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# Finding Coherent Actions to Support Food Waste Reductions

The sixth Future Food Symposium, the University of Birmingham, 22nd May 2025

**Centre for Food Policy**

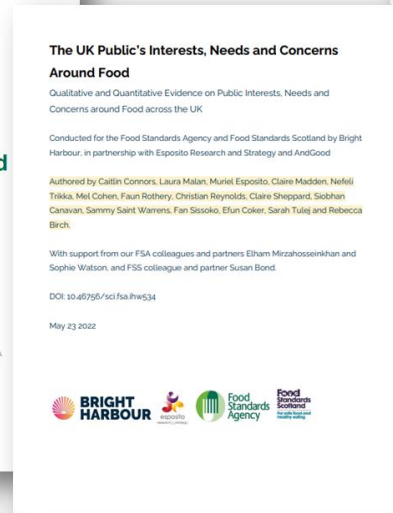
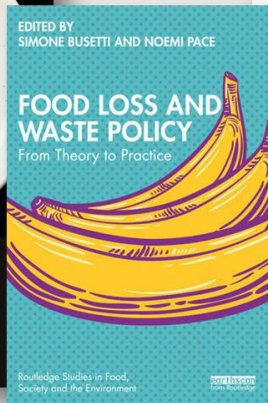
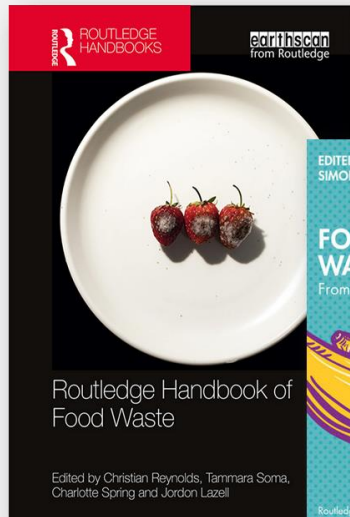
Policy and practice to redesign food systems

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# 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



# Shout out my other research: The Household simulation model

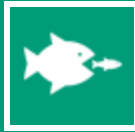
## HOUSEHOLD FOOD SIMULATION

The Household Simulation Model: A decision making tool for building more sustainable food systems.



### FOOD AND PACKAGING TRADE-OFFS

RESEARCH ON NEW PACKAGING SYSTEMS  
REUSABILITY AND REFILLABILITY



### PACK SIZE

ALIGNMENT WITH CONSUMPTION NEEDS  
PACKAGING LIGHTWEIGHTING



### SHELF-LIFE EXTENSION

PACKAGING TECHNOLOGIES EXTENDING SHELF LIFE OF  
PRODUCTS



### STORAGE PRACTICES

EDUCATE CONSUMERS ABOUT THE BENEFITS OF MAXIMISING  
PRODUCT SHELF LIFE THROUGH APPROPRIATE STORAGE  
PRACTICES

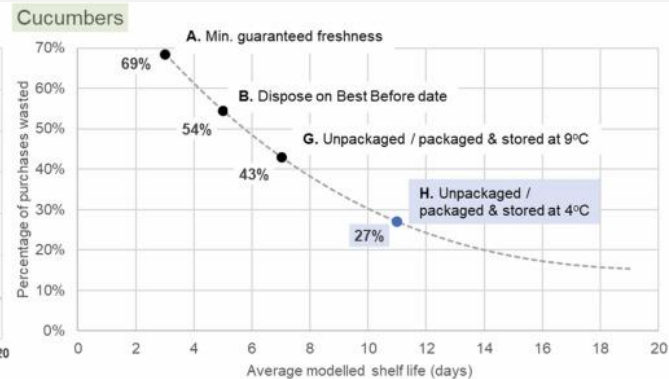
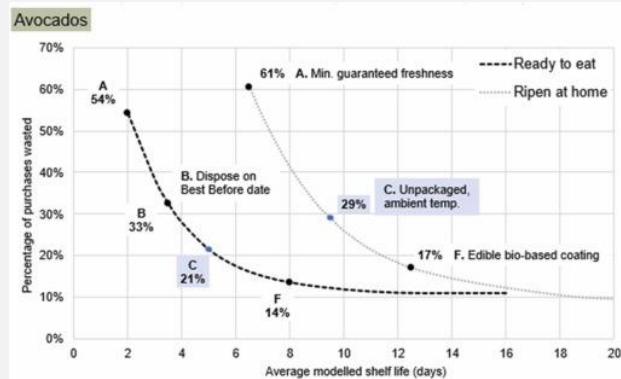
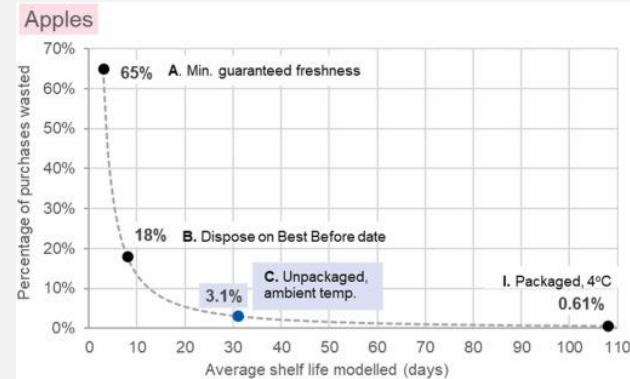


### COMBINATION OF INTERVENTIONS

SINGLE INTERVENTIONS MAY HAVE LIMITED IMPACTS

<https://blogs.city.ac.uk/householdfoodsimulation/>

# 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



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



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

Dr Christian Reynolds  
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# In 2019 I presented this... and published this...



**N8 AgriFood**

What can local authorities do to reduce food waste?  
*What can we learn from ten years of food waste interventions.*

Public Policy Exchange, London, 13 February 2019

Dr Christian Reynolds  
Knowledge Exchange Research Fellow (N8 AgriFood project)  
Department of Geography, University of Sheffield  
[@sartorialfoodie](#)



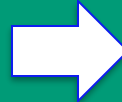
**N8**  
NATIONAL RESEARCH  
INSTITUTES



**hefce**  
HIGHER EDUCATION  
FUNDING COUNCIL  
FOR ENGLAND



**SheFF**  
The University of Sheffield  
Sustainable Food Futures



Food Policy  
Volume 83, February 2019, Pages 7-27



Review

## Review: Consumption-stage food waste reduction interventions – What works and how to design better interventions

[Christian Reynolds](#)<sup>a, b</sup>, [Liam Goucher](#)<sup>c</sup>, [Tom Quested](#)<sup>b</sup>, [Sarah Bromley](#)<sup>b</sup>, [Sam Gillick](#)<sup>b</sup>, [Victoria K. Wells](#)<sup>d</sup>, [David Evans](#)<sup>e</sup>, [Lenny Koh](#)<sup>c</sup>, [Annika Carlsson Kanyama](#)<sup>f</sup>, [Cecilia Katzeff](#)<sup>g</sup>, [Åsa Svenfelt](#)<sup>h</sup>, [Peter Jackson](#)<sup>g</sup>

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<https://doi.org/10.1016/j.foodpol.2019.01.009> [Get rights and content](#) ▸

A Local Authority representative in the audience asked  
*"So what can we do to reduce food waste if we follow WRAP guidance already..."*  
For five years, I have been trying to answer!  
**So what do we know in 2025?**



# **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

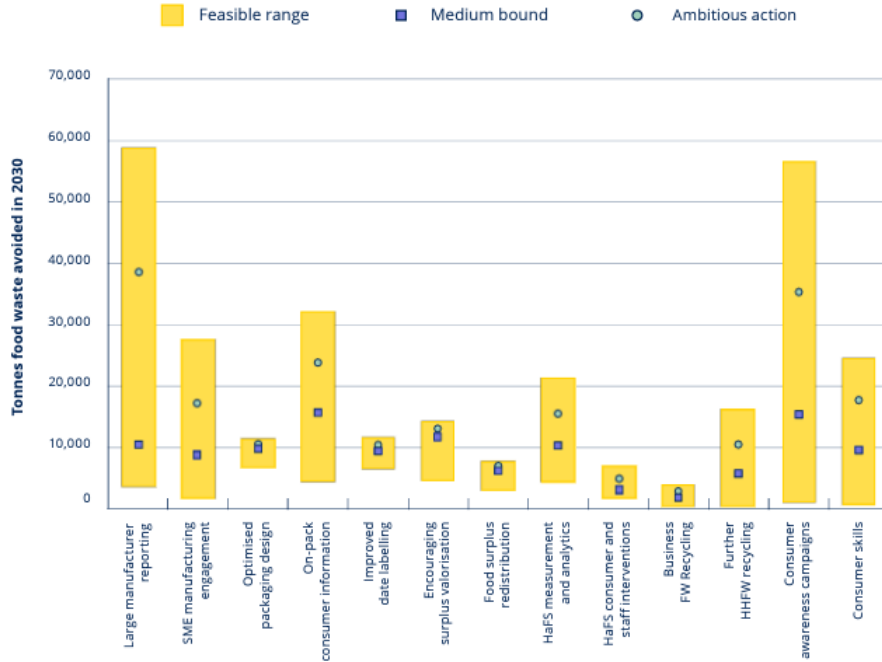
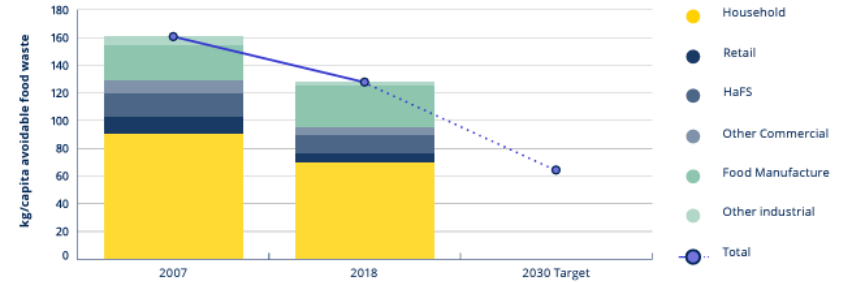
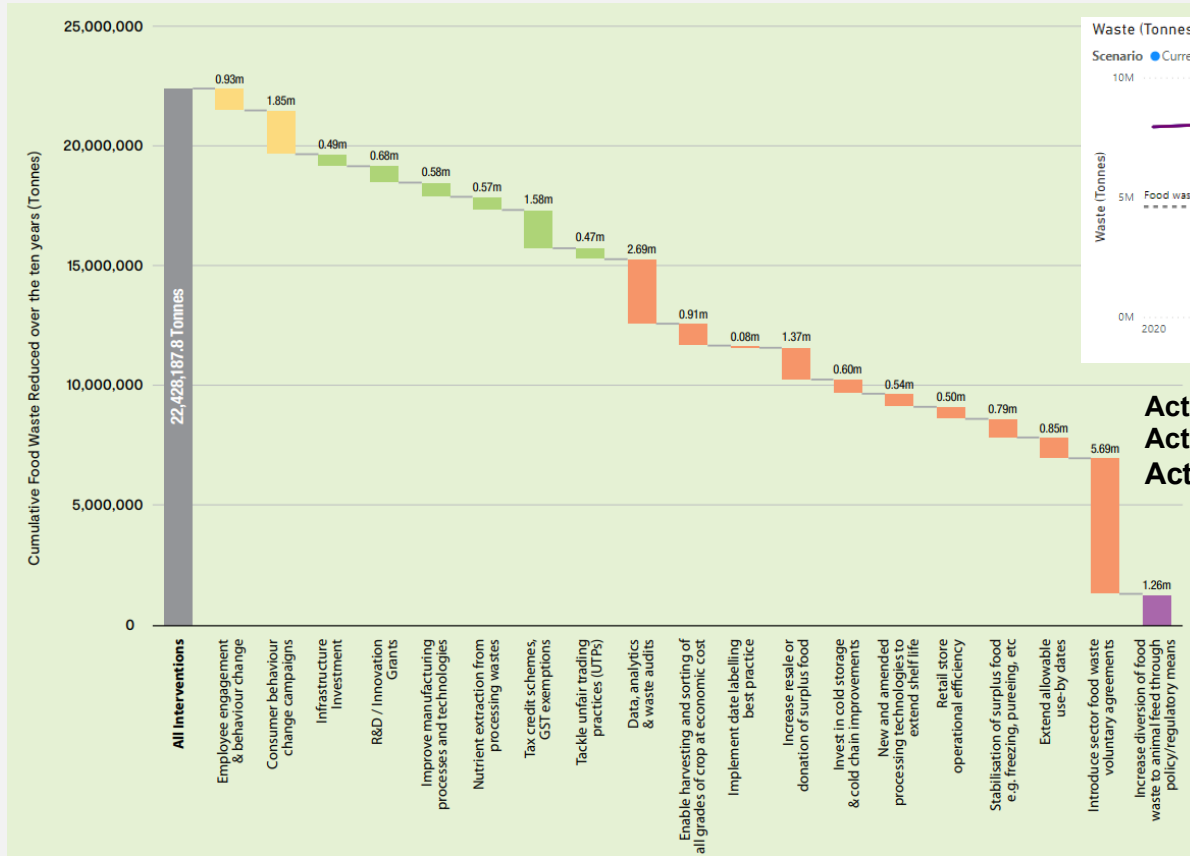


Figure 1: Progress to food waste target

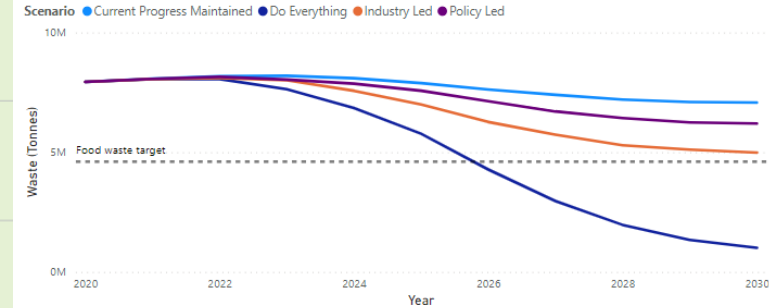


Actions impact on different parts of the food system  
 Actions reduce different amounts of waste  
 Actions happen over different periods of time

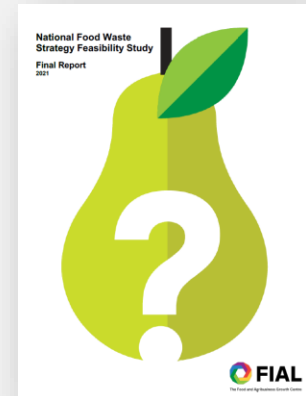
# Australian FLW strategy 41 actions



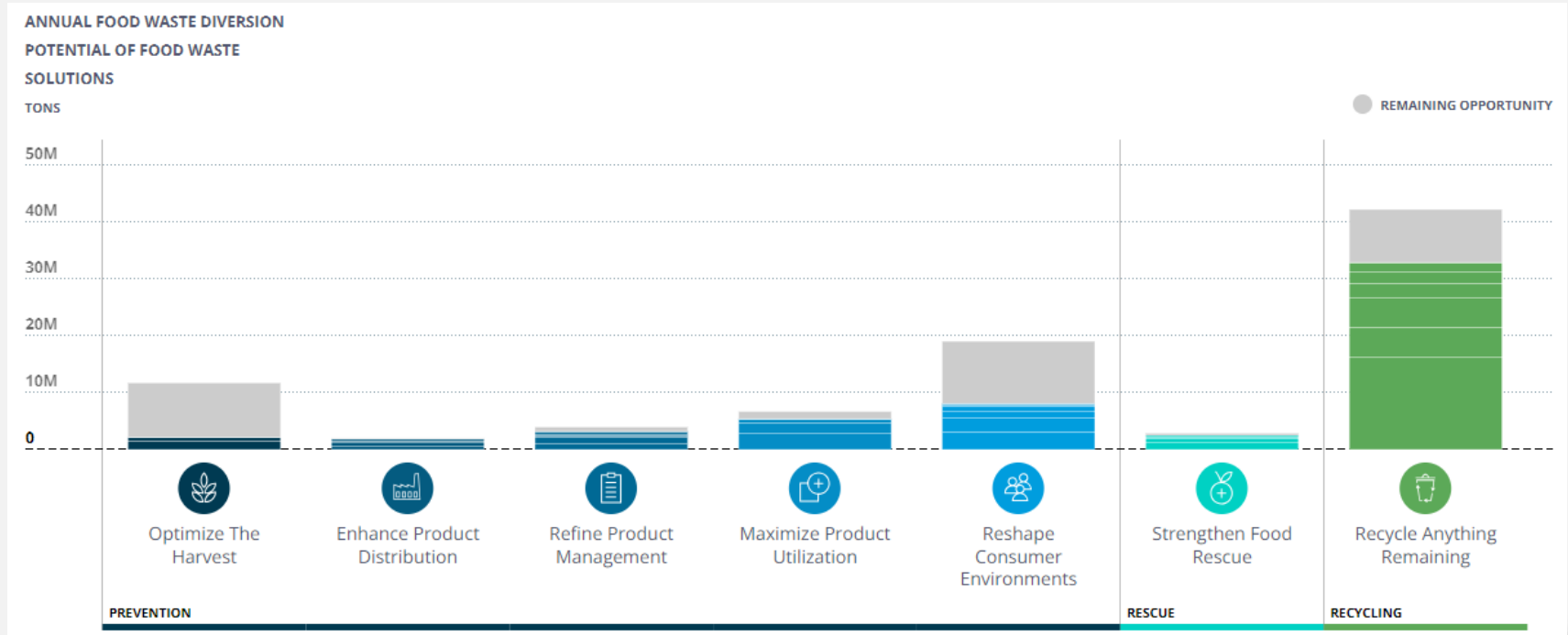
Waste (Tonnes) by Year and Scenario



**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**



**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.**

<b>Category (primary)</b>	<b>Average of Average diversion or reduction potential %</b>	<b>Total mentions</b>	<b>Number of quantified studies</b>
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 %

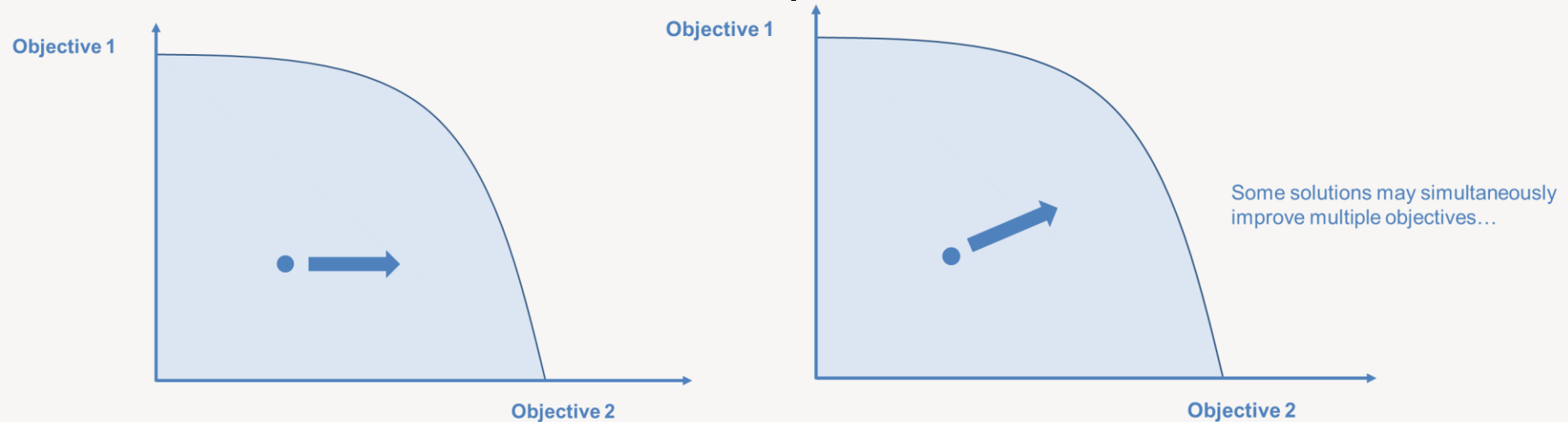
	On farm/Primary Production	Supply chains Wholesale Manufacturing	Grocery/Retail	Out-of-home	Institutional	Informal	Local government	Consumers & Citizens
Certification and standards	5%							
Direct food provision								
Economic financial	7%			7%				
Framework policies	10%	10%	10%	10%	10%			
Governance 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?

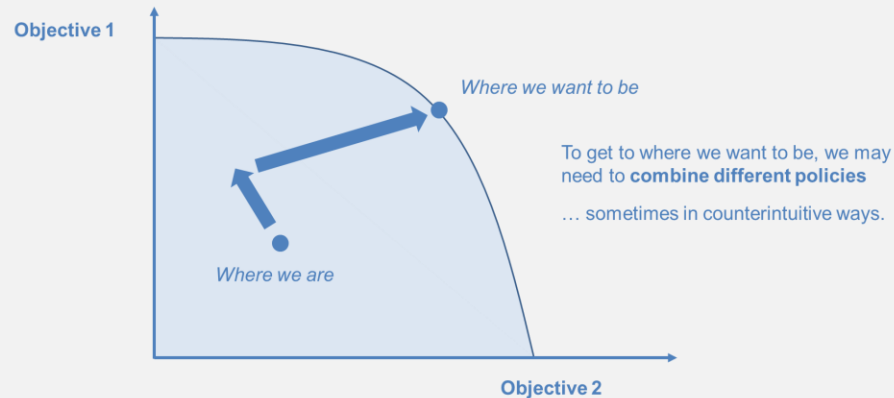
		Average diversion or reduction potential %	Min diversion or reduction potential %	Max diversion or reduction potential %	# of quantified studies
Regulatory	Advisory Guidelines	3%	3%	3%	1
	Food-Related Laws	16%	3%	28%	2
	Food-Related Rules	33%	12%	54%	2
	Industry Voluntary Agreements	20%	20%	20%	1
	Labelling	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

# Lack of data and discussion of Policy Bundles!

- When we think about food waste reduction we think about the movement **towards** the objective (SDG12.3)
- We have not thought about comparing the **magnitude** of reduction
- We don't tend to think about impacts on **other outcomes**.



# Lack of data and discussion of Policy Bundles!



- Bundles of solutions/policies may have synergies together,
- They may have tradeoffs or other interaction effects.
- We have not looked into this much at all!

**The Path to Half** (Victoria, Au) 25 Solutions

**ReFED** (USA) 73 Solutions

**Australian food waste strategy** 41 Solutions

**Recommendations for Action in Food Waste Prevention** (EU Platform on Food Losses and Food Waste) 47 Solutions

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# End of presentation

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Postgraduate taught degree

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