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**Centre for  
Food Policy**

Shaping an effective food system

# Actions to support Food waste reductions in UK households

**Tackling Food Waste: Building a Comprehensive Strategy to Meet  
the Government's Commitment to Halve Food Waste by 2030,**

**Tuesday, 4th February 2025.**

Dr Christian Reynolds

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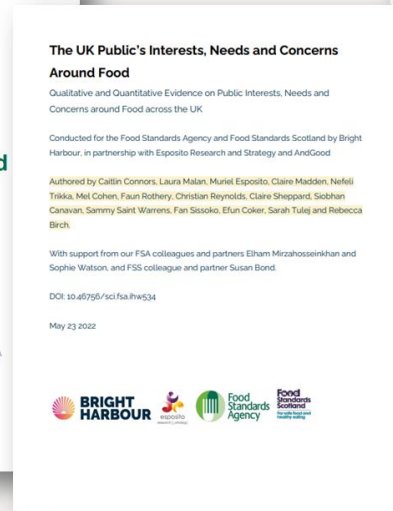
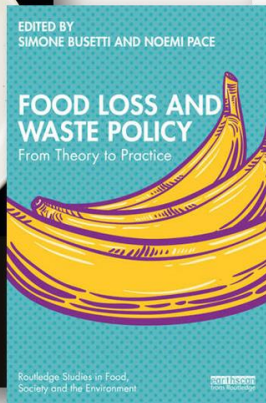
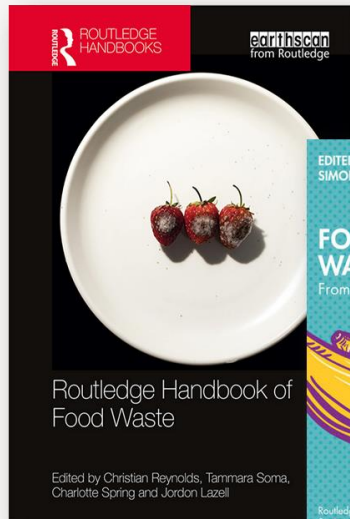
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Public Policy  
exchange

# Who am I?

## Reader at the Centre for Food Policy.

- Focus on sustainable food systems and food waste.
- Supporting the FSA/Defra through research projects. Scottish food systems research (ZWScotland). Household Simulation modelling (WRAP). Local food strategy development.
- Nutrition Society Food Systems theme lead. IFST Sustainability working group.
- Recent publications





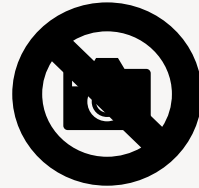
# Today is a work in progress and part of wider research on FLW.

- All input warmly received.  
(Feedback, questions, your thoughts.)
- Who should I be talking to?

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# 3 things I want to highlight

- 2024 Survey
  - *Changes in food habits and practices*
  - *Top foods wasted – GHGE vs calories*
- Household Simulation Model
  - *Food system interventions*
- Review of wider policy actions



# New UK wide survey (a first look) July to Nov 2024



- Intake 24 (a web-based 24-hour dietary recall system) Recruitment 6 July to 8 November 2024
- N=2381 completed a 1 day recall and data cleaning
- We asked each respondent to estimate Waste and leftovers per meal event.
- Used similar wording to WRAP

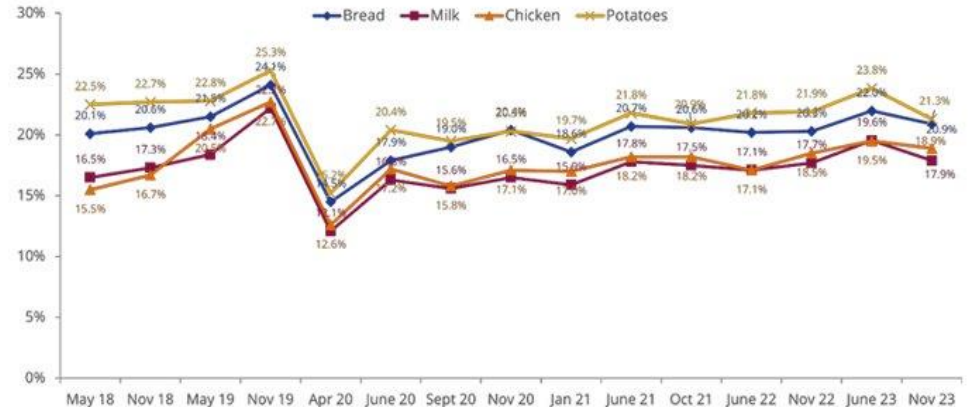


- Our findings Waste Levels:  
On average, ~7% of food prepared was wasted.

- If a food was wasted, the average amount wasted was 34%!
- 16% of people only reported wasting food at 1 meal, 18% wasted at 2-3 meals

Q. Thinking about the last time you bought the following foods, approximately what percentage of the amount you purchased ended up being uneaten and thrown away (whether to a compost bin, ordinary bin, council food waste collection, or down the sink)? The graph shows the percentage of each item uneaten and thrown away on the last occasion.

Base: UK adults with any responsibility for food shopping and / or preparation in the home and purchase any of the key products.

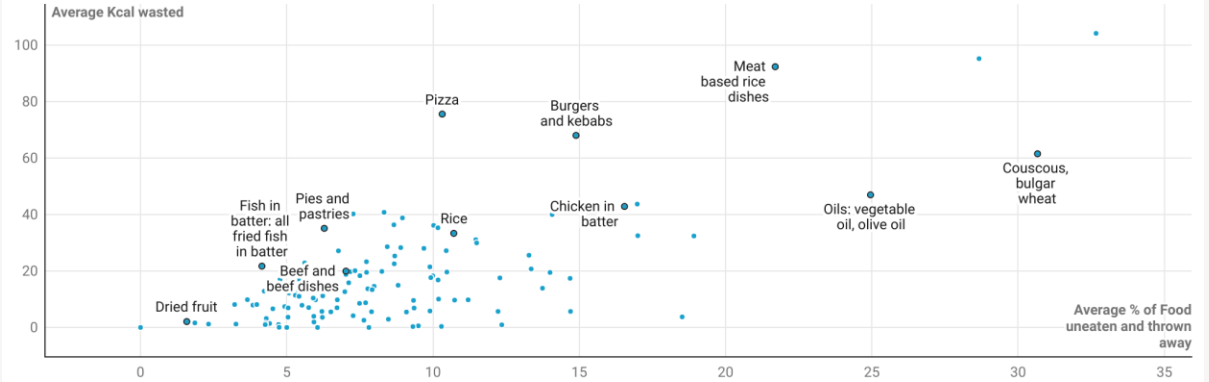


# Calories wasted vs GHGE wasted (per meal event)

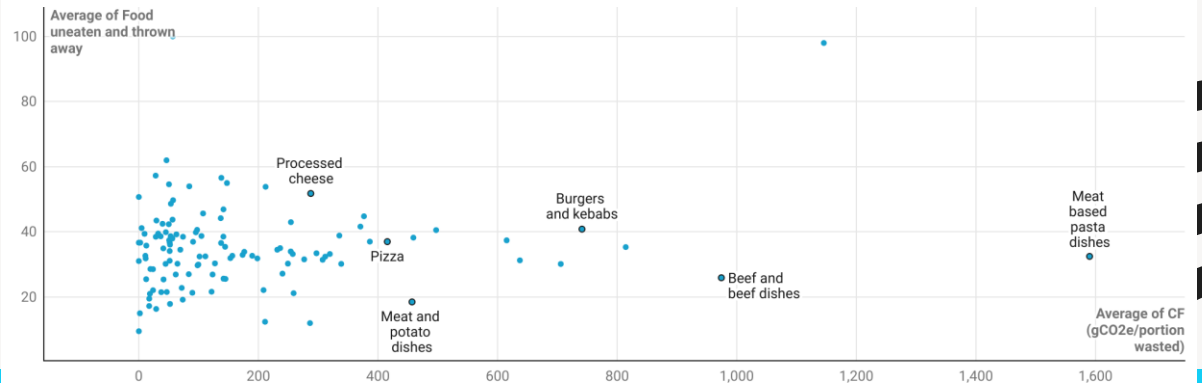


- Summarising our data to different 150 food categories
- Identify the high calorie and high GHGE foods and meals
- Bespoke solutions can be developed.

% of food waste by Average Kcal wasted per portion

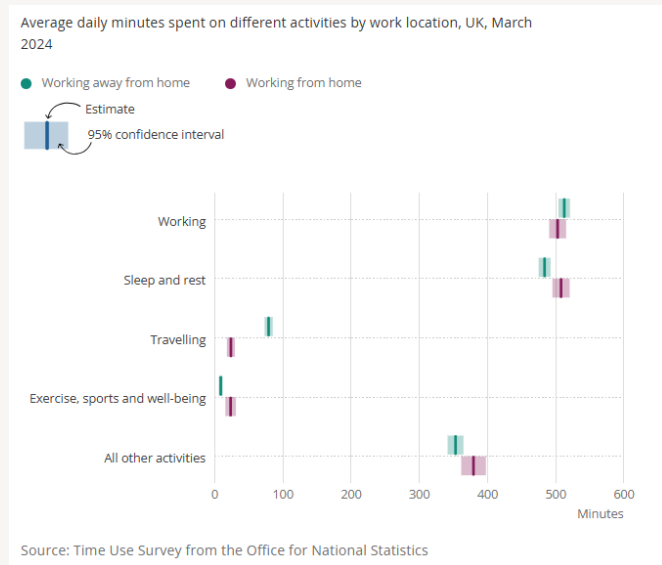
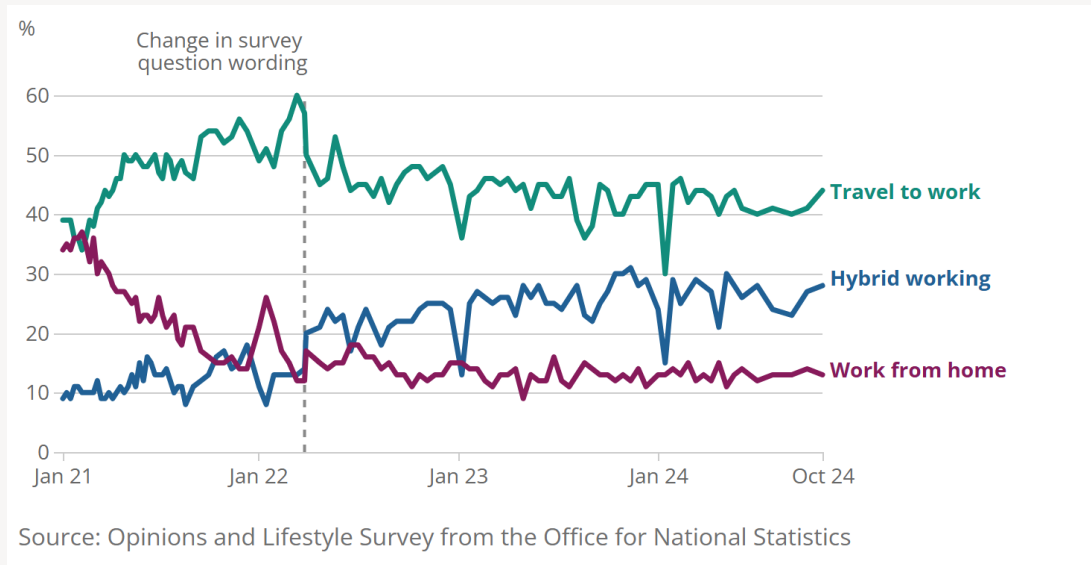


Average % Food waste per Average Carbon Footprint (gCO2e) portion wasted



# The rise of Hybrid working – is this having an impact on food consumption and waste?

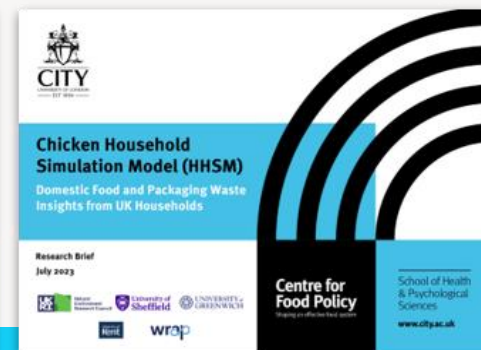
> Only 16-35% of our employed respondents had lunch at home Monday to Friday!



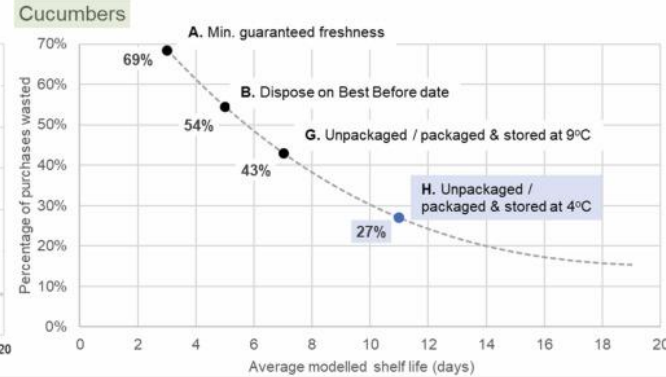
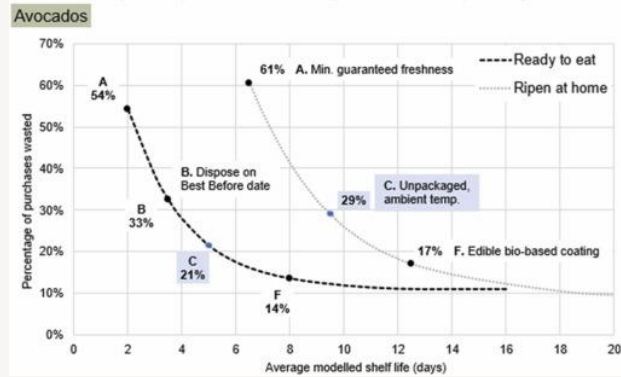
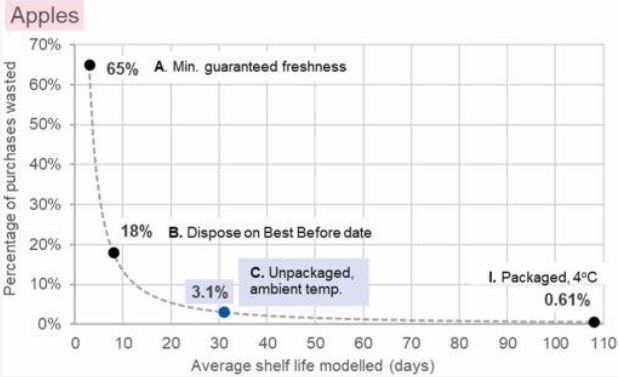
# The Household Simulation Model (HHSM)

The **Household Simulation model** estimates the effects of various interventions on food and plastic waste levels for a given food product.

It is intended to support decision-makers, by **quantifying potential trade-offs between food and plastic waste**, or estimating the impact of policy interventions e.g. changing pack-size packaging type, or household portioning behaviour

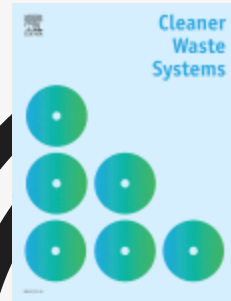


# New results on fresh produce → food systems actions to reduce HH food waste



## Three main actions:

- Removing best-before dates,
- Refrigerate most of their fruit and veg at home (at the correct temp)
- Selling fruit and vegetables loose
- Ready-to-eat avocados: increasing the shelf life from 3.5 days to 5 days reduced the estimated waste by more than a third





# Review of wider policy actions

# 2019 - Review: Consumption-stage food waste reduction interventions

- 17 applied interventions that claim to have achieved food waste reductions.
- 13 quantified food waste reductions.
  - Plate size interventions resulted in up to **57%** food waste reduction.
  - Changing nutritional guidelines in schools reduced vegetable waste by up to **28%**.
  - Information campaigns had up to **28%** food waste reduction.
- Lots of gaps and missing data.



# Welsh FW Route map 13 actions

Figure 4: Estimated savings in 2030 by intervention

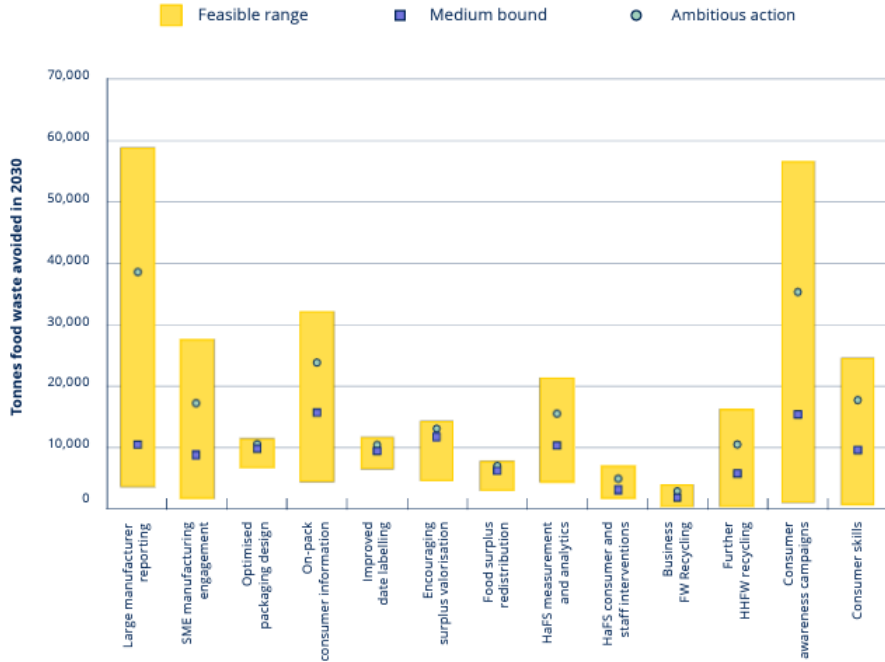
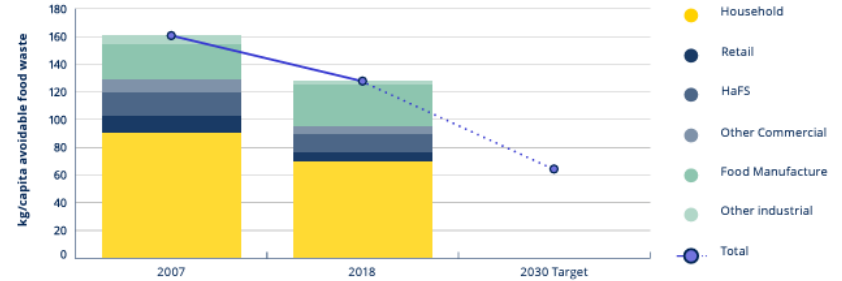
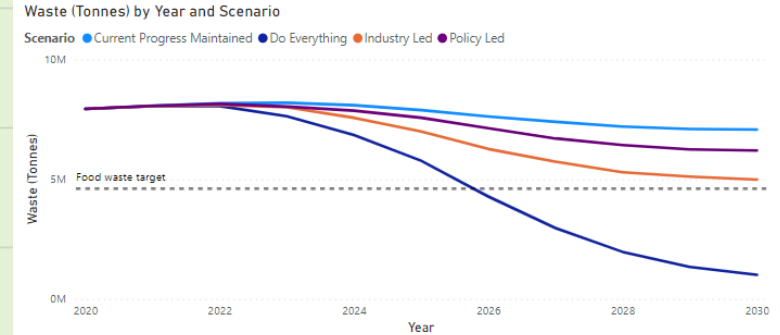
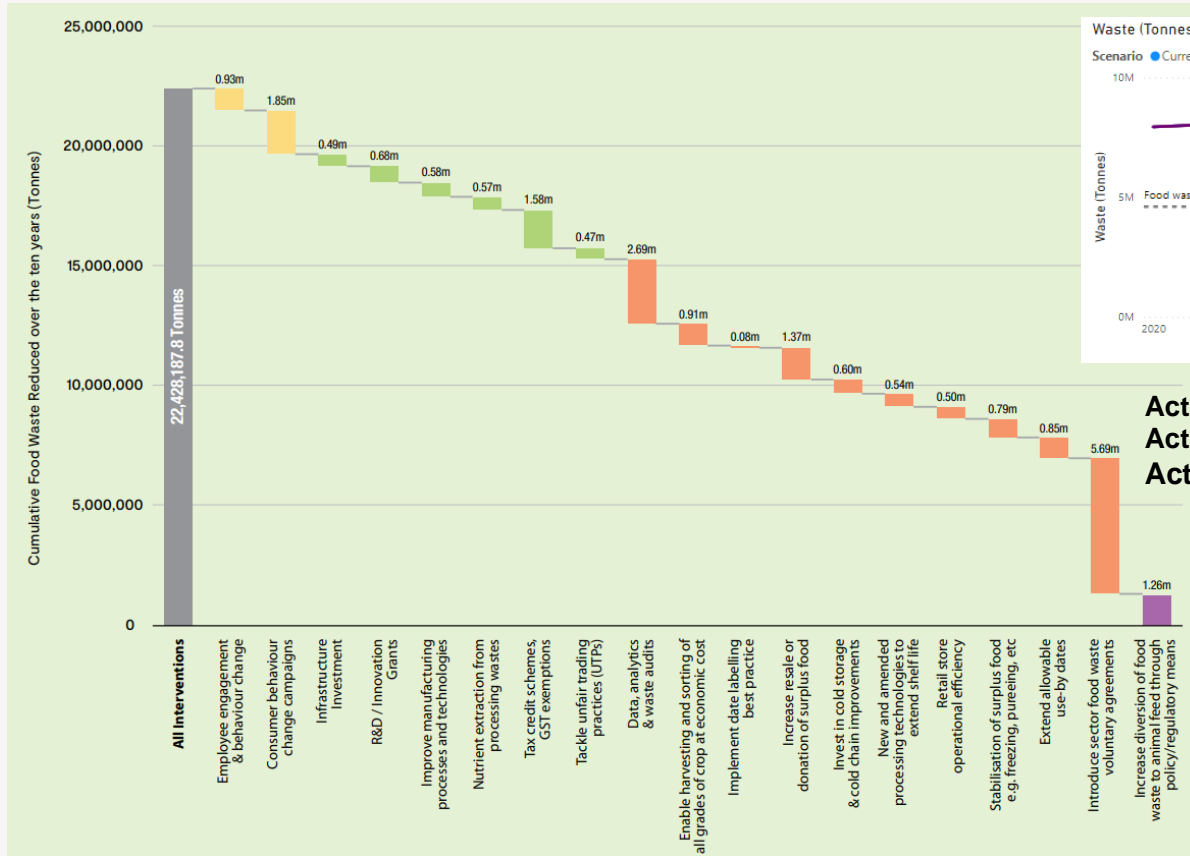


Figure 1: Progress to food waste target

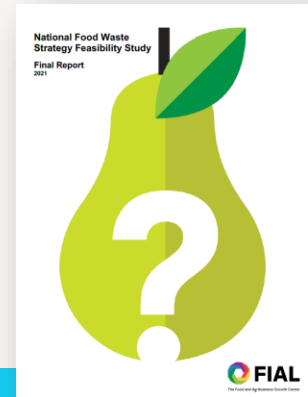


Actions impact on different parts of the food system  
 Actions reduce different amounts of waste  
 Actions happen over different periods of time

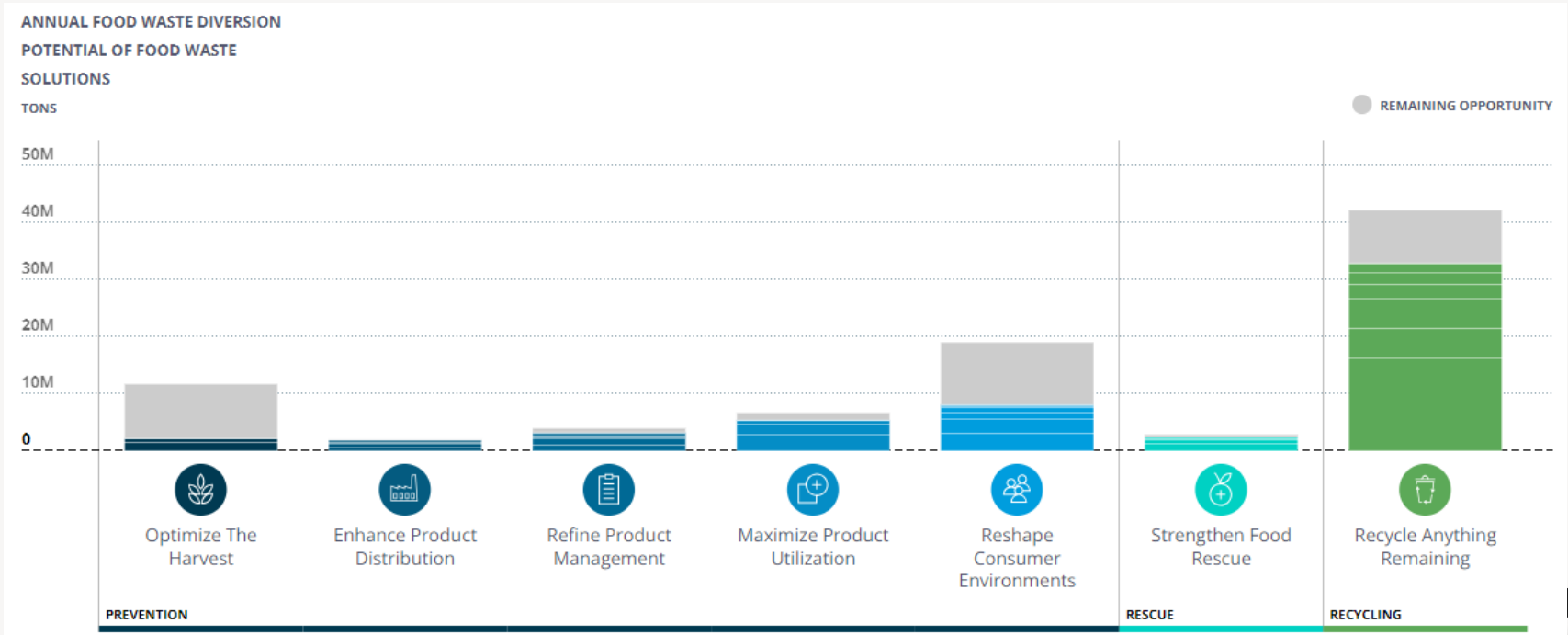
# Australian FLW strategy 41 actions



**Actions impact on different parts of the food system**  
**Actions reduce different amounts of waste**  
**Actions happen over different periods of time**



# ReFed Solutions Database USA 73 actions



Actions impact on different parts of the food system  
Actions reduce different amounts of waste  
Actions happen over different periods of time




ReFED  
Roadmap to 2030: Reducing  
U.S. Food Waste by 50% and  
the ReFED Insights Engine  
At-A-Glance





We have a growing number of  
lists of actions across multiple  
countries...



**But we don't have a review of  
effectiveness of these actions!**

# Objective: Create an evidence base for Actions

- "Imperfect" review of the literature, using 25 Academic articles, NGO reports and policy documents.
- Looking for the suggested actions to reduce and divert FLW
- Recording tonnages and % of diversion
- Mapping these actions to
  - 1) 89 Keywords
  - 2) 11 categories from the Food Systems Transformation Solution-Bank



## Different rates of effectiveness for different actions. Different levels of quantified evidence base.

Category (primary)	Average of Average diversion or reduction potential %	Total mentions	Number of quantified studies
Certification and standards	5%	8	3
Direct food provision		43	13*
Economic/financial	7%	36	1
Framework policies	10%	47	3
Governance/organisation	17%	50	5
Information/communication	13%	206	29
Market intervention		11	0
Not sure	7%	17	2
Regulatory	13%	125	28
Technology/innovation	26%	167	25

*\* Not all data provided as a % so these could not be included.*



# Different rates of effectiveness throughout the supply chain

Average diversion or reduction potential %

	On farm/Primary Production	Supply chains Wholesale Manufacturing	Grocery/Retail	Out-of-home	Institutional	Informal	Local government	Consumers & Citizens
Certification and standards	5%							
Direct food provision								
Economic financial	7%			7%				
Framework policies	10%	10%	10%	10%	10%			
Governance organisation		25%	25%	17%	17%	25%		
Information communication				5%	10%			14%
Market intervention								
Regulatory	18%	12%	14%	20%	17%	23%	33%	18%
Technology innovation	17%	28%	31%	27%	24%	24%		32%
<b>Average % per supply chain stage</b>	15%	20%	22%	21%	19%	23%	33%	19%

# So what works?

		Average diversion or reduction potential %	Min diversion or reduction potential %	Max diversion or reduction potential %	# of quantified studies
Regulatory	Advisory Guidelines	3%	3%	3%	1
	Food-Related Laws	16%	3%	28%	2
	Food-Related Rules	33%	12%	54%	2
	Industry Voluntary Agreements	20%	20%	20%	1
	Labelling	5%	5%	5%	1
	Self-Regulation	11%	1%	30%	12
Technology & innovation	Distribution of Food Surplus	21%	1%	50%	7
	Financing of Innovation	58%	25%	90%	2
	Research Activities on Food System	33%	25%	50%	3
Information & communication	Consumer Information Campaigns	10%	2%	18%	3
	Digital content	7%	6%	8%	2
	Labelling	5%	5%	5%	1
	Skills, Knowledge Training	16%	15%	16%	2
Governance & organisation	Mapping, Measuring and Monitoring	17%	9%	25%	3
Certification and standards	Standards – Food Safety, Quality, Composition	5%	1%	8%	3



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# End of presentation

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