Managing the balance between food and packaging waste

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About me...

- PhD in ‘Managing the incorporation of consumer food waste into packaging development’

- Food waste consultant
  - Independently
  - United Nations, Food & Agriculture Organisation

- Public engagement & consumer behavioural change

- Associate practitioner of IEMA and partway to MSc in Nutrition
Agenda...

- Why do we need to consider the environmental balance between food and packaging waste?
- How do we consider this?
- How does this affect Retailers?
“Product packaging system”

Finding the functional and environmental balance between reducing food waste and overpackaging

(Verghese & Lewis, 2015)
We must change for the ENVIRONMENT. There is no WE
But it’s biodegradable!

- As food waste breaks down its emits massive amounts of methane
- 28-36x more potent than Carbon Dioxide
- 1 tonne of food waste = 1010kg CO2e

This is the equivalent of driving 2,434 miles

This is nearly 3 times the length of the UK
In fact – if food waste were a country it would be the 3rd largest producer of Greenhouse gases

(WRI, 2015)
How does this compare to packaging’s impacts?

Greenhouse gas distribution between food consumed, food wasted, and packaging materials of meat, fish and eggs, dairy, and fruits and vegetables for a 4-person household over 1 week (Verghese et al, 2014)
How does this compare to packaging’s impacts?

<table>
<thead>
<tr>
<th>Food item</th>
<th>Food GWP (CO2 Equivalent per kg of food)</th>
<th>Packaging GWP (CO2 Equivalent per kg of food)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bread</td>
<td>600</td>
<td>30</td>
</tr>
<tr>
<td>Beef</td>
<td>14000</td>
<td>150</td>
</tr>
<tr>
<td>Cheese</td>
<td>8500</td>
<td>44</td>
</tr>
</tbody>
</table>

Global warming impact of bread, beef and cheese measured in CO2 equivalent per kilogram of food (Williams & Wikstrom, 2010, pp. 406)
GWP comparative of PPS when food waste is lowered through increased packaging
(Williams & Wikstrom, 2010)
How about energy use?

- 1 slice of bread = more energy than all packaging

- 9x increase in the energy used to create packaging is environmentally justified if 10% reduction in cheese waste.

- However, ketchup was an exception.
Studies also examine other environmental impacts such as eutrophication & acidification.

But not plastic pollution.
The removal of food packaging has also been linked to:

- Need for lower temp supply chains (Refrigerated vans, warehouses etc – energy use)

- Higher levels of food waste (Increased GHGs, strain on the agriculture system, deforestation, water waste, energy waste etc.)
Don’t fall in to the food trap
How can this be put in to place?
Aka ‘what’s stopping us?’
Changing the mindset of a decade (or two)

- Reactive environmental strategies
  - Who are your key stakeholders?
  - What are their environmental demands?
  - Company strat > new product strat
  - Concerns retailers from NPD & Product portfolio perspective

- See the business case as well as the environmental one
  - Reversing packaging progress seen as loss of investment
  - Project costs can increase
  - Concerns about stakeholder reactions
Changing the mindset of a decade (or two)

Example of old style of soup packaging

New soup packaging
Working it in to the design process

- Food waste being deprioritised
  - Who is responsible for packaging reduction in your product development process?
  - How about food waste?

- Integrate product and packaging development
  - Include packaging suppliers from the start
  - Avoid stripping food waste because of tech issues/costs
Summary

- Food waste growing issue of concern
- Need to make this of equal priority to packaging
- Focus on Product Packaging System
- Lifecycle perspective
- Within companies:
  - Support integrated PPS development
  - Cultivate proactive environmental stances
Questions

- Have you got any products with a food waste focus currently on market or in production?
- What positive steps have you taken to making food waste a priority in your product portfolio/product development?