

Preventing Waste from Farm to Fork

Andy Dawe

Head of Food & Drink Programme, WRAP

18th April 2013

Content

- Why tackle food waste?
- Business food waste
- Household food waste
- International work
- Conclusions

About WRAP

- WRAP's vision is a world without waste, where resources are used sustainably

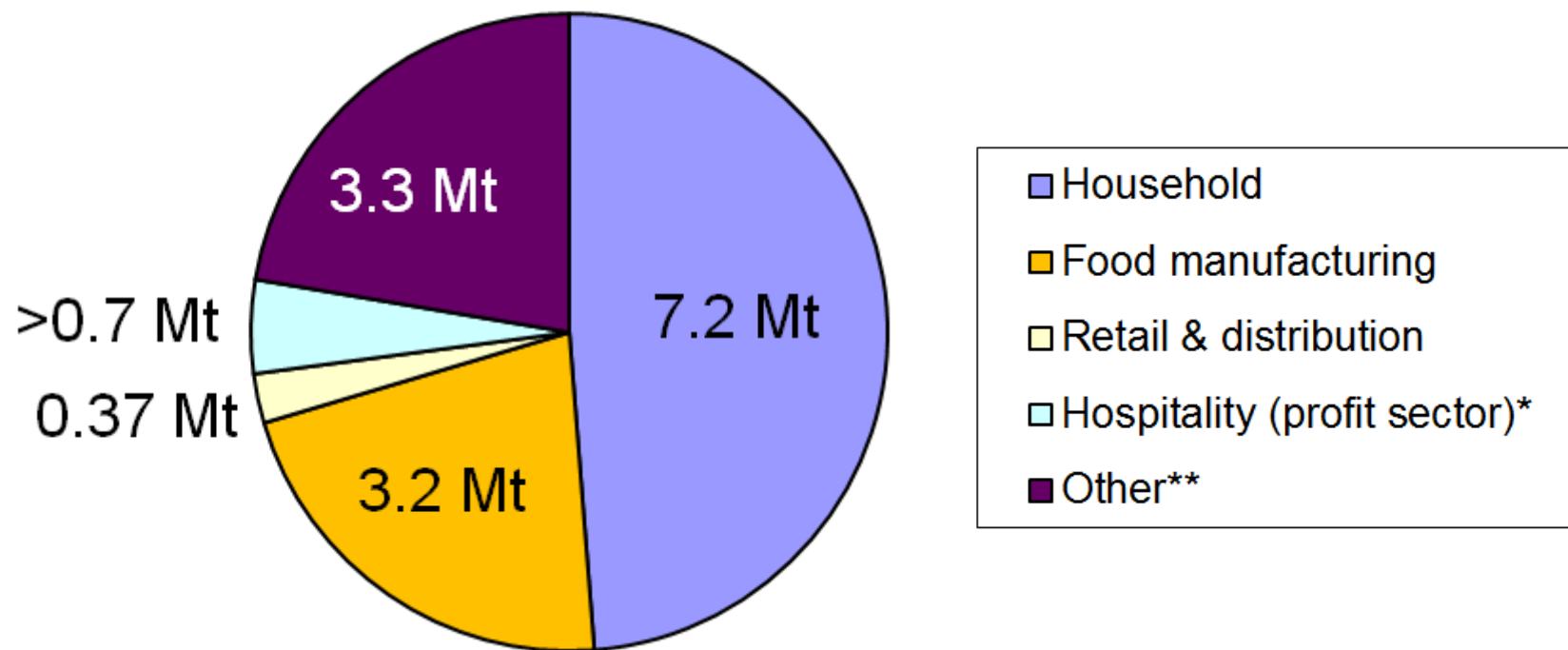


Global perspective

- Population set to increase from 7 billion to 9 billion by 2050
- Increasing affluence and aspirations
- Displacement of people and crops due to climate change
- Global food waste is 1.3 bn tonnes – one-third of total production

UK food waste arisings

- Households account for ca. 50% of total UK food waste (15Mt)
- 60% (4.4Mt) is avoidable



* This covers part of the profit sector, and schools; ** incl. other parts of the hospitality and food service sector, other out of home food waste, and pre-factory gate food waste; household figures updated October 2011. NB data for household also includes drink waste, which is not currently available for other sectors

Impact of UK Waste

- Household food waste - 20 Mt CO₂ eq/y
- Food and drink supply chain – 10 Mt CO₂ eq/y

- £12 bn for households
- £5 bn for businesses

- Food waste: 6,200 billion litres water/y
- Or 243 l/day/person

So what can we do about it?

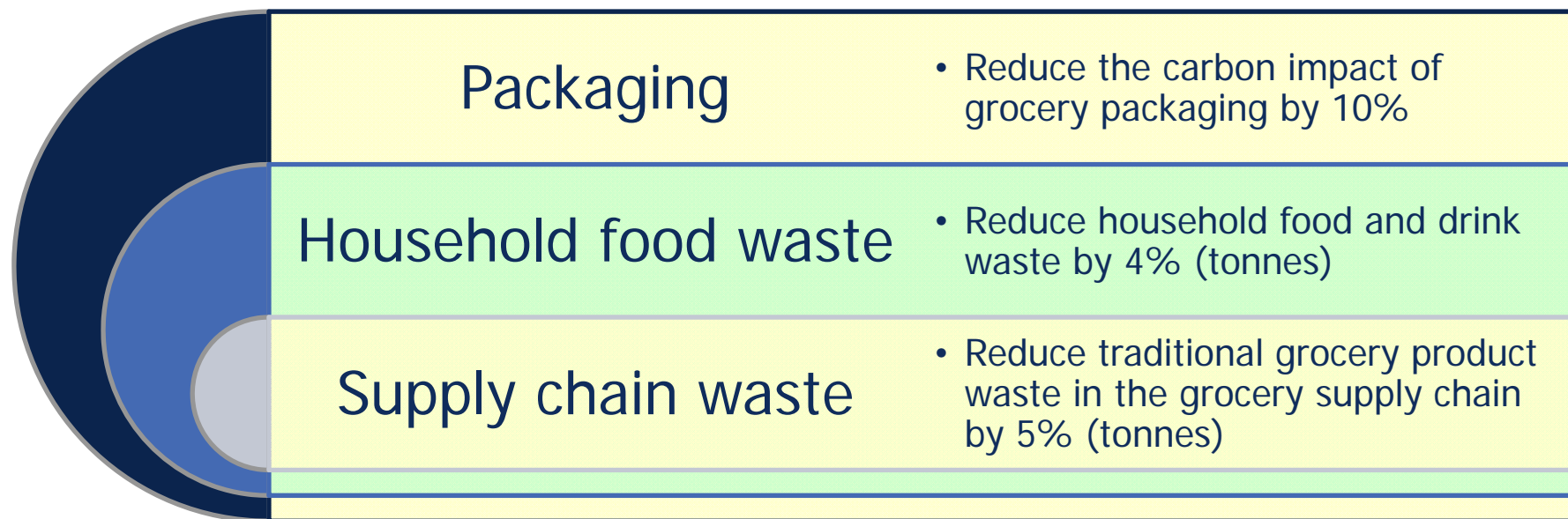


The background of the slide is a photograph of vibrant green maple leaves. The leaves are in various stages of focus, with some in sharp focus in the foreground and others blurred in the background, creating a bokeh effect. The overall color palette is a range of greens, from light lime to deep forest green.

Business food waste prevention

The Courtauld Commitment

- A voluntary agreement to improve resource efficiency and reduce the carbon impact of the UK grocery retail sector



WRAP

Material change for
a better environment

Courtauld Commitment Phase 2 Signatories



Courtauld Commitment 2 – progress after 2 years

Packaging

8.2% compared with 10% target

Household Food & Drink Waste

3% compared with 4% target (after 1 year)

Supply Chain Product Waste

8.8% compared with 5% target

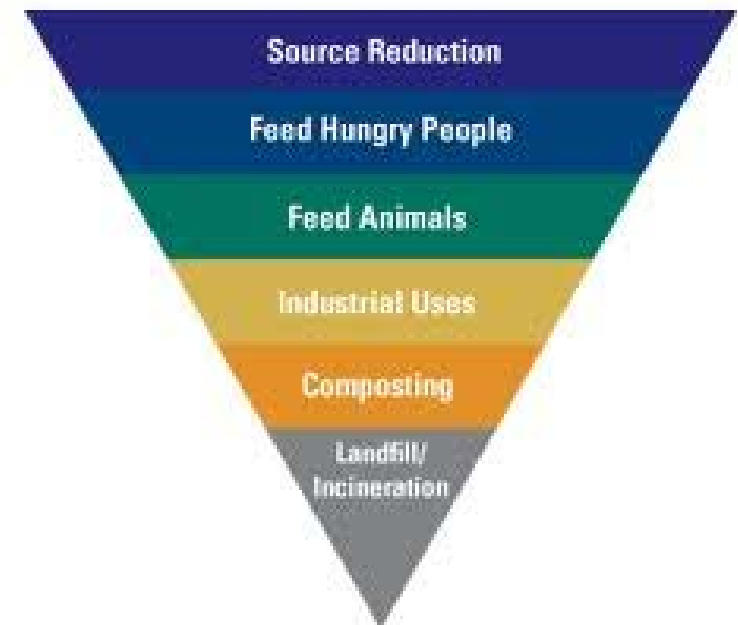
Supply Chain Initiatives

- Resource efficient procurement
- Product life extension
- Good practice in promotions management

Redistribution

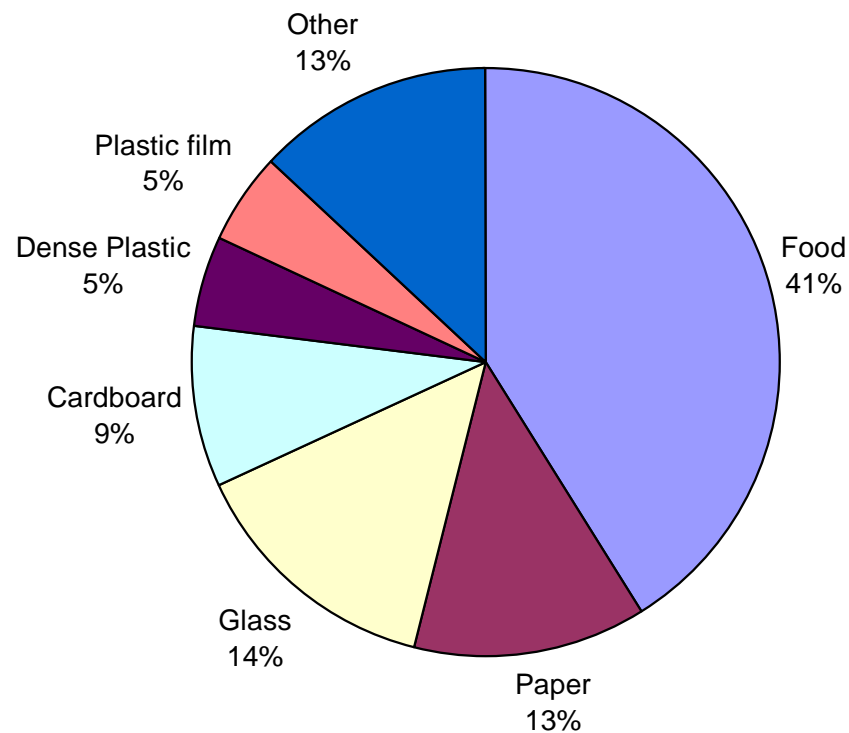


- 20,000t/yr surplus food redistributed
- Opportunity for growth
- WRAP work:
 - Trials with FareShare, FoodCycle retailers and local charities to improve efficiency and data
 - Industry working group to overcome barriers across the stakeholder groups



Hospitality and Food Service Agreement

Composition of mixed waste from HaFS sector



For organisations:

"... to work towards zero waste through actively encouraging staff, customers and suppliers to prevent waste arising and reuse and recycle more"

Voluntary approach

- Hospitality & Food Service Agreement launched in June 2012
- Over 141 signatories & supporters across whole supply chain
- 19% of sector
- Initial focus on measurement and baseline
- Online tools
- **Working groups established**

The background of the slide is a photograph of vibrant green maple leaves. The leaves are in various stages of focus, with some in sharp focus in the foreground and others blurred in the background, creating a bokeh effect. The overall color palette is a range of greens, from light lime to deep forest green.

Consumer food waste prevention

Consumer food waste prevention strategy

Changing consumer behaviour:

- Raising awareness & engaging consumers to act
- “Love Food Hate Waste”
- Partners

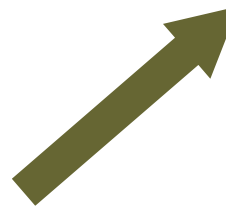
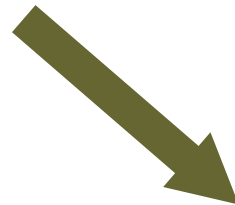
Making it easier for consumers to waste less:

- Influencing those selling food to change /improve products and practices to help consumers waste less





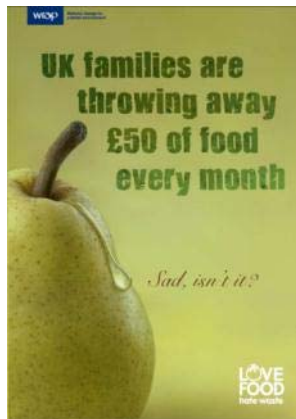
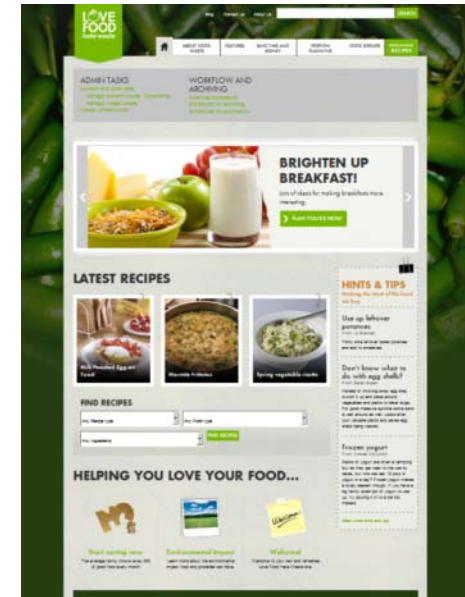
Direct to consumers



Via strategic
partners



Helping consumers to reduce food waste



Helping consumers to reduce food waste

Summary report

Helping consumers reduce food waste – a retail survey



A survey across UK retailers of a range of factors believed to influence household food waste for a selection of products.

Project code: RSC020-001
Research dates: January 09-October 09
Date: May 2010

Final Report

Understanding consumer use of the freezer



Executive Summary

Consumer insight: date labels and storage guidance

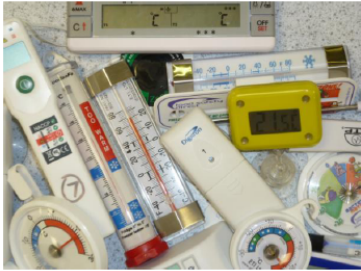


Consumer understanding and use of date labels and storage order to reduce household food waste.

22-010
January – December 2010
Date: May 2011

Final project report

A performance assessment of domestic fridge thermometers



A performance assessment of a representative range of domestic fridge thermometers was undertaken in a series of scientific experiments to ascertain the accuracy, resolution and responsiveness of the thermometers to a change in temperature. This information will be of use to those communicating to consumers about food waste and food safety, and those providing tools for sale or use by consumers.

Project code: RSC021-001
Research dates: April-July 2009
Date: October 2009

Part 1: Insights around the domestic refrigerator

Reducing food waste through the chill chain



An extensive study of consumer refrigerated food practices in the home and experimental measurements of refrigerated food temperatures during their transit from the retail store to the domestic fridge.

Project code: RSC007-003
Research dates: April-November 2009
Date: August 2010

Objective

To change the retail environment to help consumers:



Buy the right amount

- Pack size range and availability
- Promotions
- Planning / ordering tools



Keep what is bought at its best

- Packaging functionality, re-close
- Clear storage guidance
- In-home tools



Use what is bought

- Consistent, simple use of dates
- Maximum shelf life
- Portioning tools

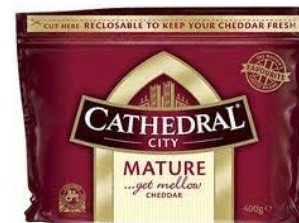
wrap

Material change for
a better environment

Buy the right
amount

Keep what is
bought at its best

Use what is
bought



Checking date labels

% respondents throwing the following away because they've gone past their date:

Bakery 19%

Yoghurt 14%

Milk 11%

Fruit 11%

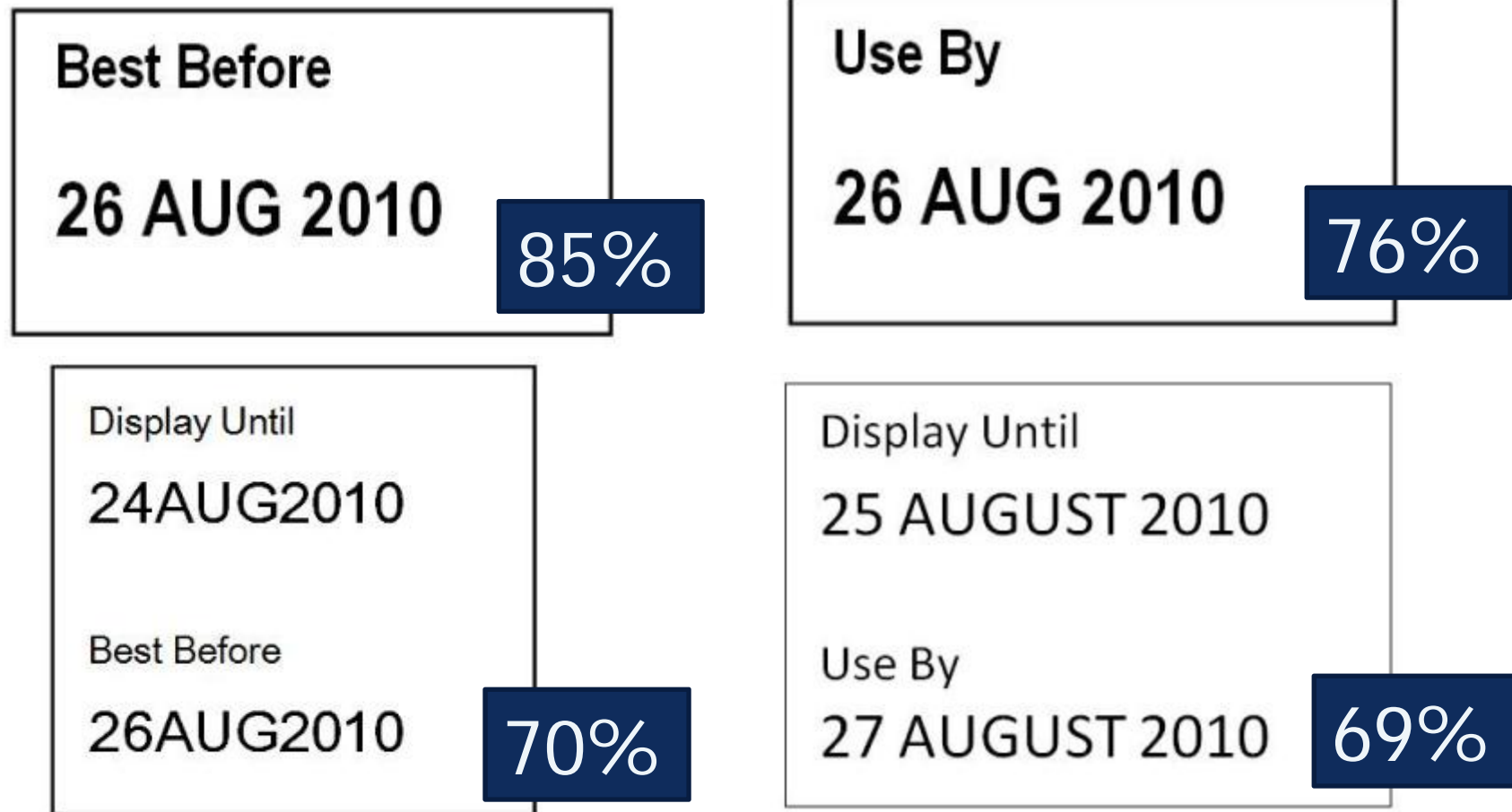
Vegetables 11%

Pre-cooked meat 9%

Fresh meat 7%



Presence of 'display until' lowers understanding



Old labelling – side of pack;
'display until' and 'use by'



New labelling – front of pack;
'use by' only



What is the Product Sustainability Forum?

- A pre-competitive, collaborative forum for those interested in quantifying, communicating and reducing product-related environmental impacts
- A platform for strategic discussions between business and government on product-related environmental issues
- An opportunity to learn, build capacity and share experiences
- An opportunity to grow or accelerate corporate or industry programmes

PSF research for 2012/13

Research & Evidence



Pathfinders

- *Real world trials*

Action plans x 20

- *Detailed exploration of specific opportunities*

Product summaries x 50

- *Accessible summary of key product hotspots, initiatives & opportunities*

Reduction opportunities

- *Shareable bite-sized opportunities to inspire action*

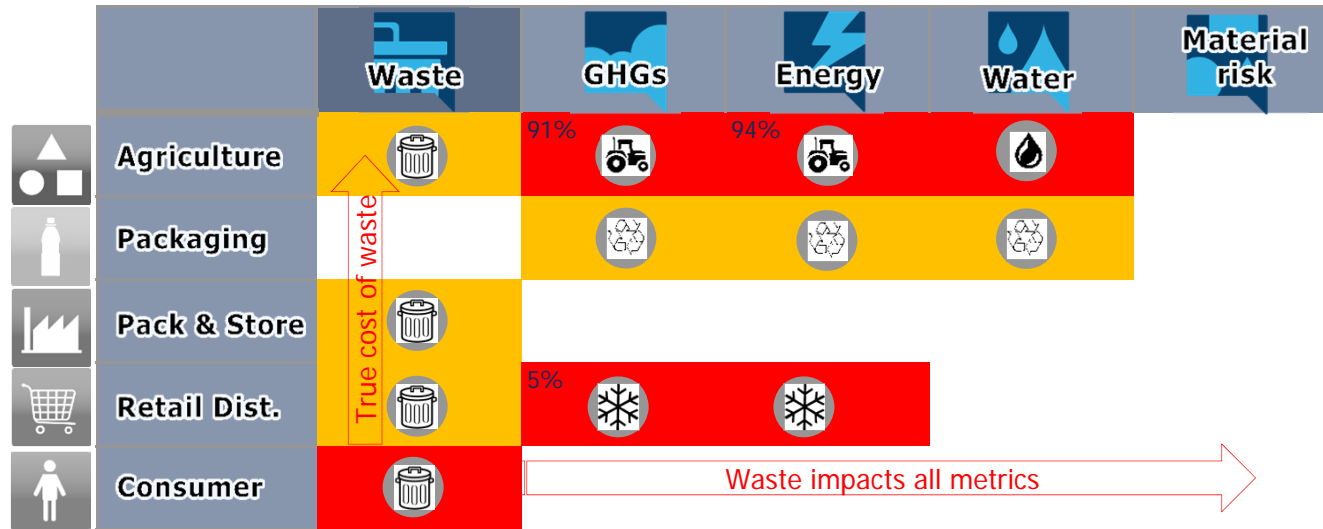
Outputs to drive change

Product summaries

- Engaging, shareable summary of 65 products
- Includes: Hotspots, reduction opportunities
- Aimed at wide range of business functions
- Use in meetings, workshops, training ...
- PowerPoint format



Hotspots – Tomato



Notes

- Numbers below denote reference (in [resources](#))
- Hotspots will depend on production system: northern European indoor heated vs. outdoor/protected in warmer climates
- Glasshouse energy demands can be reduced through use of Combined Heat and Power (CHP) or waste heat (7)
- Water impacts within the agricultural stage can also vary significantly as a result of different irrigation practices with traditional production methods using double the amount of water than hot house systems

Notable primary & secondary hotspots

- Gas & electricity** for heating (glass houses only) and **fertilizer** use (1,2,6)
- 63,000 tonnes of tomatoes are **wasted** per year in the home (7)
- Long distance **chilled distribution** for fruit produced in warm climates (4,6).
- Loose packed, PET clamshell or PS trays commonly used (1, 4)
- Irrigation** of tomatoes during growing dominates life cycle water use (4)
- Aesthetics influence **spoilage** rates within the supply chain (6)



Reduction opportunities

Bite-sized inspiration – included in product summaries

Includes: Case studies; business benefits; sign-post to best resources, initiatives

30 selected to focus on priority products and key hotspots across a range of metrics

Drinks packaging optimisation
Product sustainability opportunity #26 Hotspot

The key business drivers for addressing packaging sustainability include the increasing cost of raw materials and concerns over security of supply. Common approaches include use of recycled content, packaging weight reductions, product concentration, and reusable systems.

How to get started

1. Think about breaking the mould - can the product be used by the customer differently? (See WRAP evidence on [Packaging Design](#) for more information)
2. Get ideas from [The Innovation Hub](#)
3. Read the WRAP [Packaging Innovation Guide](#) for best practice technology and best practices
4. Make it happen - stay close to what your sector is doing. View [case studies](#) under 'Circular Economy 2'

Other key resources & initiatives

- [Soft Drink Makers Association](#) - Sustainability Strategy includes focus on water, packaging & waste
- [Soft Drink Makers Association](#) - Data-funded research currently under way; includes focus on packaging
- [WRAP Evidence](#)
- [WRAP Innovation Hub](#)
- [WRAP Evidence](#)

Case study – Britvic concentrate

The double concentrate squash is now in 1.25 litre and 1.75 litre bottles and features an innovative new pour grip handle. These design changes help consumers avoid spillage and ensure that they use the right dosage to reduce waste. The smaller bottle sizes have also enabled a significant reduction in secondary packaging, & better consumer value for money.

- 61% reduction PET per 100ml litre
- 30% reduction in tonne transport
- 14,000 CO2e avoided per year

Boiler energy efficiency
Product sustainability opportunity #06

Boilers play a central role in food and drink manufacturing, consuming up to half of total fuel in the sector (1). The key business driver for addressing boiler energy efficiency is the increasing cost of energy. Common approaches include: regular maintenance, looking at the potential for recovering waste heat and boiler replacement (see hierarchy below).

Boiler energy savings hierarchy

Cost ↑

- 1. Boiler replacement
- 2. Flue gas/boiler-bow down heat recovery
- 3. Monitor energy use, carry out boiler maintenance

(Adapted from Carbon Trust 2012)

Other key resources & initiatives

1. [JAG - Energy efficiency in food](#) website highlights boilers as key energy user in grocery sector
2. [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
3. [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
4. [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
5. [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
6. [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills

Case study – Heinz

The Heinz manufacturing has achieved impressive energy gains through getting their boiler house operations energy efficient to +90% by installing a steam trap maintenance and developing regular steam trap maintenance. The benefits:

- 9,000CO₂e reduction p.a.
- Payback period of 18-19 months
- Steam trap maintenance alone gives a cost return of 10% and CO₂ savings of 884t p.a.

Other key resources & initiatives

- [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
- [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
- [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
- [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
- [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills
- [Carbon Trust](#) - Boiler replacement for energy intensive industries which offers reductions in energy bills

Production Hotspots Opportunities Resources Help

Action Plans

More detailed (PDF)

Provide the information needed to build
the internal case for change.

Benefits

Step-by-step implementation

Overcoming barriers

Guidance and tools

Audience: manufacturers and retailers

Each one developed with expert input from
industry to ensure relevance



Objectives of Pathfinder projects

Target priorities and gaps identified

- Adding value, not duplicating effort

Test potential solutions

- Scale of benefits (environmental/financial)
- Barriers / trade-offs / unintended consequences
- Transferability of different approaches
- Replicable processes
- Guidance / tools / training needed
- Opportunity and route to mainstream

Current Status

- Range of projects proposed as part of first call for ideas (launched or being further scoped)
- Examples:
 - Whole chain waste prevention & resource efficiency (potatoes, chocolate)
 - Temperature control & optimisation in fish SC
 - Support to implement a Soft Drinks Roadmap
- Further projects will be developed over 2013 to address gaps & priorities identified within the current PSF research programme

About FUSIONS

- Working towards achieving a more resource efficient Europe by reducing food & drink waste
- August 2012 to July 2016
- European Commission framework programme 7
- 21 project partners from 13 countries

www.eu-fusions.org

Twitter - @EU_FUSIONS

Facebook - EU-FUSIONS



wrap

Material change for a better environment

FUSIONS partners



University of Natural Resources and Life Sciences, Vienna



Tristram Stuart
WASTE



COMMUNIQUE ANATOLIKI



HACETTEPE UNIVERSITY
To the leading edge... Toward being the best...



Forthcoming activity

- EU-wide literature review, leading to recommendations for:
 - definition / scope of food waste
 - quantitative techniques
 - causes / trends in arisings
- Social innovation feasibility studies ideas survey
- Regional meetings Spring '13
- EU-wide meeting Autumn '13
- Contact Sophie.Easteal@wrap.org.uk

UNEP Think Eat Save campaign

- Global food waste campaign launched Jan '13 in partnership with WRAP and UN Food and Agriculture Organisation
- WRAP developing a blueprint for Govts, NGOs and businesses to pilot within developed and developing economies
- Plan to launch on World Environment Day in June



Concluding remarks

- Food and drink resource efficiency remains a high priority for WRAP and our funders
- Global action is now starting to be coordinated
- Partnerships with business and NGOs are vital for success



wrap

Working together for
a world without waste

Thank you