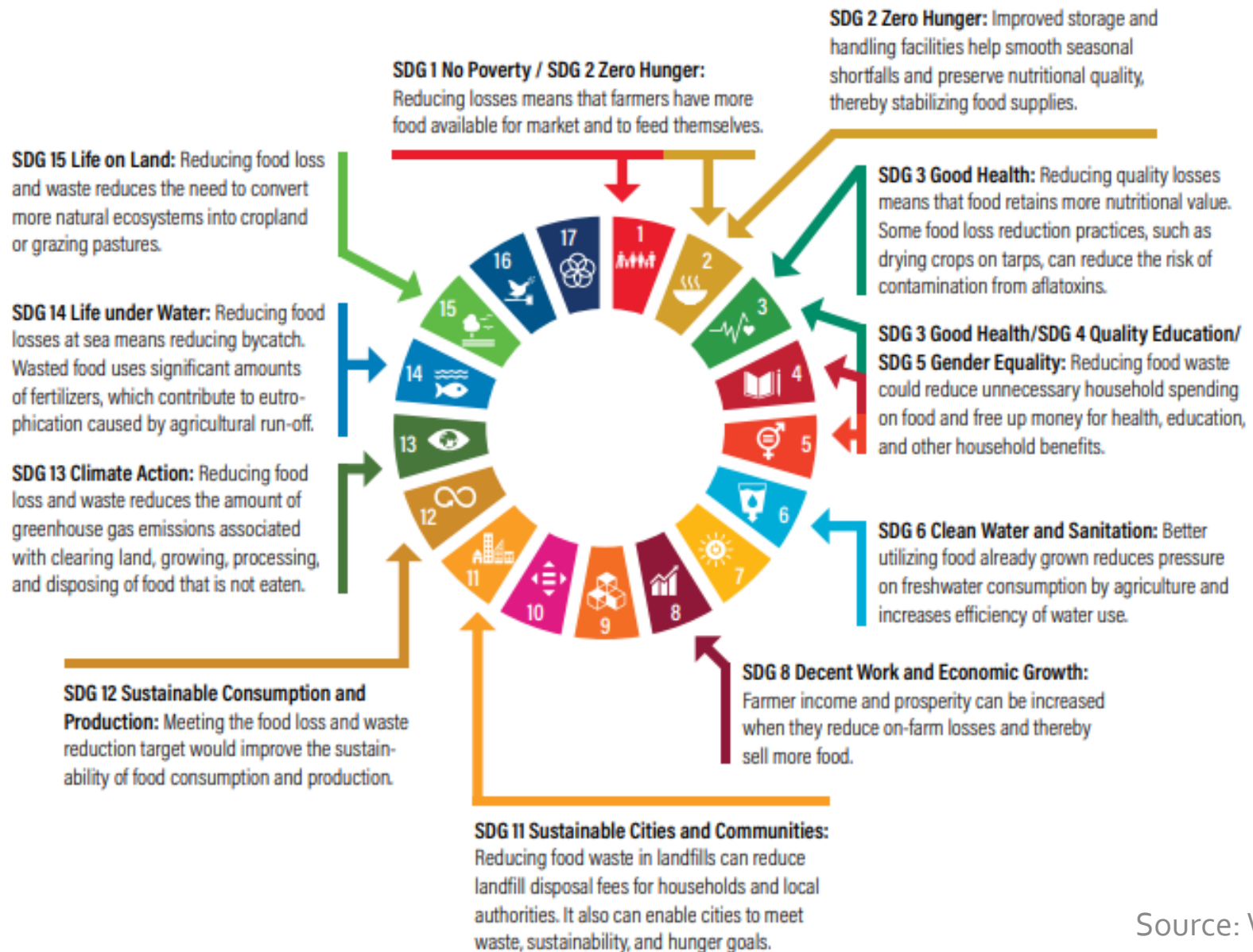Programme Officer, Sustainable Food Systems
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FOOD LOSS & WASTE

- One third of food produced for human consumption
- 1.3 billion tonnes per year
- Valued at USD 990 billion
- While 821 million people are undernourished

Producing food that is lost/wasted requires: water, land, energy, labor and capital, uses inputs such as fertilizers and pesticides, and generates **8% of global greenhouse gas emissions.**

Curbing food loss and waste can help deliver multiple SDGs…

SDG 1 No Poverty / SDG 2 Zero Hunger: Reducing losses means that farmers have more food available for market and to feed themselves.

SDG 2 Zero Hunger: Improved storage and handling facilities help smooth seasonal shortfalls and preserve nutritional quality, thereby stabilizing food supplies.

SDG 15 Life on Land: Reducing food loss and waste reduces the need to convert more natural ecosystems into cropland or grazing pastures.

SDG 14 Life under Water: Reducing food losses at sea means reducing bycatch. Wasted food uses significant amounts of fertilizers, which contribute to eutrophication caused by agricultural run-off.

SDG 13 Climate Action: Reducing food loss and waste reduces the amount of greenhouse gas emissions associated with clearing land, growing, processing, and disposing of food that is not eaten.

SDG 3 Good Health: Reducing quality losses means that food retains more nutritional value. Some food loss reduction practices, such as drying crops on tarps, can reduce the risk of contamination from aflatoxins.

SDG 3 Good Health/SDG 4 Quality Education/ SDG 5 Gender Equality: Reducing food waste could reduce unnecessary household spending on food and free up money for health, education, and other household benefits.

SDG 6 Clean Water and Sanitation: Better utilizing food already grown reduces pressure on freshwater consumption by agriculture and increases efficiency of water use.

SDG 8 Decent Work and Economic Growth: Farmer income and prosperity can be increased when they reduce on-farm losses and thereby sell more food.

SDG 12 Sustainable Consumption and Production: Meeting the food loss and waste reduction target would improve the sustainability of food consumption and production.

SDG 11 Sustainable Cities and Communities: Reducing food waste in landfills can reduce landfill disposal fees for households and local authorities. It also can enable cities to meet waste, sustainability, and hunger goals.

Source: WRI, 2019

...Helps close the Food Gap to 2050 without expanding cultivated area

Note: Includes all crops intended for direct human consumption, animal feed, industrial uses, seeds, and biofuels.
Source: Searchinger et al. (2018).

Source: WRI, 2019

…And raise ambition in the 2020 NDC revision

Article 4.2 "**Each Party** shall **prepare, communicate and maintain successive nationally determined contributions** that it intends to achieve. Parties shall **pursue domestic mitigation measures**, with the aim of achieving the objectives of such contributions."

How to deliver SDG 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.

- Adopt a target consistent with SDG Target 12.3

- Measure and publicly report on food loss and waste

- Take action: develop a national strategy on food loss and waste, adopt policies, incentives, investment and practices to deliver reductions

CHAMPIONS 12.3

Tracking Progress on SDG 12.3

Custodians of 12.3 indicators: FAO & UNEP

Food Loss Index- focus on supply

"By 2030, …

12.3

12.3.1 **Food Loss**

"…reduce food losses along production and supply chains, including post-harvest losses."

12.3.2 **Food Waste**

Food Waste Index- focus on demand

"…halve per capita global food waste at the retail and consumer levels."

Overview of FLW methodology

- Quantification and measurement of food loss and waste (FLW) is a **developing field**.

- An international ***Food Loss and Waste Accounting and Reporting Standard* (FLWS)** was published (Hanson et al. 2016) that provides consistency and transparency in accounting for and reporting on data using a common set of requirements

- Any methodologies for the indicators of SDG 12.3 should be **practical for countries to implement and be feasible in terms of data collection**.

- Methodologies **should allow the UN to compare data** reported by different countries.

Operational Definition of Food Losses

Food losses are all the crop and livestock human-edible commodity quantities that, directly or indirectly, completely exit the post-harvest/slaughter production/supply chain by being discarded, incinerated or otherwise, and do not re-enter in any other utilization (such as animal feed, industrial use, etc.), up to, and excluding, the retail level.

Losses that occur during storage, transportation and processing, also of imported quantities, are therefore all included. Losses include the commodity as a whole with its non-edible parts.

Operational definition of food waste

The food and associated inedible parts removed from the human food supply chain at the following stages of the food chain:

- manufacturing of food products,
- food retail and wholesale,
- out-of-home consumption and
- in-home consumption.

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Interactions between SDG 12.3.1.a and 12.3.1.b
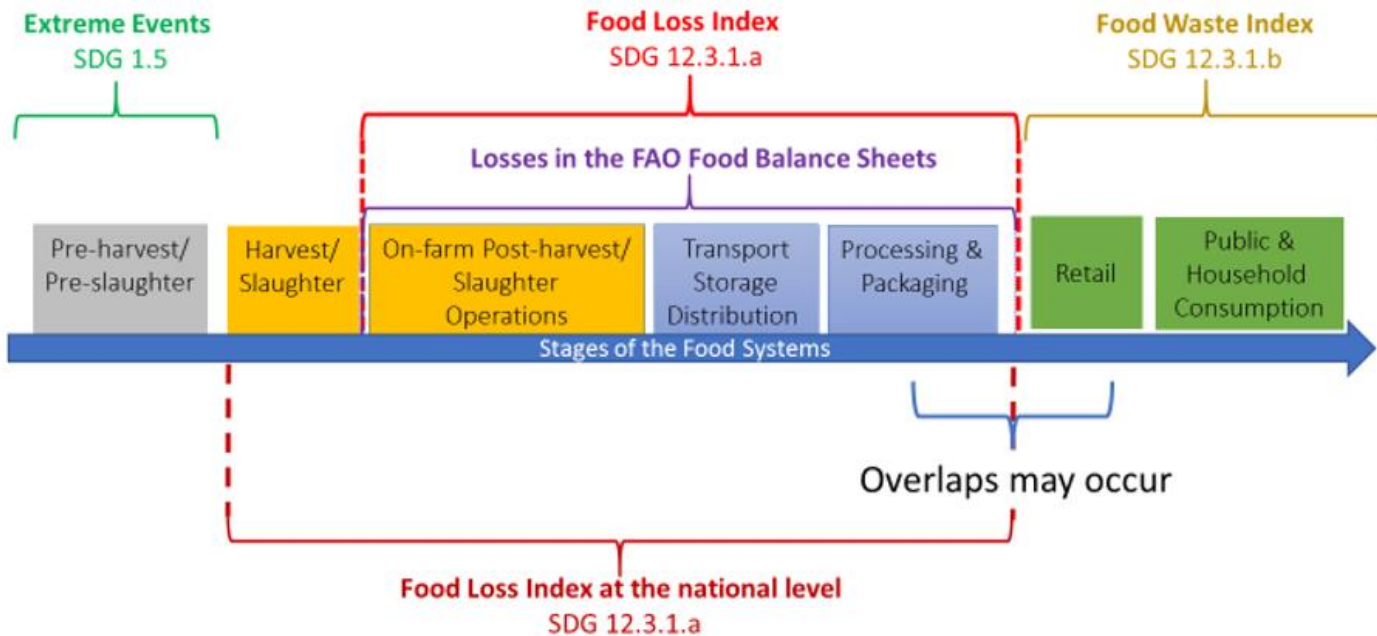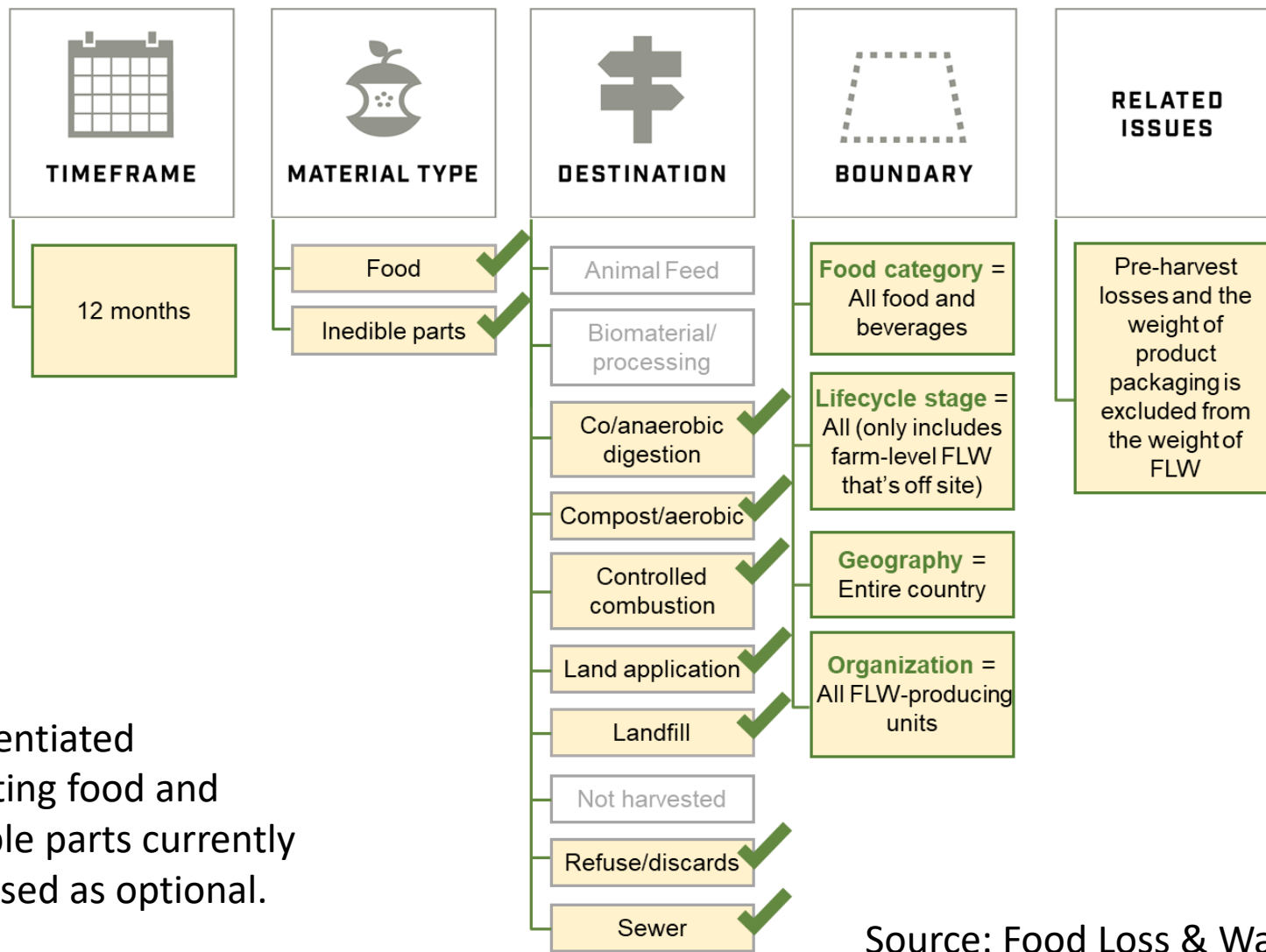
Practical overlap of SDG12.3.1.a and 12.3.1.b
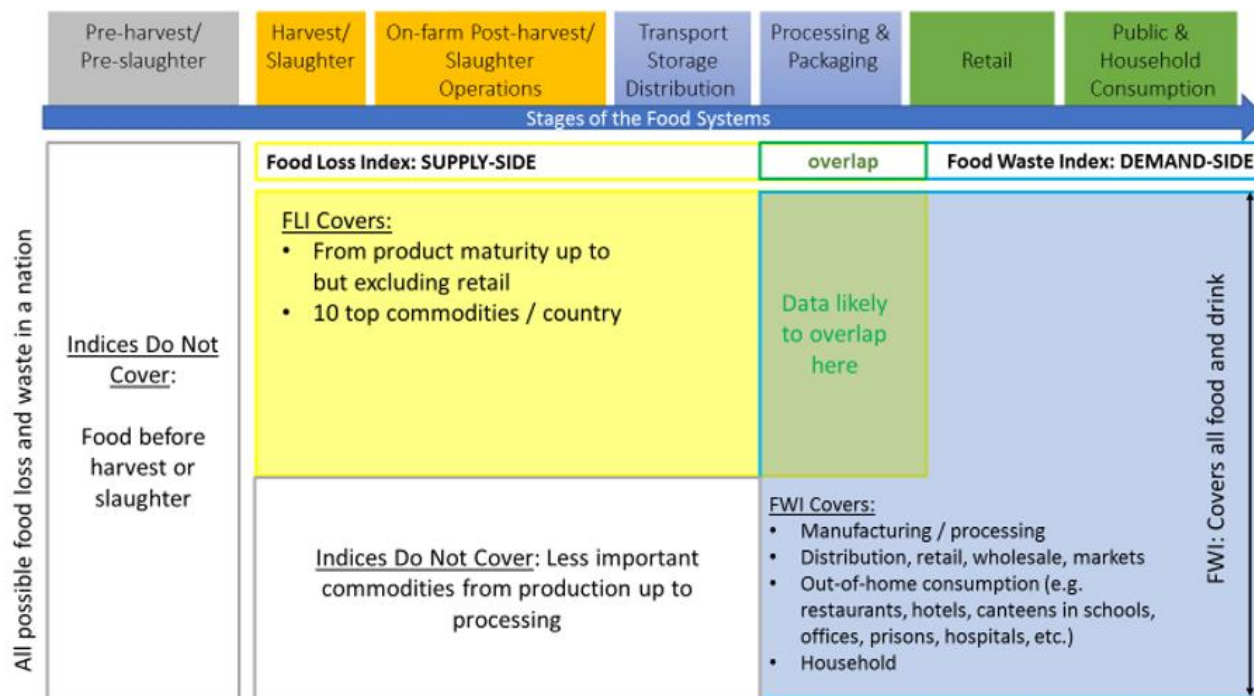
The opinion of international experts and government stakeholders is that **overlaps are better than gaps**

Scope

Lifecycle stage: retail and household
Potentially also manufacturing, food service, and out-of-home consumer

Differentiated reporting food and inedible parts currently proposed as optional.

Source: Food Loss & Waste Protocol

Food Waste Index: Three level approach

There needs to be a methodology of reporting that balances **quality of output** with **feasibility of implementation** in as many member countries of the UN as possible. The approach recommended for countries to monitor SDG 12.3.1.b is stepwise with three levels. Still a work in progress and feedback is welcomed.

Level 1: Estimate by calculation using World Bank 'What a Waste 2.0' Municipal Solid Waste data in tons per year and the 'food_organic' fraction of this. **Countries will be encouraged to separate 'food waste' rather than organic (food + green waste) when conducting regular waste composition analyses of MSW**, and report the food waste fraction of MSW as a first step in tracking progress on SDG 12.3.

Level 2: Basic study at a reduced scope and/or for a specific food chain stage (e.g. household) where a country cannot commit to a full programme of data collection. Uses accepted methodologies.

Level 3: Full national measurement at all relevant food chain stages, using accepted methodologies, for a comprehensive picture of food waste in a country.

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Recommended methodologies for Levels 2-3

Household

- Waste compositional analysis
- Direct measurement
- Diaries (for sewer and home composting)
- Mass balance (under certain conditions)

Retail

- Waste compositional analysis
- Direct measurement
- Counting / scanning
- Mass balance (under certain conditions)
- Interviews and surveys to collate data

Existing data at household level

11 countries worldwide identified with household food waste baselines and clearly published methodologies.

- Methods used:
  - 9 waste compositional analysis
  - 3 diaries (2 of which also use WCA)
  - 1 mass balance
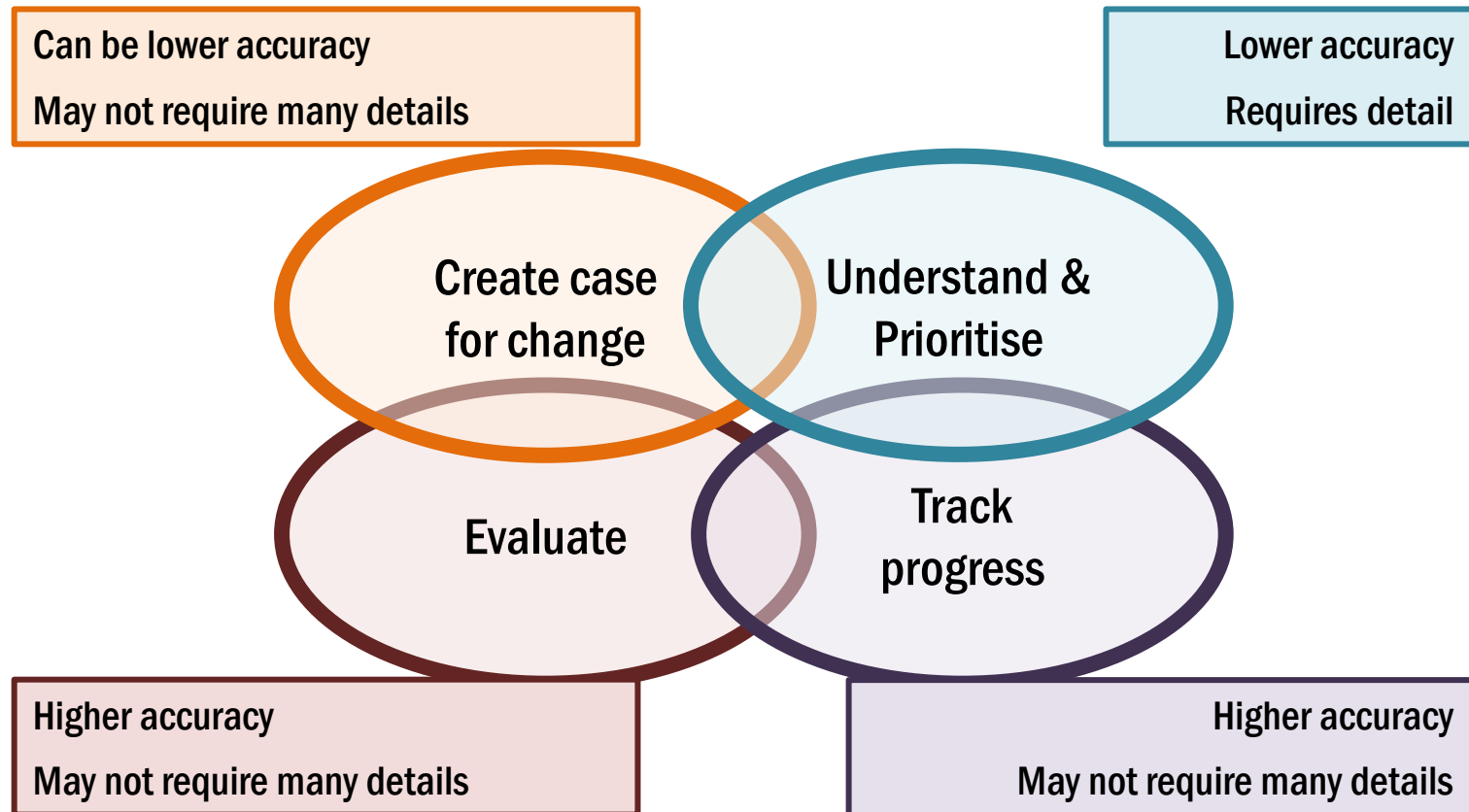- Further countries reporting, without the method being published / easy to obtain

Household: Diaries

- For waste going to sewer and home composting, diaries are the only viable method
- Where comparisons allow, diaries shown to underestimate food waste due to:
    - Changing behaviour
    - Incomplete recording
    - Selection biases
- **Diaries only recommended for sewer and home composting**

Household: Mass balance

- Should work in theory
  - Purchases – consumption = waste
- However, subtraction extenuates uncertainty
- Data for purchases and consumption not always accurate
  - Diaries, surveys and recall methods => underestimates
- Used by USA, but not for regular tracking
  - Data on purchases and consumption not updated regularly
- **Recommend included, but only if purchase and consumption data collected regularly and uncertainty estimated**

Data: different uses, different needs

Can be lower accuracy

May not require many details

Lower accuracy

Requires detail

Create case for change

Understand & Prioritise

Evaluate

Track progress

Higher accuracy

May not require many details

Higher accuracy

May not require many details

Based on section 2.1 of Technical Report on FW measurement, Commission for Environmental Cooperation

Data drives policy action

The approach will provide country estimates on food waste for the first time, bringing together the most recent available national data and new modelled estimates (the FAO 2011 study did not have a country level breakdown).

Per capita data makes countries easily comparable, and stimulates countries to conduct their own measurement, to improve their performance, or to demonstrate that our estimate is not accurate.

The approach follows the EU Preparatory Study on Food Waste published in 2010, which helped to trigger measurement in several EU Member States, created demand for additional research (delivered through the FUSIONS project), and culminated in the EU Delegated Decision requiring Member States to report food waste data by 2021.

Only 15 countries worldwide so far have Food Loss and Waste baselines

UNEP's new report with WRI, Food Loss and Waste: Setting a Global Action Agenda, identifies the following countries currently measuring food loss and waste at national level: Australia, Canada, Denmark, Estonia, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Saudi Arabia, Slovenia, Spain, the United Kingdom, and the United States.

| 2.5? | 1.7 | 0.3 | 0.9 | 7.3 |

>10 million tonnes per year

Sample baseline
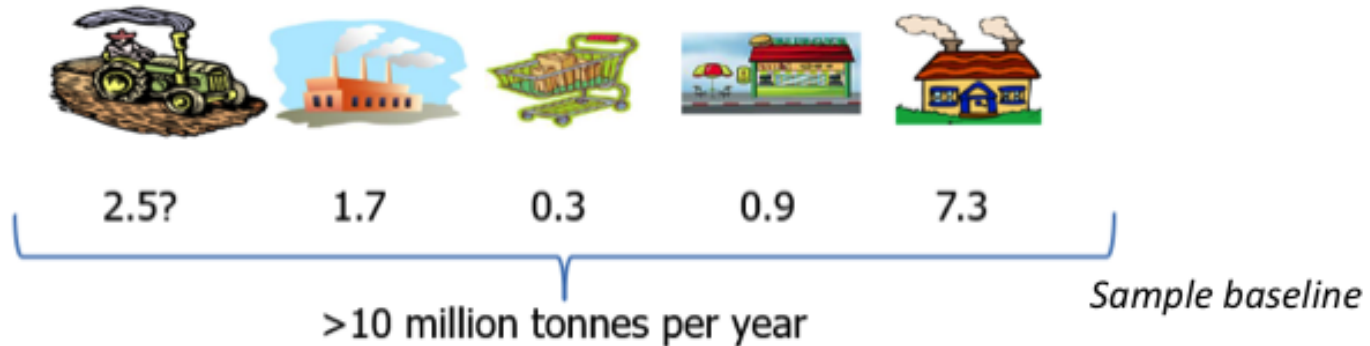
Please share your country's data with us if it is available.

And contact us if your country would like to develop its baseline and needs technical support.

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Thank you

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