The second of four presentations that support the UK grocery sector in becoming more resource efficient.

1. Why waste prevention makes good business sense.
2. Manage and measure supply chain waste.
3. How to see waste in the supply chain.
4. Driving waste out of your supply chain.
This presentation is about the management and measurement of waste.

After defining supply chain waste we will look at who should be responsible for waste prevention.

Waste prevention is everyone’s responsibility across the business and should not be seen as just a CSR or similar team issue.

We will address some of the reasons why waste management might not be given a high profile within the business.

Measurement of waste is key to understanding its root causes and for the development of management action. We will look at how to get started by showing how leading companies have done their research.

---

**Overview**

- What is supply chain waste?
- Who is responsible?
- Barriers and challenges
- How to measure and prevent waste
- Conclusions
Estimated total waste arising from the UK food and drink chain is 15m/t. Household waste accounts for 7.2mt of the total. Total waste at food retail, distribution and manufacturing totals some 6.6m/t.

Waste arises in all parts of the supply chain – the largest quantities are in manufacturing and the least in distribution.

The data are the best estimates we currently have (and cover a mix of time periods). Further research is underway including to quantify liquid product waste disposed of via the sewer.

The total waste arising represents a financial cost to the businesses as well as a loss of all the embedded carbon (energy) and water.

There is much that individual companies/sites can do to prevent waste, but an integrated approach to waste prevention within the supply chain is likely to be most effective and is what WRAP advocate.
Waste arises at all stages of the supply chain. Some waste can arise within a company boundary while other waste arises when product flows between supply chain partners.

The diagram gives some examples of waste for example yield losses/secondary packaging and illustrates the mounting costs of adding value to product and packaging material along the supply chain.

So waste might arise because:
Damage – e.g. cans dented in handling.
Expired – e.g. high levels of inventory to protect service levels.
Obsolete – e.g. discontinued promotion packs/labels.
WRAP estimate that waste in the supply chain is costing food retailers and manufacturers £5bn annually.

This estimate is based on the best available evidence we have:
- Cost of waste (£ per tonne) Manufacturing = £500
- Cost of waste (£ per tonne) Distribution = £1,088
- Cost of waste (£ per tonne) Retail = £1,676

Like all efficiency improvements, waste prevention generates savings that drop straight to the bottom line. Savings go much deeper than disposal costs (which are increasing) – like an iceberg, the true costs are hidden.

For every £ of waste lost at least 20% more sales (assumes a gross margin of 25%) are required to generate this as profit – not easy in the current economic climate.
A supply chain waste prevention target was included in the second phase of the Courtauld Commitment voluntary agreement.

The target is focused on waste prevention – to reduce product and packaging waste in the grocery supply chain by 5% (includes both solid and liquid wastes).

The target covers waste of product and raw materials as well as packaging, from factory in gate to retail point of sale.

The target only covers waste generated in the UK.

Signatories report in tonnes per year the various waste flows shown (in red or yellow).

Household waste beyond the retailers till is addressed by a separate Courtauld Commitment 2 target.
Who is responsible?

Everyone in the supply chain has a role to identify and eliminate waste

- Procurement
- Goods inwards
- Processing/operations
- Dispatch
- Distribution
- Facilities
- NPD
- Marketing
- Sales
- IT
- Customer

Source: XG Research

Waste can occur at any stage along the supply chain.

Waste takes many forms; wasted time, effort, energy, water, raw materials, in fact anything that has a cost can be wasted.

Therefore waste is the responsibility of everyone in the organisation.

The organisation should establish a waste prevention culture where all types of waste are identified and challenged.
Waste policy and strategy is often led by the CSR teams in major food companies.

Research by the IMD Business School on aspects of sustainability has shown that almost half the food companies responding saw sustainability as an issue for external affairs department.

While external reporting is important waste prevention is very much an inward looking operational issue which affects all parts of the business.

Waste prevention requires business wide management support.
All major business functions can cause supply chain waste.

Brand/Category managers will impact on range decisions – how many products do you produce/list; do a small number of these contribute to the majority of sales; does the range tail add significantly to waste.

Operations managers will control the major production or logistics processes. How is continuous improvement (small scale/shop floor change) implemented and communicated; is there a systematic approach like ‘lean’ management techniques.

Supply chain managers – how is forecasting conducted with supply chain partners; are orders and production as closely aligned as possible?
Here are some of the reasons why your business may not want to take waste seriously. Below are quotes from IGD research.

- Management think waste prevention just happens as business as usual.
- No visibility for the consequences of decisions on waste levels.
- We are dazzled by spotlights on the great work to light-weight packs or by the use of plant-base packaging to reduce household waste.
- We are busy, let’s leave it to the sustainability team who have time.
- We are cautious to open up a whole can of worms with colleagues let alone trade partners.
- We are busy diverting waste to avoid landfill tax.
- We are cautious about talking of issues that can too easily be misunderstood and damage reputations.

There is a strong financial case for change that many companies have benefitted from.

The starting point is clear lines of responsibility and good data on which to base decisions.
Barriers and challenges

- Supply chain waste is cross-functional. Functional barriers must be broken down to get at the true waste picture
- Inconsistent definitions. Waste vs. revenue stream
- Sensitivity to data, competition, internal politics
- Costs are hidden in allowances, standards, custom and practice

Source: IGD Research

The supply chain passes through many functions in an organisation. The traditional functional barriers must be broken down to ensure that the true waste picture is established.

Only when the barriers have been removed can the correct solution be found. Solving a waste issue in one function must not lead to an increase in another waste.

Waste must be seen as waste and not as a revenue stream. Recycling and reuse will always yield less than the value of the material.

A culture must be established where open and accurate reporting of waste is encouraged to ensure the right issues are tackled. Traditional waste allowances and standards should be challenged and reduced year on year.
Its about establishing change in the business. Follow change models like ‘plan-do-check-act’.

Start with the Board – with a senior Director as the champion, someone who agrees that waste prevention is a priority.

From the Board a policy should flow – agreed internally with the senior management team and externally in collaboration with supply chain partners.

The business case to the Board can be based on the financial benefits of waste prevention.

Identify the metrics needed to make informed decisions and design a system to collect and collate the necessary information.

Remember - what gets measured gets managed.

Supporting structures – individuals and departmental plans will be required to support the policy.

Learn from others, e.g. Tesco’s approach – use Rapid Action Teams to solve problems and create improvements and, in this way, build confidence based on real results.
Best to tackle waste in bite-sized pieces so focus on specific products (or product families) and specific parts of the supply chain.

It is highly probable that a few products/processes will be responsible for a disproportionate amount of waste.

You will need to collect and analyse data most likely from a variety of sources.

Think about:
Location - Site level, Regional/State level, National level.
Product - Item, Brand, Supplier, Category.
Metric - Value (£), Volume (Tonnes) and Intensity (%).
Regularity of occurrence - daily, weekly, monthly, quarterly, annually.

At this stage a more detailed focus through value stream mapping can be helpful – (see separate presentation in this series.)
Good data underpins waste prevention. 

There maybe published data that you could use as a starting point – the chart shows a ‘resource map’ published by WRAP; these cover fruit and vegetables, fresh meat and fish with other sectors to come. [http://www.wrap.org.uk/sites/files/wrap/Supply%20Chain%20Research%20Listing%20Apr%20202012.pdf](http://www.wrap.org.uk/sites/files/wrap/Supply%20Chain%20Research%20Listing%20Apr%20202012.pdf) 

But there maybe no substitute to obtaining data from company sources. 

The bulk of the information should be available from IT systems but will generally be available at item level or financial value. 

Waste management companies will have volume data you could access. 

In order to make the data useable and comparable it will need to be in a consistent format - tonnes is the preferred metric and widely used for reporting. 

The method to get into tonnes will probably follow one of the following paths:

- System units will be calculated by weight and calculated back to tonnes.
- Value of waste vs. the tonnage recorded by waste contractors. This will give a rough estimate of value of waste and how it works back to tonnes.
Some suggested KPI’s (Key Performance Indicators) intended for manufacturers are shown in the table.

These are based on measures used by companies taking part in waste prevention reviews.

The establishment of KPI’s drives an effective data management system.

It is important to measure intermediate stages in waste creation. So measuring overall waste created on site is good for benchmarking but may not be useful in finding specific causes of waste.

Recognising the contributors to waste and measuring both the specific causes (breakdowns, quality defects, inaccurate forecasting) and inherent causes (poor line set up, ineffective packaging) in realising resource efficiency.

The data needs to be visible to shop floor personnel to highlight to colleagues the benefits achieved.
This example shows how one company taking part in ECR-UK waste prevention programme linked its data sources to measure waste.

Typically you might find as this company did:

- Waste weight data is not collected. There was no check on the waste collection expense or a breakdown of weight by depot. Units and write off cost only were measured.

- Streams of waste were measured overall but had not focussed on what was happening to the waste after the company absorbed the cost of write off.

- Different departments looked after different parts of the waste streams so there was no coordinated end to end impact and cost.

Put simply the company linked data from its waste contractors with a product master sheet and case quantities - it was done by one individual familiar with spread sheets!

We hope that this example helps you to understand how at least one company was able to measure waste from unpromising beginnings.
The idea is to show KPI data visually and accessibly.

There is a strong correlation between effective communications with shop floor personnel and good organisational performance.

The messaging on such boards needs to be brief and to the point.

All too often sites don’t have information/data posted. Without display how do colleagues know whether its been a good day?
Conclusions

- There is a strong financial case for preventing waste
- Use the information, tools and case studies provided by WRAP and its partners
- Start to identify waste – challenging status quo
- Consider collaborating with your supply chain partners on the major waste issues facing you (collectively)
- Tackle waste in bite-sized chunks – focus on specific products/sites/suppliers – and prioritise the top opportunities
- Use the best data that you can find or generate: this underpins good management decisions
Waste Prevention Reviews – WRAP funded bespoke and confidential to your company. Other reviews are available – covering food, products and packaging, e.g. the Ten Pack Review.

Information – WRAP projects looking at resource efficiency across the grocery retail supply chain, from factory in-gate to final disposal by the householder.

Key issues - WRAP has brought together a working group of food and drink manufacturers for example which is seeking to review Production Ready Packaging to reduce the waste arising in their factories.

Case studies – WRAP has case studies drawn from the grocery sector and access to many others.

Research – WRAP funded technical projects to facilitate break-throughs and innovation.
For further information about resource efficiency please visit: www.wrap.org.uk/supply_chain and www.wrap.org.uk/retail.

While we have tried to make sure this material is accurate, we cannot accept responsibility or be held legally responsible for any loss or damage arising out of or in connection with this information being inaccurate, incomplete or misleading. This material is copyrighted. You can copy it free of charge as long as the material is accurate and not used in a misleading context. You must identify the source of the material and acknowledge our copyright. You must not use material to endorse or suggest we have endorsed a commercial product or service.