

Measuring GHG savings from food waste reduction and recovery



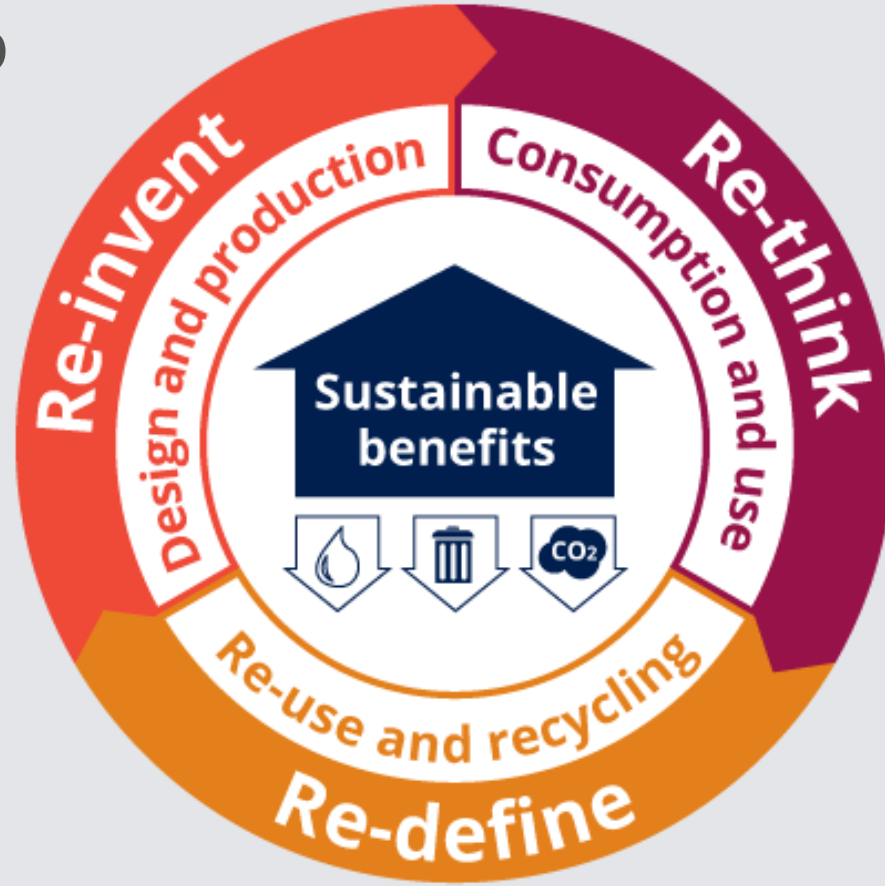
Peter Skelton
2 March 2017



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
Supply
Chains**



**Healthy
Sustainable
Eating**

Sector agreement: Courtauld Commitment



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

Consumer Engagement





WRAP's UK Record

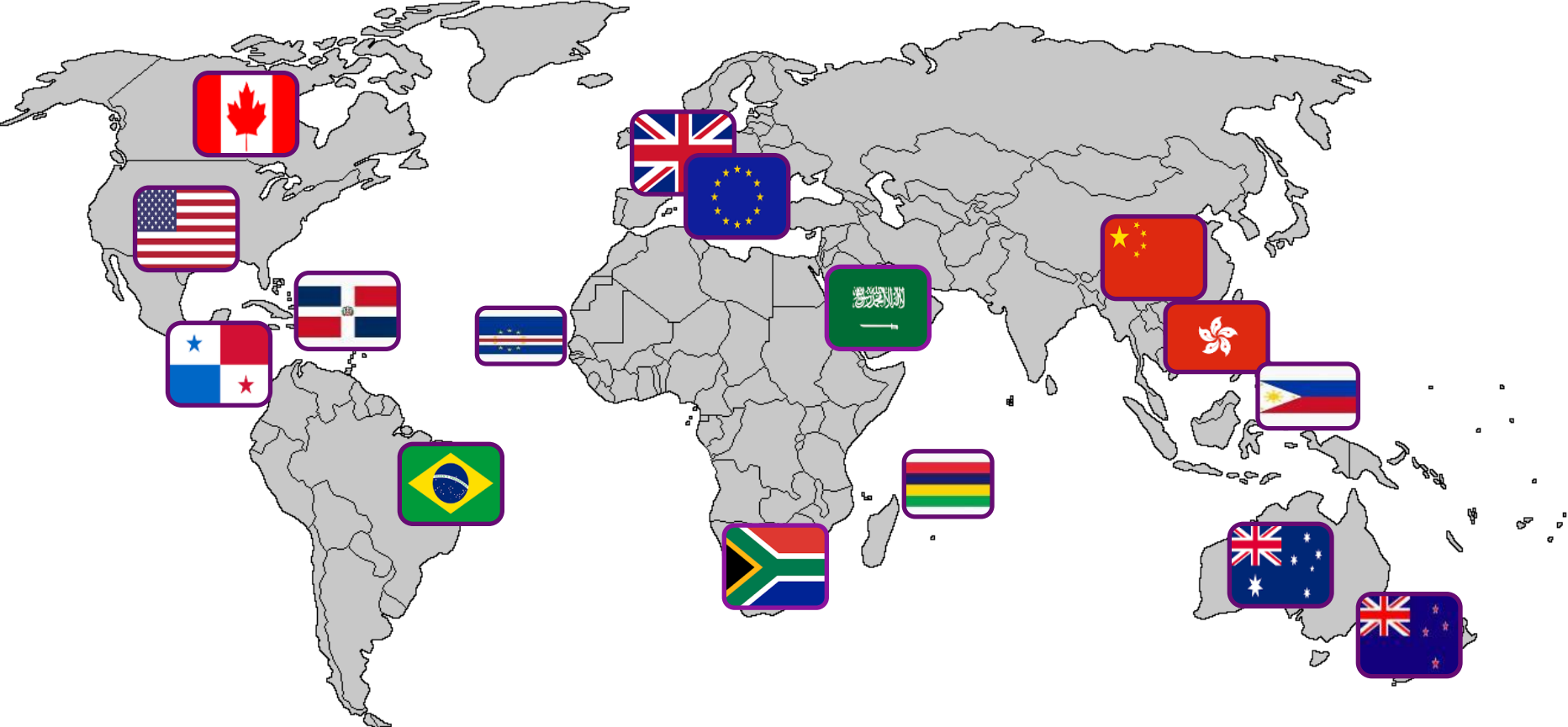
Household food waste
(2007-12)

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

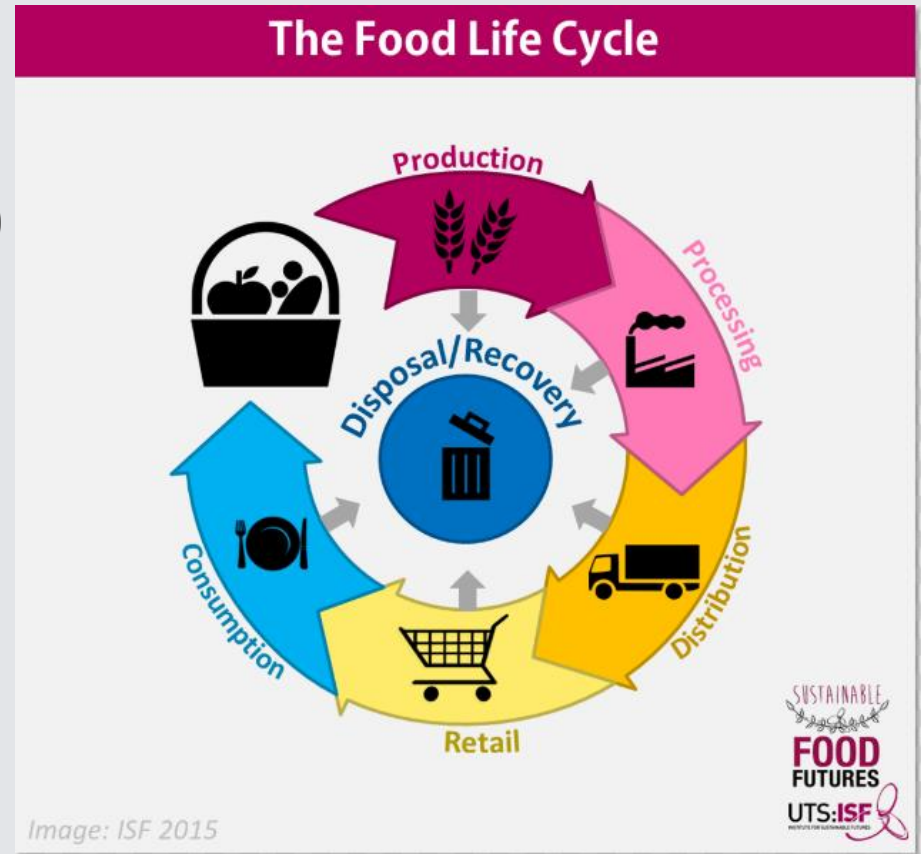
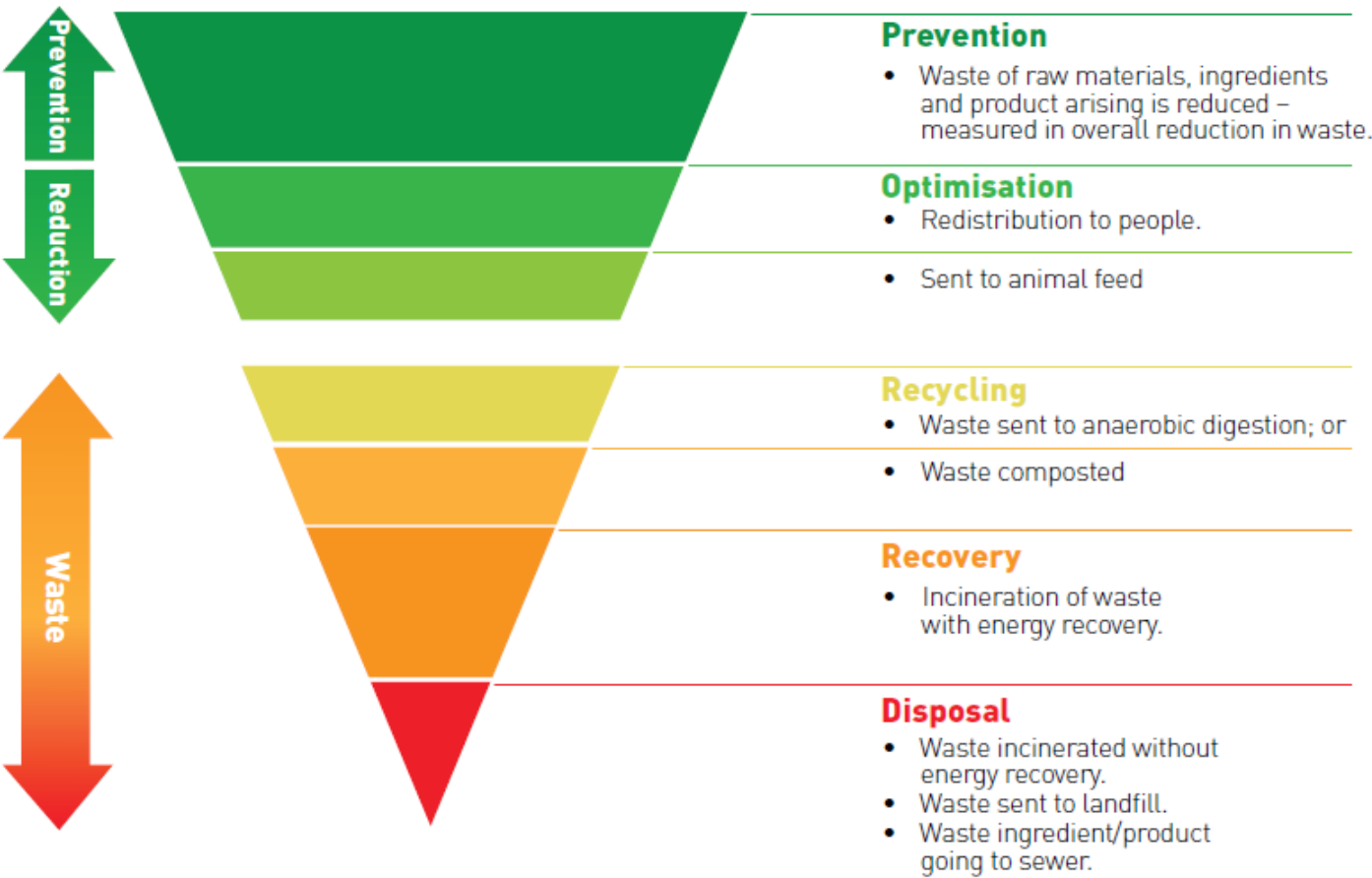


Image: ISF 2015

Food and drink material hierarchy

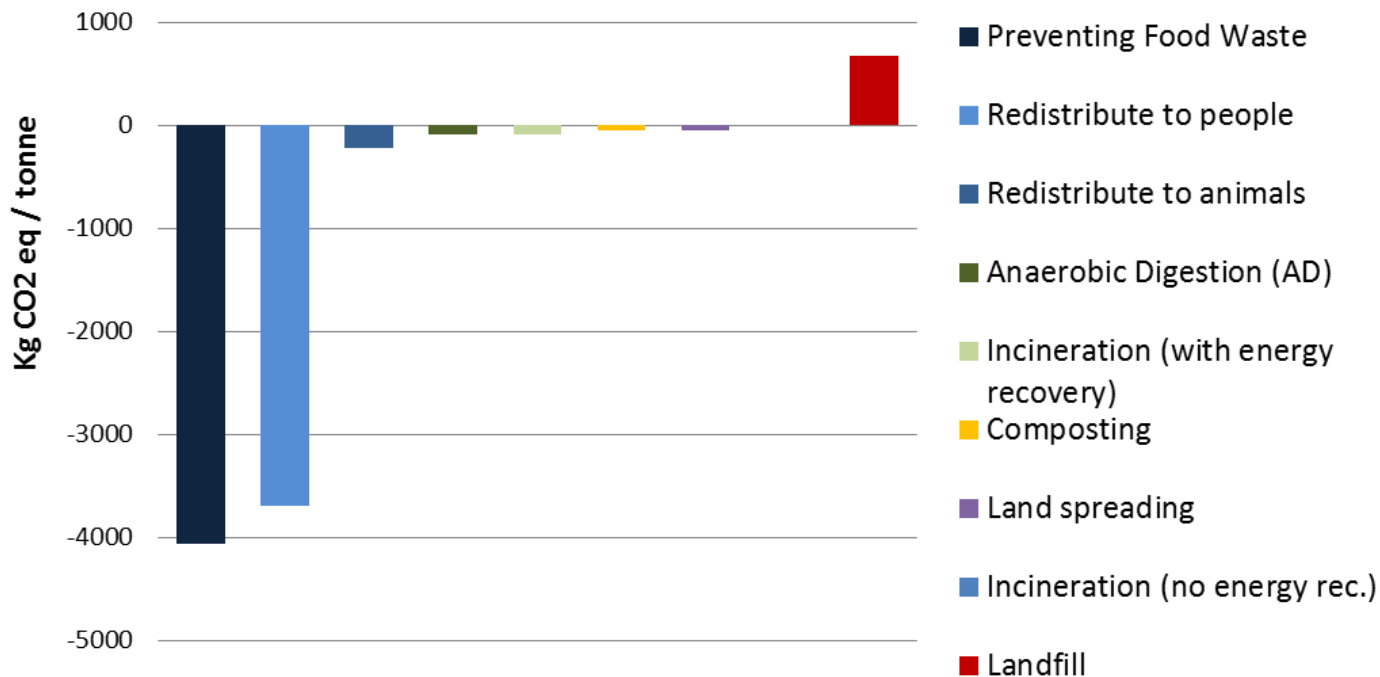
Most preferable option



Least preferable option

Why Prevention is key...

GHG saved/emitted for 1tonne food waste



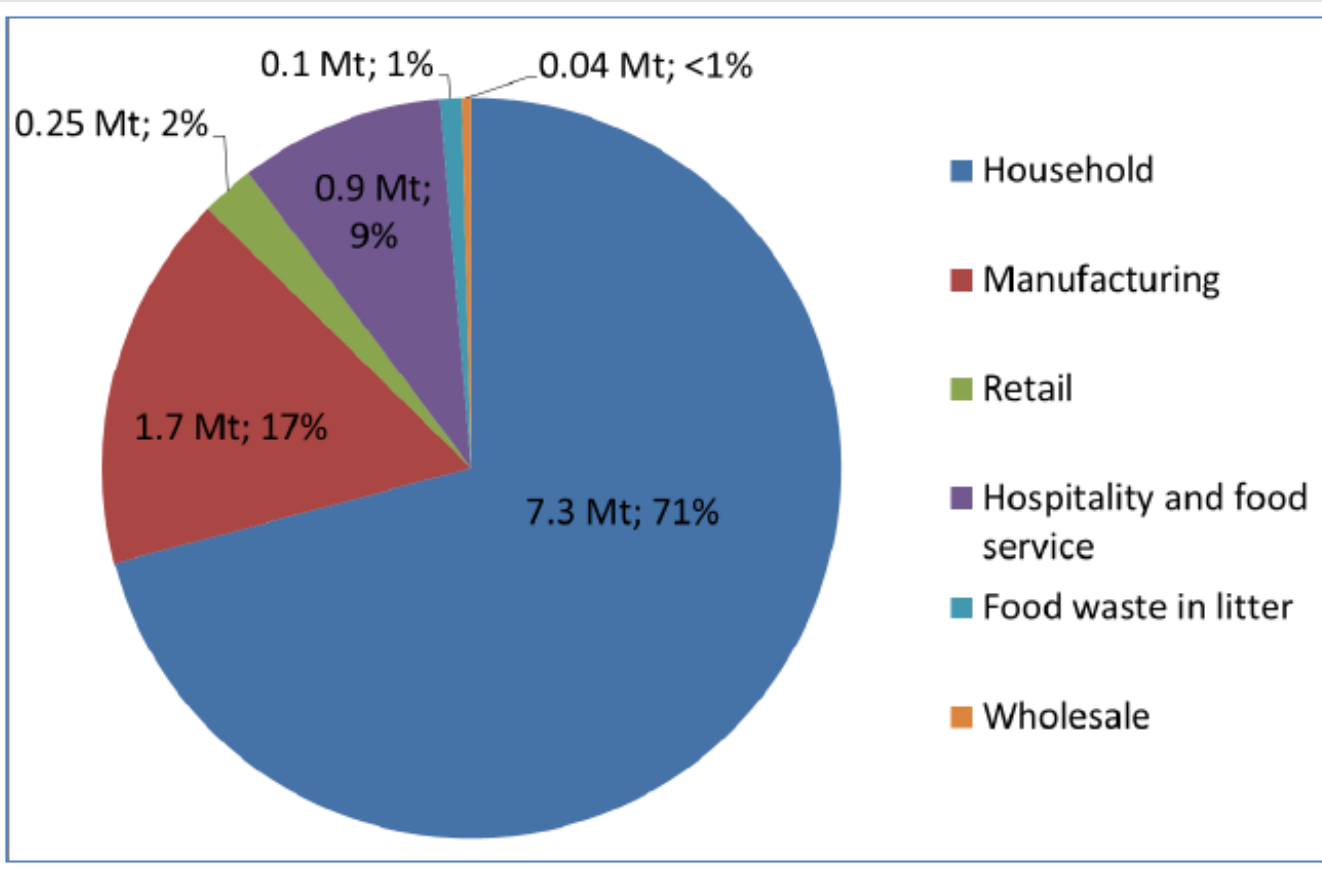
Calculating GHG impact of UK food waste



- 2 approaches
- Top down based on national/EU GHG impacts
- Bottom up based on composition and LCAs

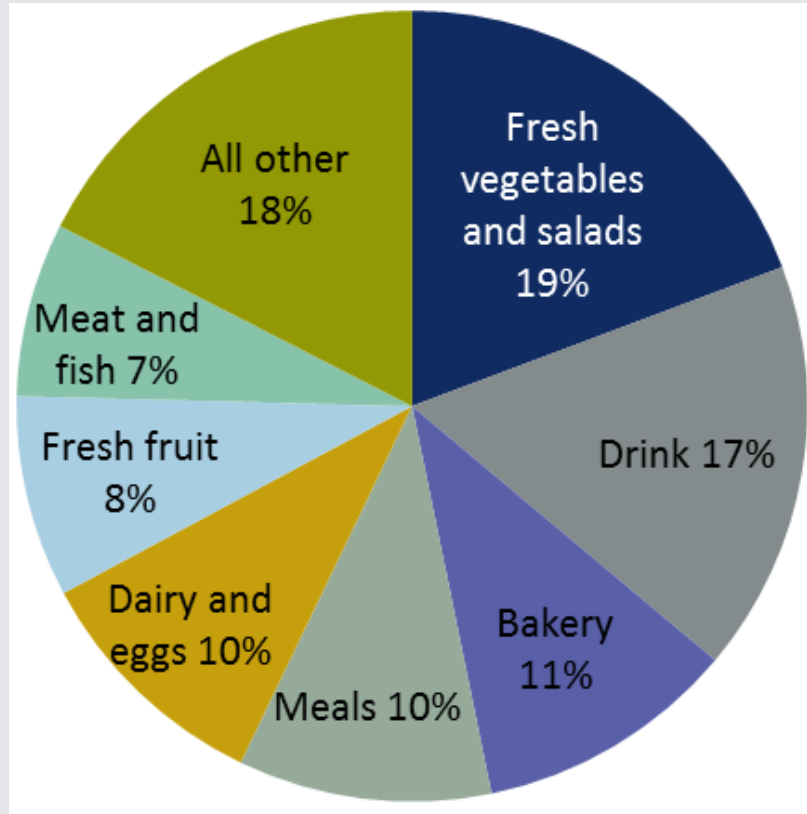


UK Food Waste : post farm gate (10Mt)



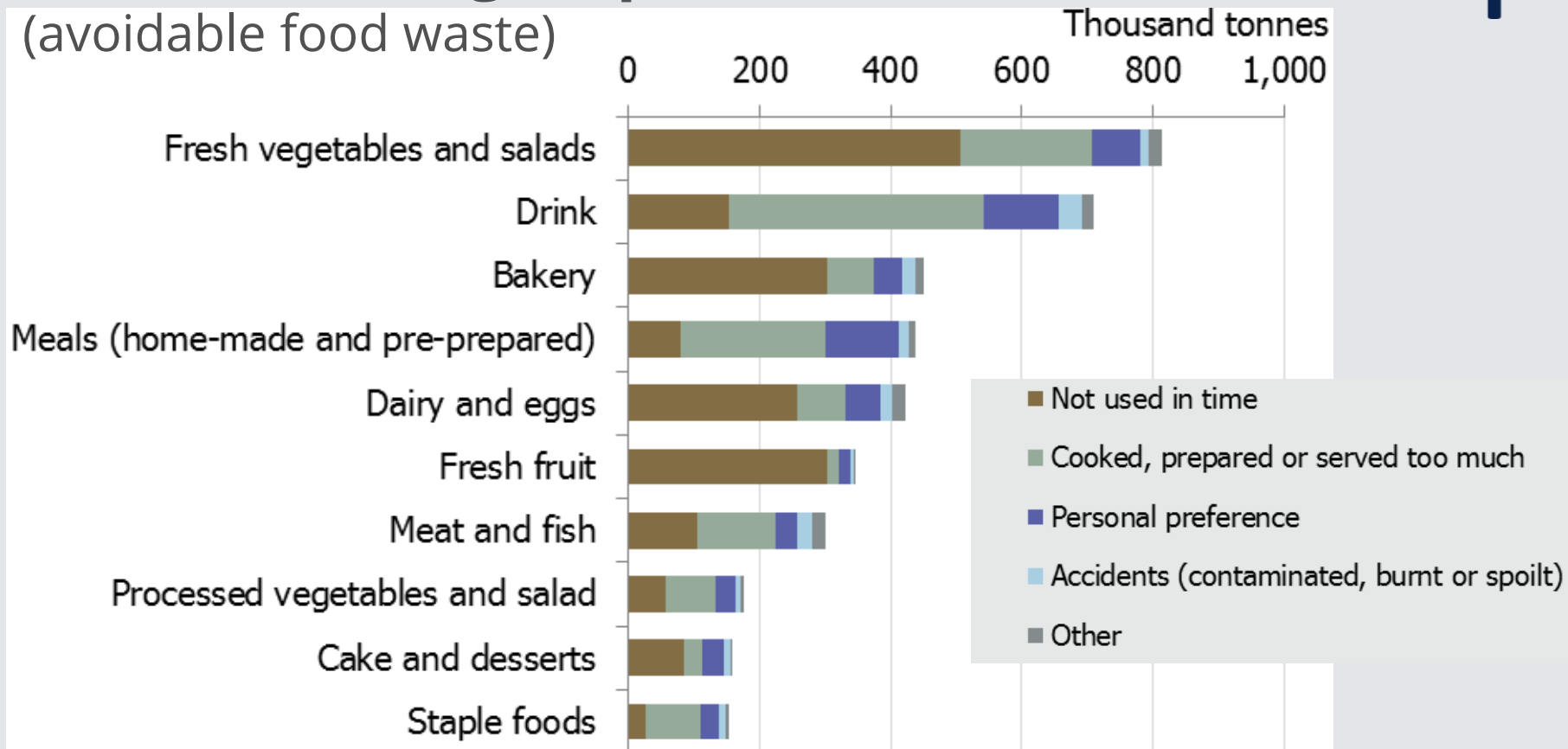
Household food waste by category

UK Household by weight (2012)

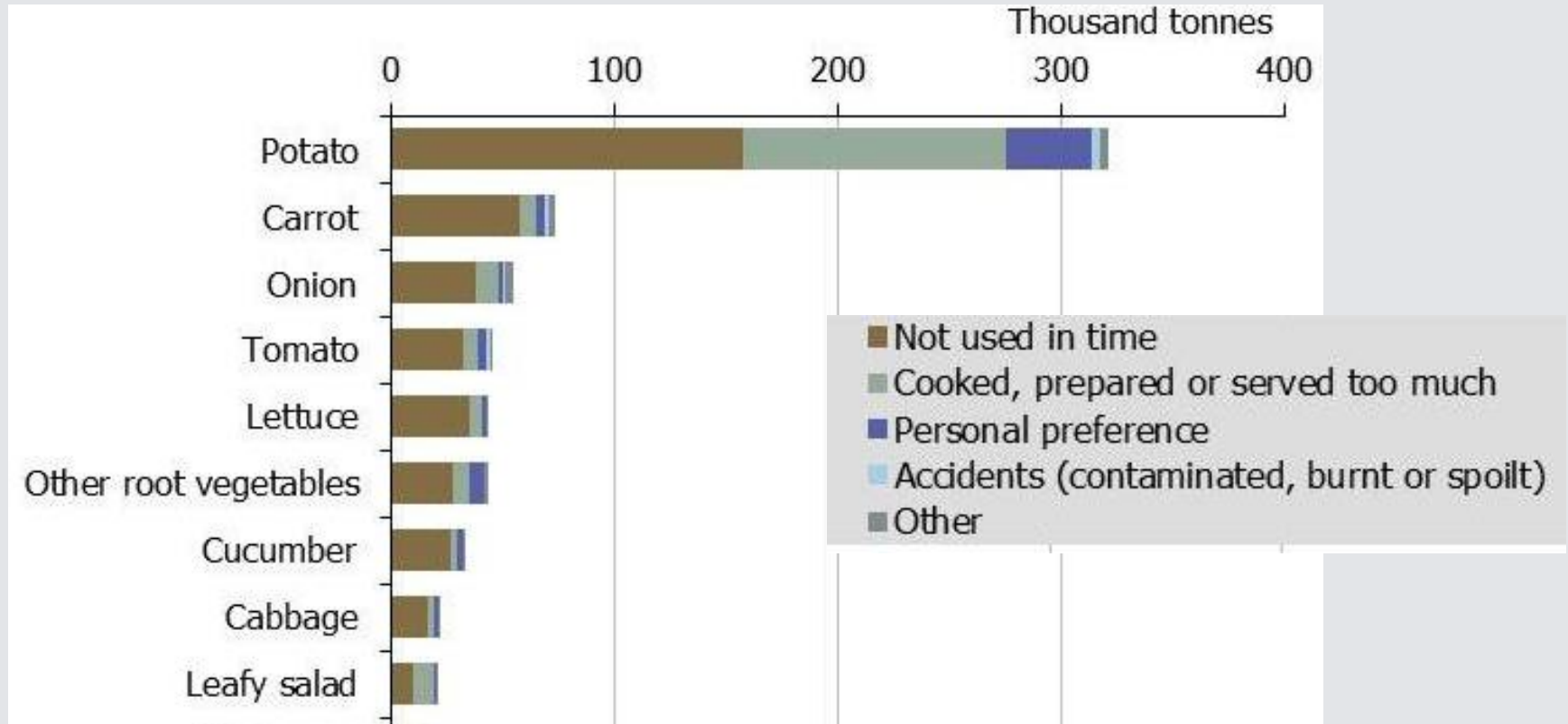


Reasons food groups are wasted

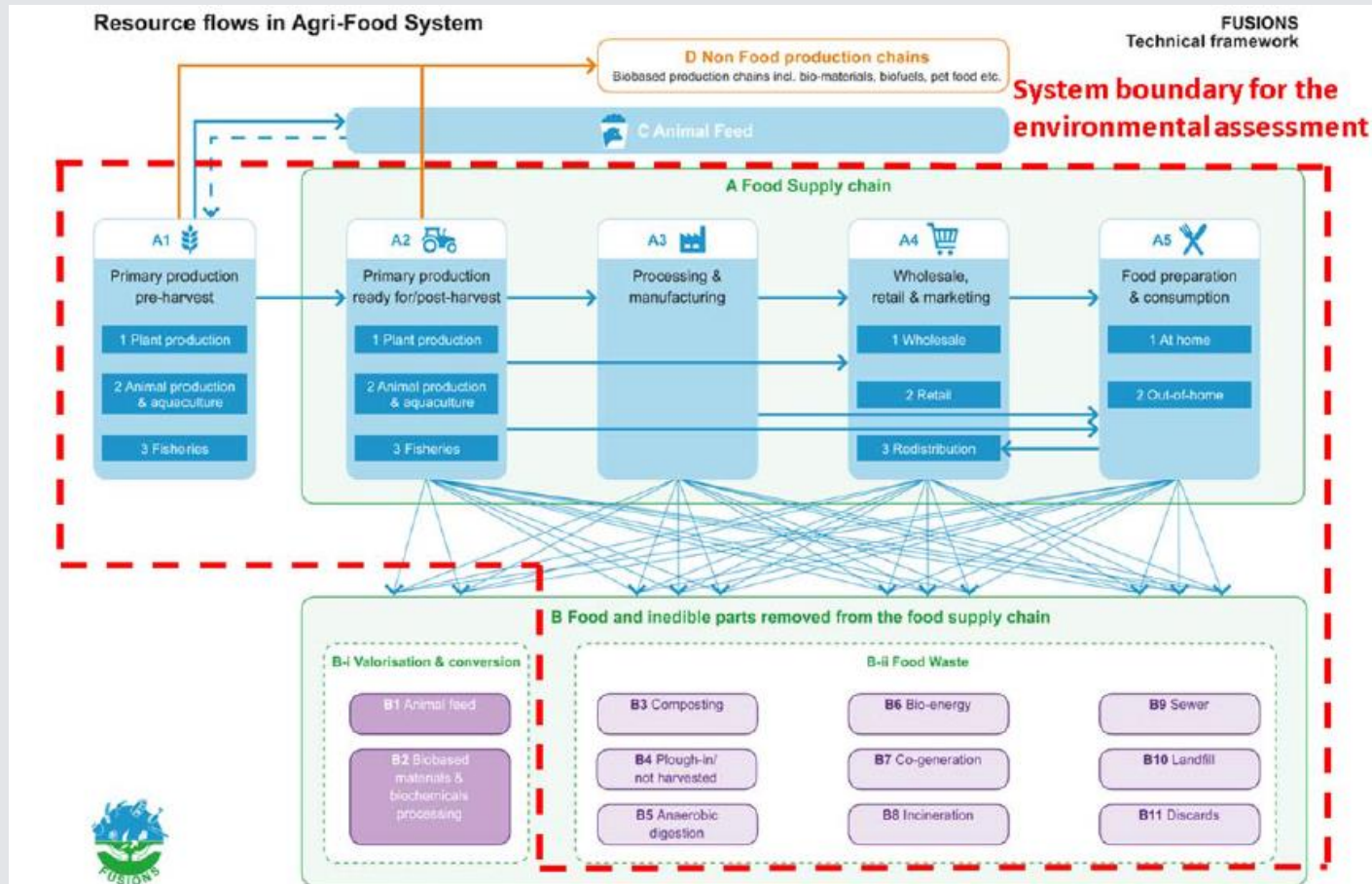
(avoidable food waste)



Product level waste data



LCA : system boundaries & scope



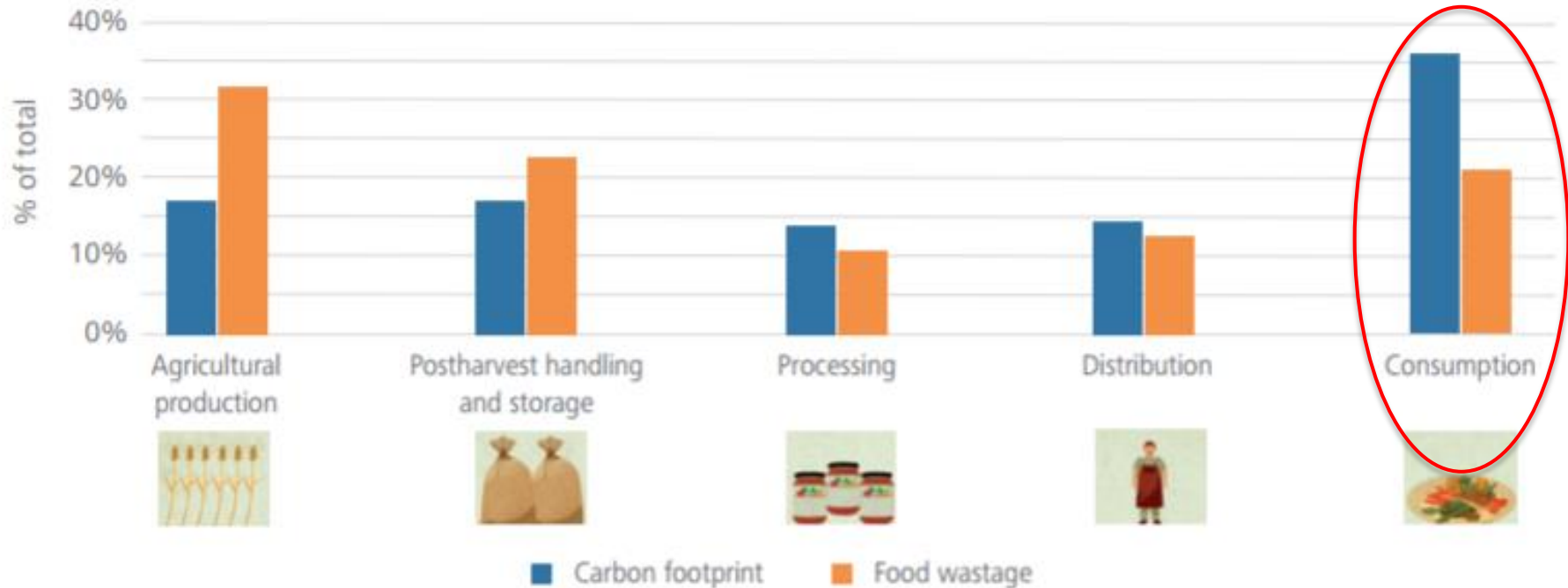
Food Waste by food type (weight v

Contribution of each commodity to carbon footprint and food waste



Food Waste by stage (weight v GHG)

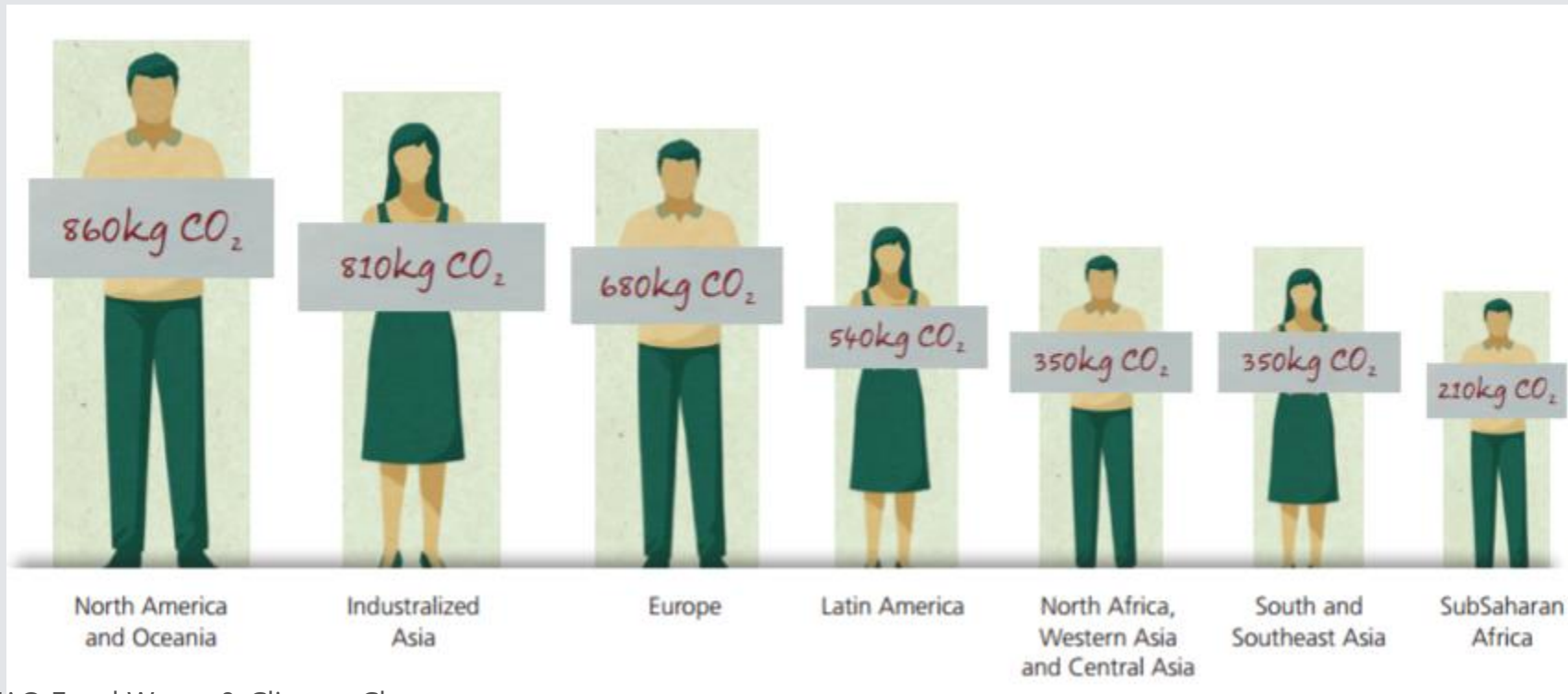
Contribution of each phase of the food supply chain to carbon footprint and food waste



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.



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/>

The true cost of waste



Disposal costs

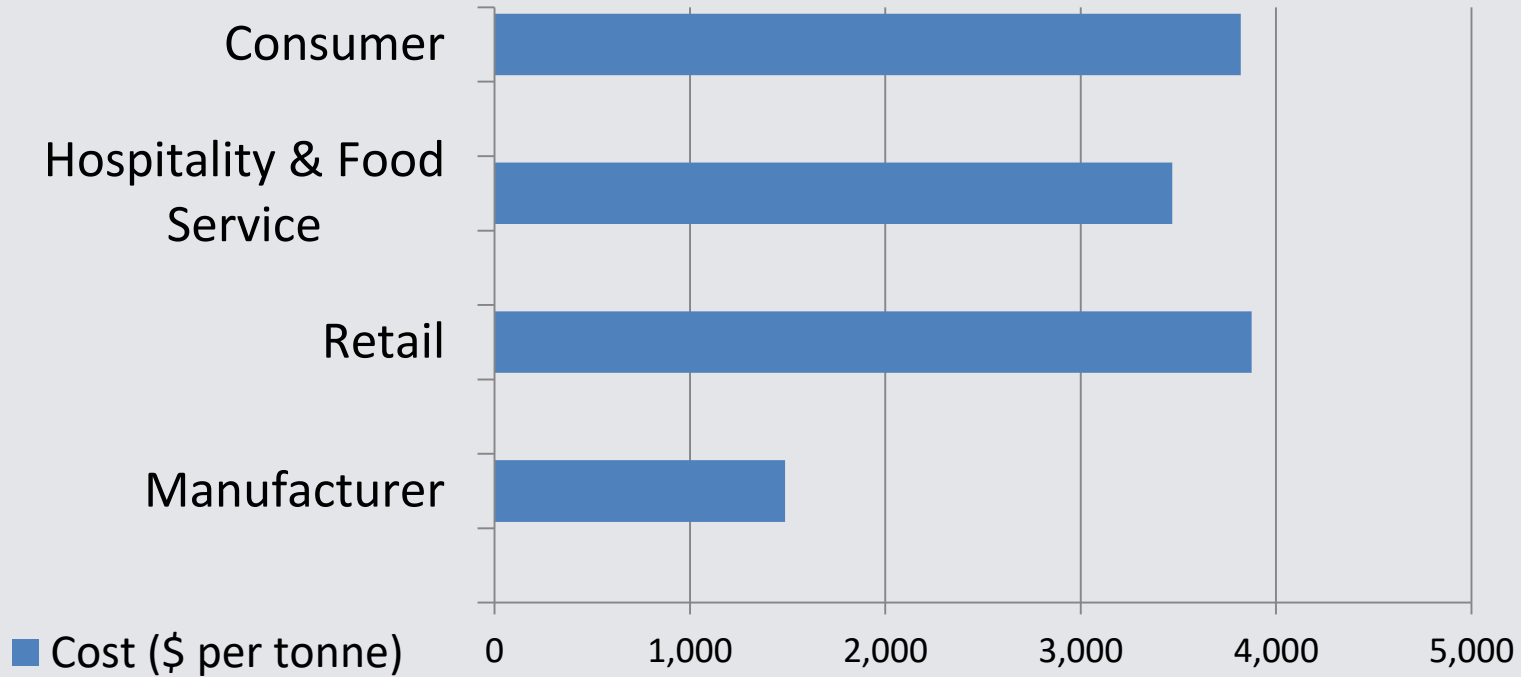
Visible costs

Invisible costs

- **Lost materials**
- **Energy costs**
- **Lost labour**
- **Other costs**

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

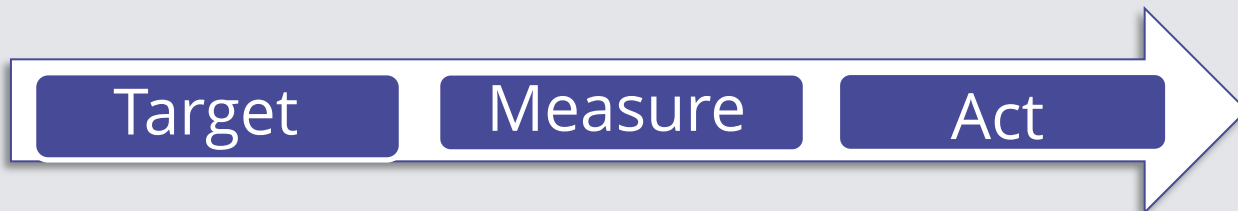
The true cost of waste

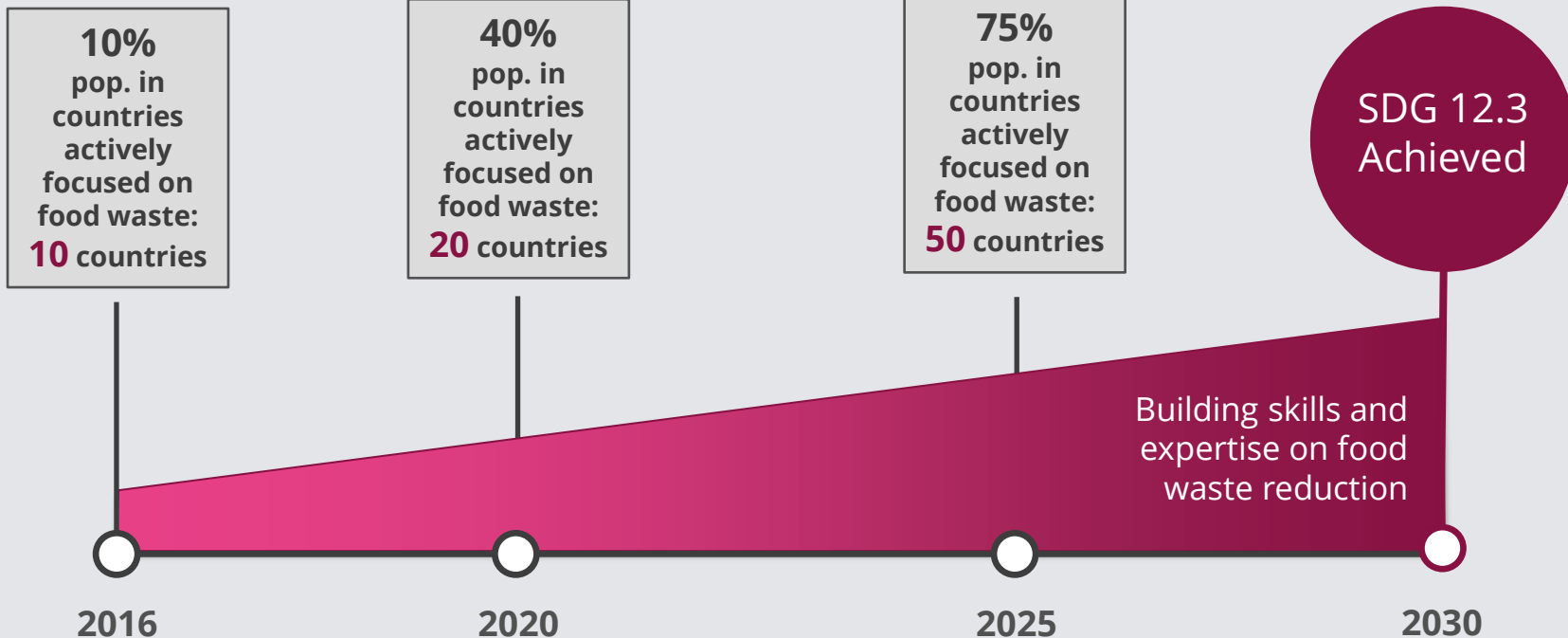


Source: WRAP (2016). Average UK cost of food waste including ingredients, storage, processing, cooking, and disposal.

Summary

- 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!





Questions?

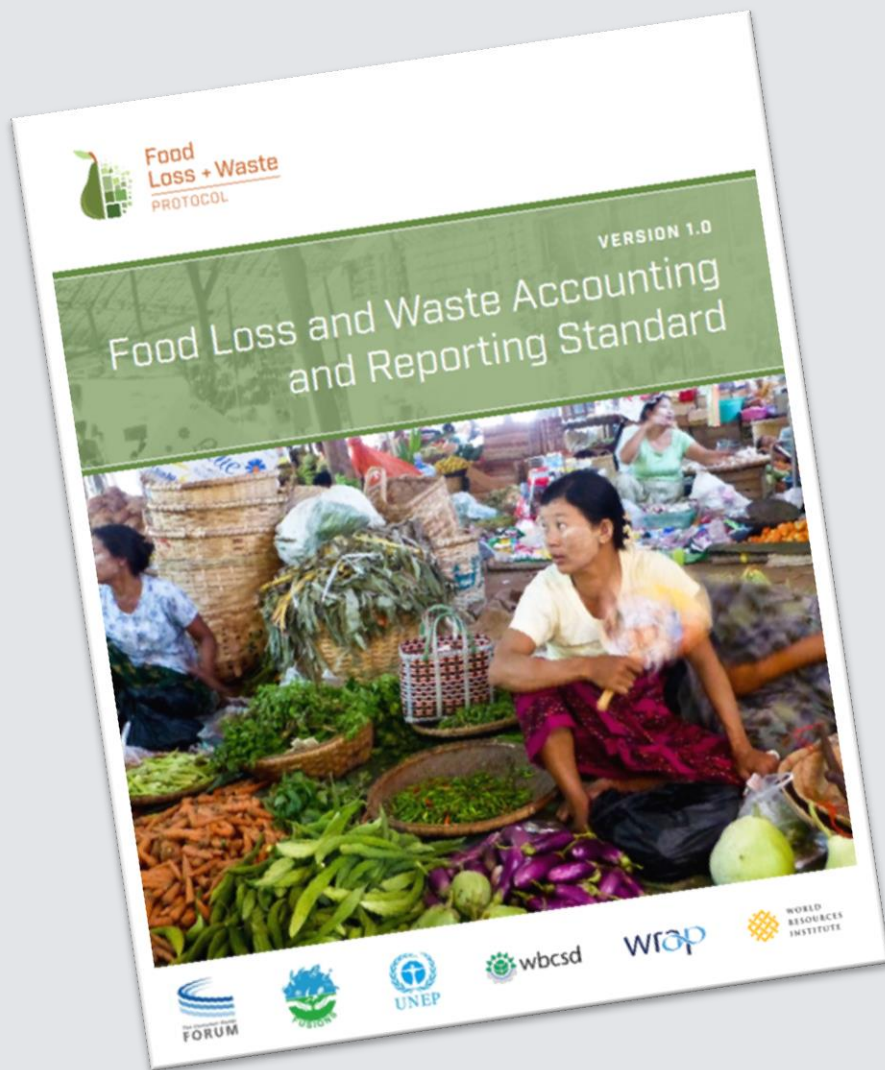
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**“If you can’t
measure it, you
can’t manage it”**