Reusable packaging systems in the groceries sector

Measuring impacts and outcomes

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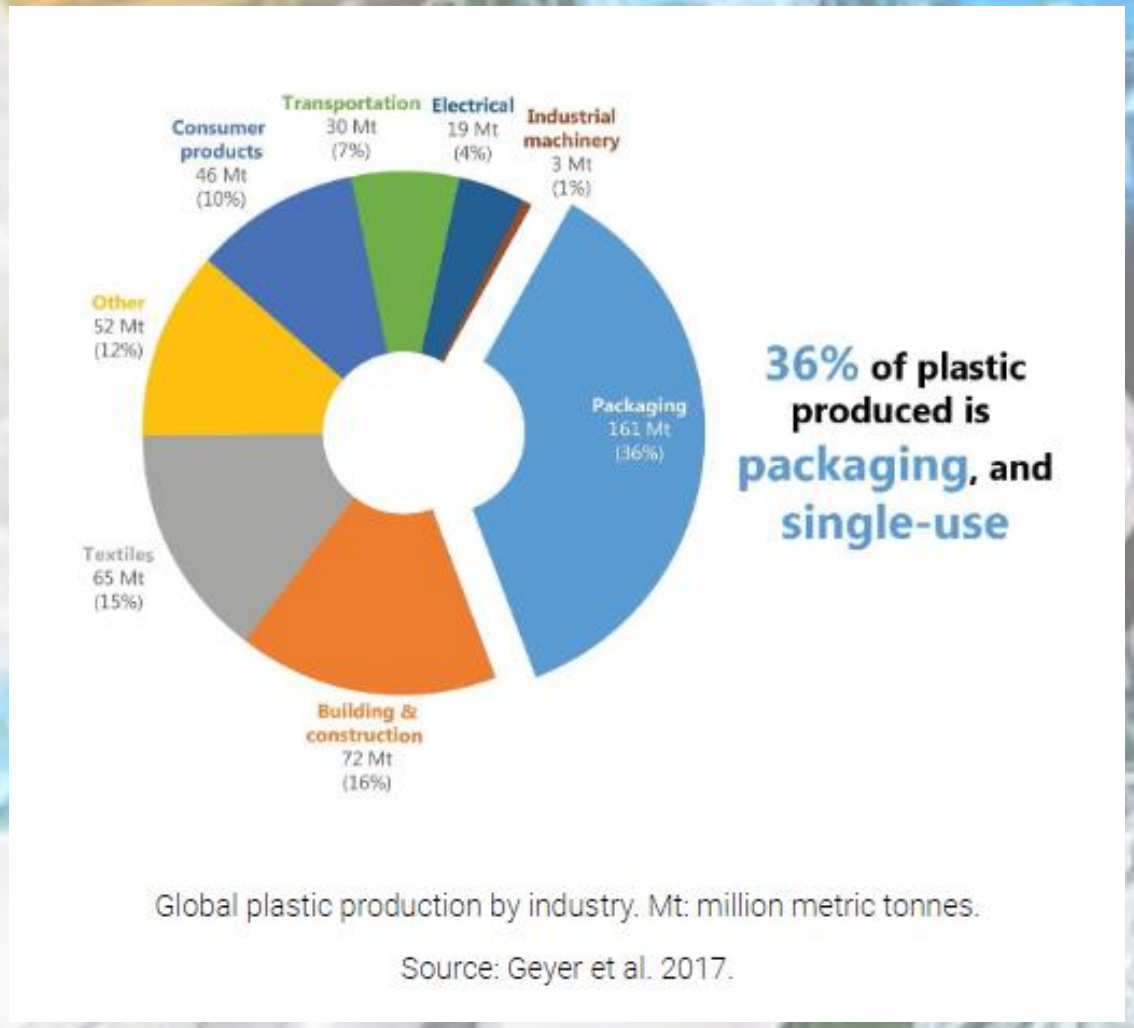
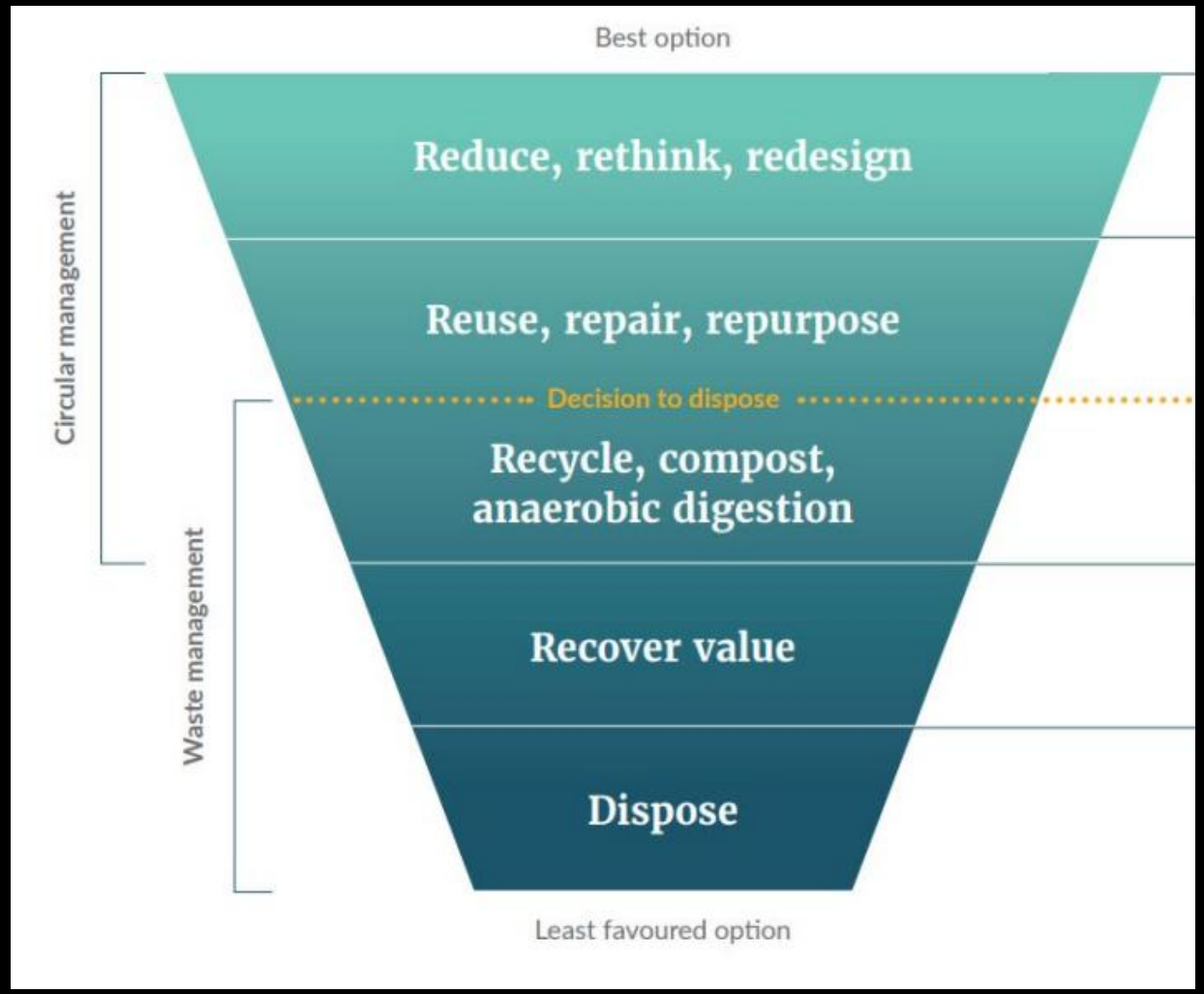


Global plastic production by industry. Mt: million metric tonnes.

Source: Geyer et al. 2017.

“Single-use packaging dominates supermarket food packaging almost completely”

Source: United Nations Environment Programme 2022, p. 53



Reusable packaging systems:

- Small, but growing area of research
- Potential to reduce demand for single-use packaging and tackle the plastic, waste and climate crises
- Already exist, but are often niche and precarious
- Mainstreaming requires major shifts across supply chains, manufacturer, retailer and consumer behaviour

Reusable packaging systems: Impact measurement

Why?

- Few studies on impacts of reusable packaging systems and none in NZ
- Existing studies very technical with a narrow focus
- We need evidence to justify investment in reusable packaging systems

Our research:

- How to measure the real-world impacts of current reusable packaging systems in New Zealand's groceries sector, compared to single-use packaging systems across a range of indicators (environmental, social, economic, cultural)?

What is reusable packaging?

1. **Durable**/sturdy packaging that is

2. **refilled multiple times** (in existing form)

3. with the **same type of product** for which it was originally designed

4. in a **system of reuse**

What is single-use packaging?

Reusable packaging

Exists for:

- Primary packaging

- Secondary packaging

- Tertiary packaging

Three main categories:

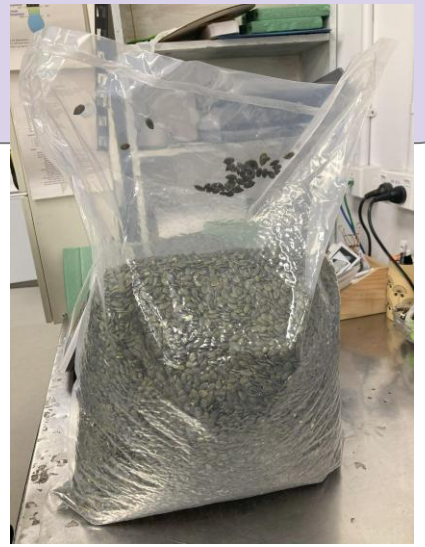
1. Returnable

2. Refill by bulk dispenser

3. Transport/transit

A bit more detail about reuse in a refill by bulk dispenser system…

The primary bulk packaging



In-store bulk dispenser

The empty packaging the customer fills into

Retailers

Implementing reusable packaging systems at scale in the groceries sector requires retailer participation → “gatekeepers”

Grocery retailers based around reusable packaging rather than single-use packaging are quite different business models

A study into reusable packaging systems in the groceries sector requires study of the impacts/outcomes of the retail contexts in which those packaging systems operate, as well as the packaging systems themselves

Methods

Focused on 2 regions – Waikato and Wellington

Compared 6 target products in single-use and reusable packaging

Through a literature review and parallel study on te ao Māori perspectives on reusable packaging, we identified 7 impact indicators to measure:

- Environmental/health: Packaging is avoided
- Environmental/health: Packaging systems protect human health
- Environmental/health: Food waste is avoided
- Socio-economic: Accessibility (cost, ease, availability/options) of groceries is increased
- Socio-economic: New, quality jobs are created
- Socio-economic: Enhanced community wellbeing and engagement
- Cultural: Collective wellbeing is improved

Methods

- Reviewed publicly available data on 6 products (prices and packaging)
- 11 interviews, or emailed information with retailers and suppliers/manufacturers
- Online and hard-copy survey of customers at participating retailers
- Reviewed publicly available socio-economic data from selected retailers in Waikato and Wellington to inform accessibility analysis

But - significant limitations!

Environmental/health indicator 1: Packaging is avoided

Returnable reusable packaging systems:

- Packaging reduction depends on the number of times it's actually used
- Need greater consistency on measuring returnable packaging reuse rates in NZ

Refill by bulk dispenser:

- Significant waste avoidance impact if customers BYO containers or retailers offer repurposed glass jars
- Waste avoidance impact is especially reduced where returnables exist in the supply chain

Environmental/health indicator 2: Packaging systems protect physical health

Packaging units (observations):

- B2C returnable packaging all in glass whereas single-use alternatives ordinarily plastic
- RBBD: consumer containers often paper, some retailers use donated glass jars. Primary bulk packaging usually paper or plastic, bulk bins usually plastic, but larger quantity of product potentially means less contact of product to package
- Returnable primary bulk packaging usually plastic - the health risks and mitigation measures need more exploration

Health risks and how they are managed (interviews):

- Participants very aware of hygiene & food safety risks of all packaging systems, thorough protocols, regulated & audited by external agencies (MPI/council food safety inspectors) - public concerns more perceived than real
- Most participants aware of avoiding single-use plastic packaging, but framed from environmental perspective - connections between plastic pollution, climate change and health not made.
- Very limited mention/awareness/protocols about health risks of particular materials

Environmental/health indicator 3: Food waste is avoided

- No participants were measuring product waste or could quantify it based on packaging system
- Participants operating reusable packaging systems used different strategies to reduce product waste
- RBBD allows customers to buy exactly what they need, potentially reducing consumer waste
- Further research needed on how packaging impacts patterns of product waste in households

Socioeconomic indicator 1: accessibility (product price)

Socio-economic indicator 1: accessibility (product price)

“We would love to be a zero waste store, but it’s hard and we need help. We need new legislation to require it so that we are on an even footing with other retailers (otherwise we just absorb the extra costs and things are already tight at the moment).”

Socio-economic indicator 2: New quality jobs

- Some job creation - primarily for businesses based on reusable packaging systems
- Some additional labour associated with reusable packaging systems compared to single use
- Difficult to quantify additional labour or monetary costs associated with reusable packaging
- Main concern about reusable packaging systems was weight and H&S for staff
- Additional labour requirements of reusable packaging systems may limit scalability in profit-maximising contexts

Socio-economic indicator 3: Enhanced community wellbeing and engagement

- Participants mostly saw reducing plastic waste and encouraging reuse as evidence of improved community wellbeing
- Provides an opportunity for individuals to enact sustainability values, reducing feelings of helplessness and eco-anxiety (also found by Kemper et al, 2024)
- Other spinoff benefits:
  - consumer agency (e.g. portion control);
  - reduced processed food/more cooking
  - slowing down/mindful consumption
  - increased connection to local food system
- Most highly engaged in local community, e.g.
  - supporting Plastic Free July
  - hosting workshops
  - collaborating with other NGOs (environment centres or social justice charities)
  - donating portion of profits to local causes, schools, community projects
  - hiring staff from refugee/non-English speaking community

Cultural indicator: collective wellbeing is improved

- Parallel research into reuse packaging systems in Te Ao Māori supported development of all the indicators considered, as well as a cultural indicator that considered collective wellbeing
- Key questions centred around whether the participant:
  - Had a cultural advisor to help inform their business and packaging systems
  - Had considered cultural practices in designing their packaging systems, such as the relevance of tikanga, halal, kosher
  - Had any thoughts on how their business practices supported tino rangatiratanga, kaitiakitanga, and kotahitanga
  - Perceived any relationship between the packaging systems they used and the nature of how communities access the types of products they make and sell

Cultural indicator: collective wellbeing is improved

- No participants had a cultural advisor; most had not considered cultural practices when setting up their packaging systems
- Most participants had values relating to protecting the environment that they could relate to kaitiakitanga, but found it more difficult to answer in relation to more political concepts such as sovereignty
- Identities/experience of staff/owners often the key driver of which (if any) cultural values were seen as relevant to the business:
  - One participant said their Māori whakapapa means Māori values are central to how they run their business, and particularly their decision to use reusable packaging systems: “it’s our responsibility to our tīpuna and our mokopuna to protect te ao”
  - One retailer noted that a proportion of their staff were from a particular country and this affected the products they stocked
- Only one retailer had proactive actions relating to cultural awareness, e.g. running Treaty workshops for staff; mātauranga Māori and cultural appropriateness policies as part of their product listing criteria

Key findings

Reusable packaging systems and associated businesses need support to lift performance and reporting of their systems.

Greater use of reusable packaging systems amongst large retailers, suppliers/producers would increase available resourcing.

Key findings

- Data keeping and reporting: Suppliers, producers and retailers should be required and supported to keep better data on their packaging systems (whether single-use or reuse) and report on this

- Environmental/health impacts: Reusable packaging systems, even poorly performing ones (low return rates, low customer BYO rates) reduce packaging use and waste compared to single-use systems
  - Extent of packaging avoidance impact depends on reuse rates (this looks different in returnable and RBBD systems).
  - Opportunity to shift towards safer, more inert, but expensive/resource intensive materials
  - More specialist research is needed to quantify food waste impacts, and to explore human health protection and risks associated with packaging materials in single-use and reusable systems

- Socio-economic impacts: Uneven playing field reduces the accessibility of reusable packaging systems, but RBBD systems can make sustainable shopping accessible to more customers, which generate wellbeing outcomes. Potential job creation impact and wider community benefits require further study and quantification:
  - Reusable packaging operators (especially returnable) internalise their costs, while single-use packaging externalise costs, meaning more expensive up-front costs (borne by consumer), but less waste management costs (saved by ratepayer)
  - The retailers that champion reusable packaging systems struggle to survive in the current groceries market

- Cultural impacts: cultural considerations are not front of mind for most businesses when they design their packaging systems, and most struggled to find the relevance of cultural considerations to their work

Thank you!

Watch this space for complete report…

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