

Measuring GHG savings from food waste reduction and recovery



Peter Skelton 2 March 2017

WRAP is not-for-profit, working with governments, businesses and citizens to create a world in which we source and use resources sustainably.



What we do





Our ambition



Food waste.. edible food that is thrown away

 Resilient



Resilient Supply Chains Healthy Sustainable Eating





Sector agreement: Courtauld Commitment





EST 1884

Unilever









sodexo

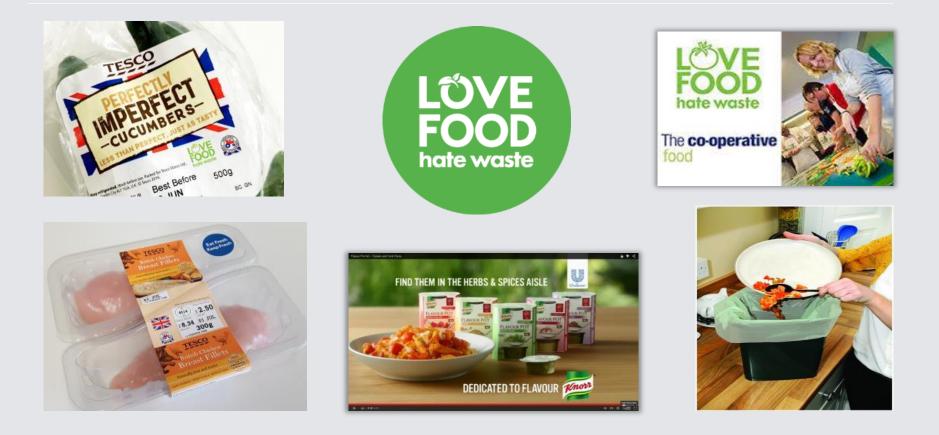
QUALITY OF LIFE SERVICES

WE NEED TO CHANGE THE WAY WE PRODUCE, SUPPLY, SELL & CONSUME FOOD & DRINK

Businesses who participated in the Courtauld Commitment saved over \$125 million by reducing food waste in 3 years

Consumer Engagement





WRAP's UK Record

Household food waste (2007-12) 1 million t/y savings 4.4 Mt GHG savings \$3.4 billion

WRAP international food waste





Measuring Food Waste



- Weight
- Financial value
- Nutrient value
- Social
- Environmental (GHG)
 - CO₂eq
- Environmental (water use /other)

Food Production and GHG



- **15-30%** of global GHG impact is due to food production/processing.
- Different foods have different GHG impact/tonne
- The same food from different regions may have different embedded GHG
- **1/3** of all food produced is not eaten.....

GHG Impact of food waste



Each stage of food & drink **production** requires energy, fuel, water and land.

- Production (inc. inputs/fertilizer)
- Packing
- Distribution
- Storing (inc. chilling)
- Cooking

Impact of food not consumed will vary by where in the cycle it is wasted

The Food Life Cycle



Food and drink material hierarchy

Most preferable option

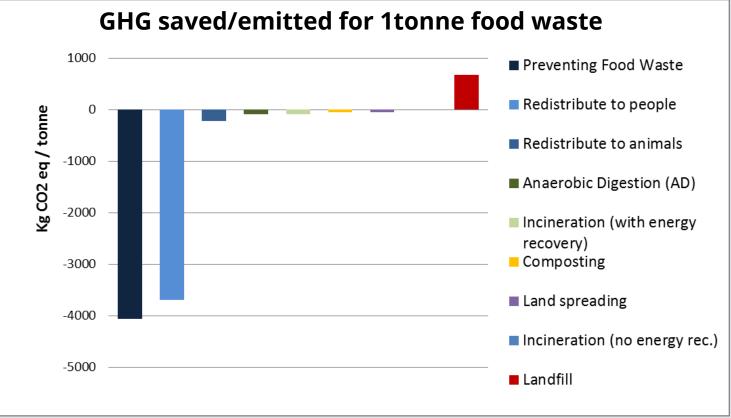
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	Prevention
	 Waste of raw materials, ingredients and product arising is reduced – measured in overall reduction in waste
	OptimisationRedistribution to people.
	Sent to animal feed
	Recycling
	Waste sent to anaerobic digestion; orWaste composted
	Recovery
	 Incineration of waste with energy recovery.
	Disposal
	 Waste incinerated without energy recovery. Waste sent to landfill.
,	 Waste ingredient/product going to sewer.

Least preferable option

Why Prevention is key...





Calculating GHG impact of UK food waste

- 2 approaches
- Top down based on national/EU GHG impacts

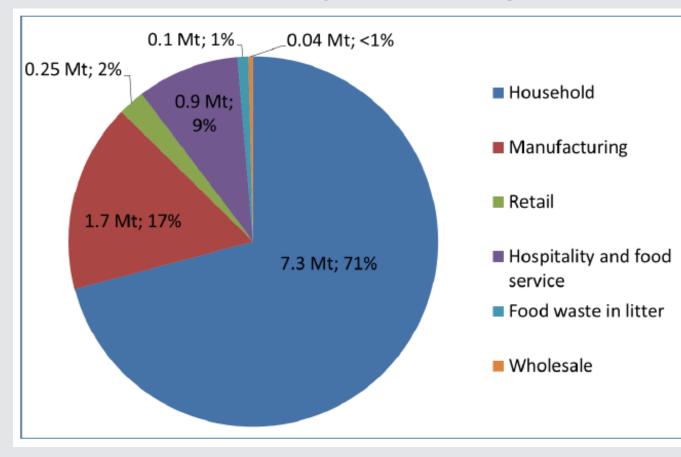
• Bottom up based on composition and LCAs





UK Food Waste : post farm gate (10Mt)

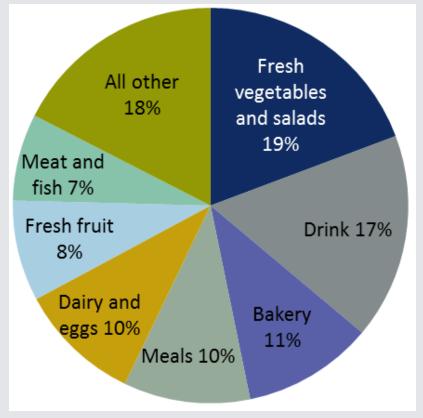
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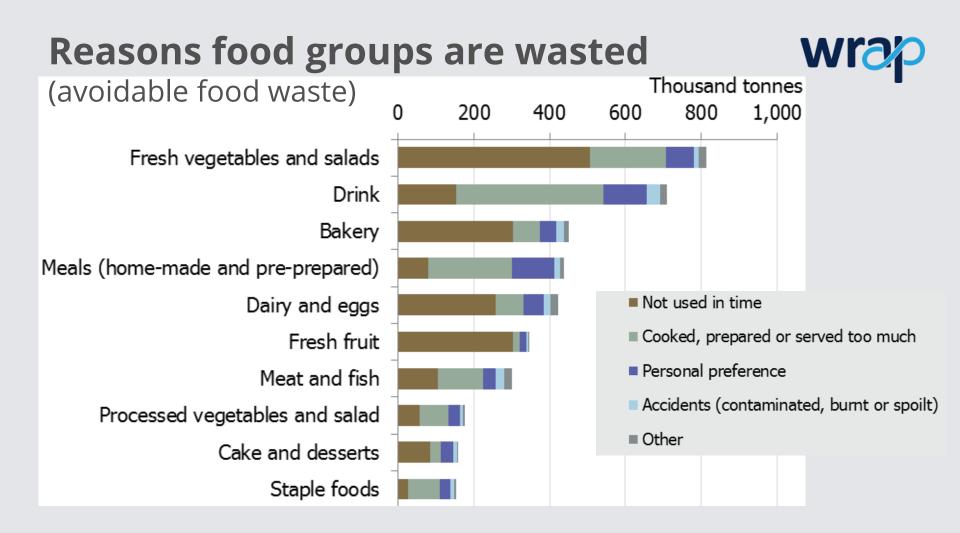


Household food waste by category



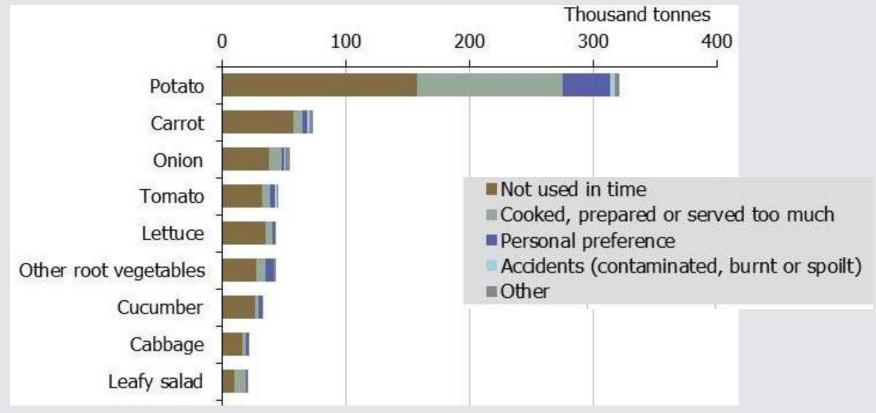
UK Household by weight (2012)





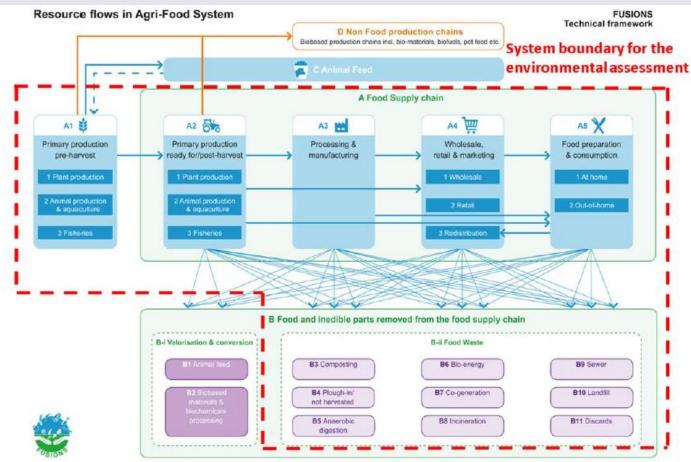
Product level waste data



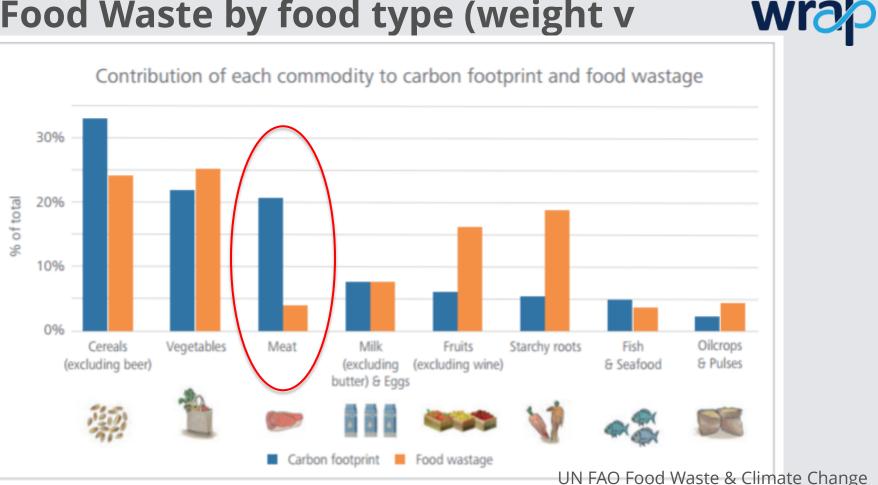


LCA : system boundaries & scope





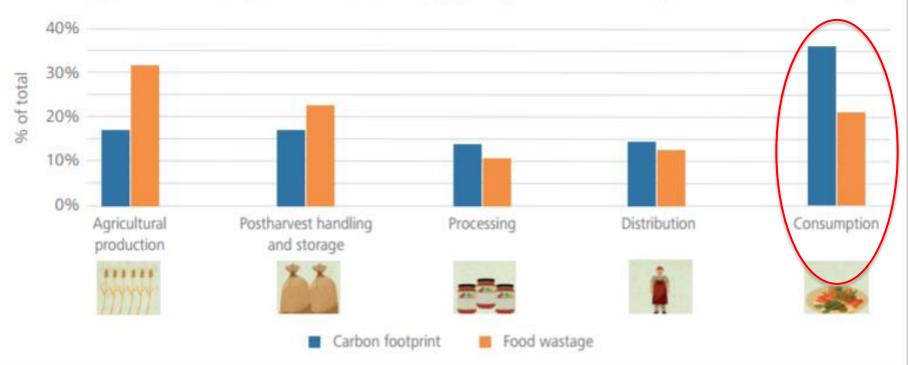
Food Waste by food type (weight v



Food Waste by stage (weight v GHG)



Contribution of each phase of the food supply chain to carbon footprint and food wastage



UN FAO Food Waste & Climate Change

Per capita food waste impacts



Average, per capita food wastage footprint by region. High income countries have double that of low income countries, due to waste and consumption patterns.



UN FAO Food Waste & Climate Change

Value of GHG measurement



- (Better) reflects environmental impact
- Reflects dietary patterns/shifts
- Allows targeting hot spots, at the right stage
- Global currency
- LCA data more readily available
- Food waste (weight) measurement is key

3 solutions to Tackle Climate Change

Reference: http://www.globalcalculator.org/

Soot Waste Food waste is responsible for greenhouse gas

and improving how we treat food waste and agricultural residues could have a significant impact.

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To keep climate change below 2°C, we need to reach zero net emissions by 2075.

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In combination with the other measures, we can do this by making better products, making better use of them, changing business models and increasing recycling.

Better Products

W. Healthy Sustainable could help to feed a growing population demands on our

per day and changing the balance of dietary protein sources.

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The true cost of waste

Visible costs

Lost materials
Energy costs
Lost labour
Other costs

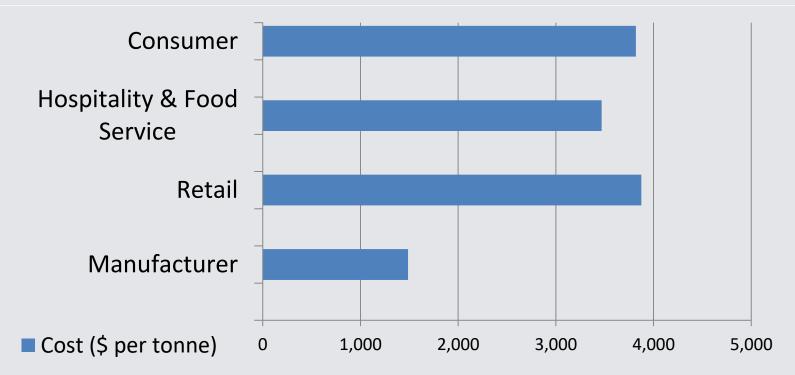
Disposal costs

Invisible costs

On average, the true cost of wasted materials is about ten times the cost of disposal.

The true cost of waste



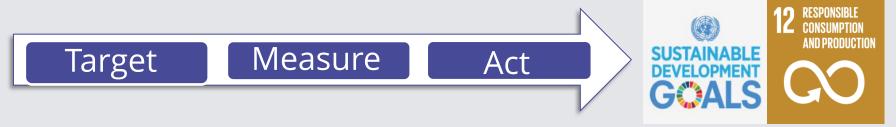


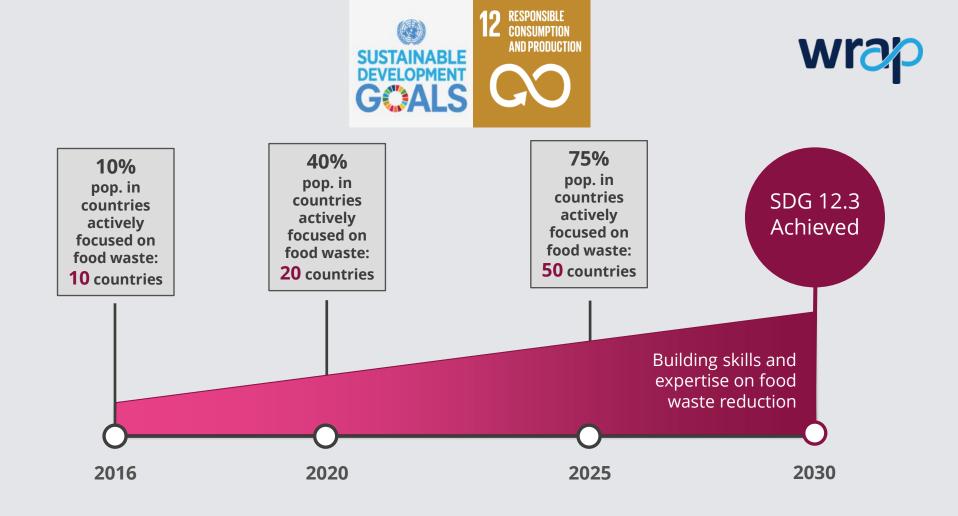
Source: WRAP (2016). Average UK cost of food waste including ingredients, storage, processing, cooking, and disposal.





- Food waste **prevention** not just management
- Meaningful targets are in place
- Awareness of food waste is high/growing
- Measurement is patchy
- Collaboration and knowledge sharing is key
- Need to act now together!





Contact



Questions?

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"If you can't measure it, you can't manage it"