Waikato Regional Council Technical Report 2024/18

Stocktake of reusable packaging for fast-moving consumer goods in the Waikato region

ISSN 2230-4363 (Online)
waikatoregion.govt.nz

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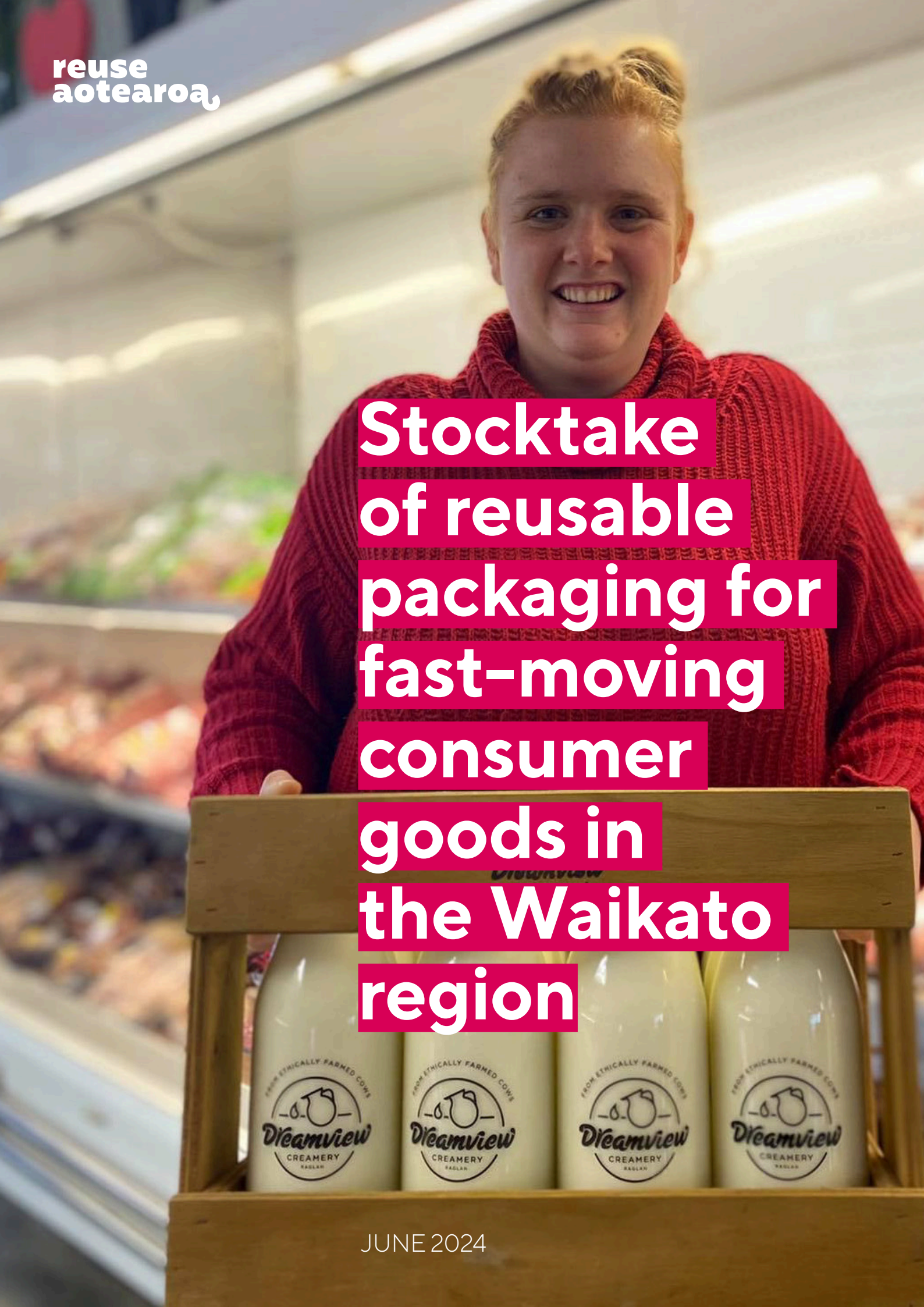
Publication date	July 2024
Document ID	29599641

	Name	Date
Peer Reviewer	Gradon Diprose (Manaaki Whenua - Landcare Research)	July 2024
Approving Manager	Dean King	July 2024

reuse aotearoa



Stocktake of reusable packaging for fast-moving consumer goods in the Waikato region

JUNE 2024

WHO WE ARE

Reuse Aotearoa is an organisation dedicated to building the momentum and capability to scale reusable packaging systems in New Zealand. We focus on understanding and telling the story of reuse, and fostering collaboration to bring reusable packaging systems to life and grow their strength and presence across the motu.

The story of this report (Abstract)

In 2022, Waikato Regional Council commissioned Reuse Aotearoa to undertake a three-part research project into reusable packaging in the Waikato region. This report presents part one of the research project: a stocktake of existing reusable packaging systems across the Waikato region, focusing on the packaging of groceries and fast-moving consumer goods (FMCGs) across the supply chain. The research has identified at least 95 discrete reusable packaging systems that are available and/or in use in Waikato for the containment, dispensing and/or transportation of various grocery and other products. These systems originate both inside and outside Waikato, and may be operated by producers, packaging/logistics companies and/or retailers.

The report presents these systems in a detailed, tripartite index, and concludes with reflections on the high-level trends and themes that emerge from this stocktake, relating to the nature and state of health (e.g, resilience) of reusable packaging in Waikato. Overall, access to Waikato's reusable packaging systems is unevenly distributed across the region, some product types have more reusable packaging options than others, and most systems are poorly promoted, regardless of their success and longevity. Small businesses dominate the provision of Returnable and Refill by Bulk Dispenser systems, which may increase the precarity of these systems. Furthermore, most Refill by Bulk Dispenser systems are currently only partial reuse systems. Reusable Transport Packaging systems are generally operated by and for large companies in the groceries supply chain, and are supported by the necessary infrastructure and service provision to deliver scaled outcomes. However, beyond this, the region requires more reuse system infrastructure to support efficient and effective reverse logistics and preparation for reuse activities for reusable packaging systems.

Disclaimer

Acknowledgements

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Peer Review: Gradon Diprose (Manaaki Whenua - Landcare Research)

Cover image:
Dreamview Creamery delivery of milk in reusable bottles and crates.

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EXECUTIVE SUMMARY

A stocktake of reusable packaging systems in the Waikato Region

Reusable packaging systems are increasingly recognised as worthy of support - in Waikato, in Aotearoa, and internationally - because these systems help to reduce:

- waste
- plastic pollution
- overpackaging
- greenhouse gas emissions, and
- natural resource usage.

For councils and governments to support the growth of reuse systems for packaging and realise these benefits, it helps to understand what is out there already, and any potential gaps. Waikato Regional Council, which has previously expressed interest in supporting more circular business models like reusable packaging, commissioned Reuse Aotearoa to provide this information for Waikato.

This report presents the resulting stocktake of currently available reusable packaging systems across the Waikato region. The stocktake focuses on the packaging of everyday products, like groceries, and looks across the supply chain - from the packaging customers see on the shelf, to the behind-the-scenes packaging used to get goods from the producer to the retailer.

What we did

We took a mixed-methods research approach that combined a desktop review with content from a small selection of interviews. Information to complete the stocktake was gathered through comprehensive searches of publicly available sources, e.g. websites, reports, and social media pages. These searches were informed by the prior knowledge of the Reuse Aotearoa research team. We also drew on interviews from previous Reuse Aotearoa studies. The accuracy of more detailed information included in the report, e.g. case studies, was checked with the relevant business.

What the stocktake looks like

The stocktake identifies and describes the various reusable packaging systems available in Waikato. Reusable packaging systems come in different shapes and sizes, and they operate differently to the single-use packaging most of us are used to. To be as useful as possible, the stocktake not only lists all the systems we found in Waikato, but also provides some detail about each of them.

All systems are categorised into an index of three different tables (Table 2.1; Table 2.2; Table 2.3) based on whether the systems are:

- **Returnable packaging systems:** where empty packaging is returned by the customer/final user of the product, to be sanitised and refilled with the same product or product type, e.g. glass bottle swap systems for beverages.
- **Refill by bulk dispenser systems:** where product is presented "loose" in a retail setting, enabling customers to fill their own reusable container (or use a supplied empty container), e.g. grocery store dry food bulk bins.
- **Reusable transport/transit packaging systems:** these are reusable versions of the outer layers of packaging that are used to contain or protect a product when it moves through the supply chain (e.g. from producer to warehouse to retail store), e.g. reusable plastic produce crates or pallets.

Each table includes columns with extra details about each system. These details include: the features of the reusable packaging or ancillary packaging units; where the system originates from or is available; how the system works to recirculate packaging in practice; and who is in charge of operating the system. The latter highlights if the system is:

- **Vertically-integrated**, i.e. operated by the supplier/producer of the goods that are in the packaging.
- **Vendor-operated**, i.e. managed by a retailer or Hospitality, Restaurant or Catering (HoReCa) organisation.
- **A third-party system** operated by independent

packaging, logistics and/or processing companies that specialise in reusable packaging and asset management.

Case studies sit alongside the index to illustrate how each reusable packaging system type works in practice.

Trends and themes we observed

The stocktake paints a picture of the prevalence, nature and state of health of reusable packaging across Waikato, including: the number of systems; the types of sectors or businesses running systems currently; geographical hot spots or gaps in the availability of reusable packaging systems and in the services for returning packaging; and the resilience of current systems.

From a numeric perspective, we found:

- At least **26** distinct returnable packaging systems operating from or available in Waikato for products as varied as milk, kombucha, toothpaste, takeaway coffee, beer, and cleaning products.
- At least **60** locations across Waikato hosting one or more refill by bulk dispenser system, including dedicated zero waste grocery stores, specialty stores with substantial bulk bin sections, milk tap vending machines, brewery fill-your-own systems, refill stations for cleaning products, butchers that accept BYO containers, and more.
- At least **nine** operators of reusable transport packaging systems in the groceries and FMCG sector in Waikato, including large-scale reusable pallet and crate suppliers transporting products to major supermarket retailers.

Some themes we identified are outlined below.

Geography: Reusable packaging systems operate across the region, but some areas are better served than others. Hamilton City, and Waipā, Waikato and Thames-Coromandel districts have the greatest prevalence of reusable packaging systems; the districts of Otorohanga, Waitomo and South Waikato have the least.

Product types: Some products have more reusable packaging options than others. For Waikato consumers, the products most easily accessible in reusable packaging are beer, milk, fresh produce and wholefoods. In contrast, well-known branded grocery products or processed, prepared or snack food products are not commonly available in reusable packaging. These products are also less supported by reusable transport packaging as they are mostly shipped to retailers in single-use cardboard boxes (although the boxes may be on a reusable pallet).

System operators: Small businesses dominate the provision of reusable packaging systems in Waikato, especially returnable packaging systems, which are almost all vertically-integrated. One exception is reusable transport packaging systems, which are usually operated by large companies with national reach. Refill by Bulk Dispenser models are usually either vendor-led or very dependent on retailer participation. Overall, reusable packaging systems in Waikato may be less resilient because system operators are often small or medium enterprises (fewer than 20, or 50 employees, respectively), and, as a general rule, smaller businesses have lower survival rates.

Improving Refill by Bulk Dispenser systems will drive increased reuse: Refill by Bulk Dispenser systems are the most numerically prevalent reusable packaging system in Waikato, creating an enabling environment for consumers to reduce packaging usage by bringing their own containers to fill into. However, most of these systems are only partial reuse systems because either (or both) the bulk container that the product arrives in, or the containers provided to customers to fill into (if they do not BYO), are single-use. An opportunity exists to increase reuse on both ends of this packaging system, but achieving this could be challenged by the closure over the past three years of several of the retailers who were the most proactive in reducing packaging waste.

Communication: Very few of the businesses mentioned in this stocktake have effective public-facing communications about the reusable packaging systems they use and operate. We refer to reusable packaging systems as their "best kept secret". We hypothesise that small businesses lack the time or resources to invest in good comms, while large businesses operating reusable

packaging systems tend to operate these in B2B contexts where targeted promotion to commercial users is prioritised over general comms aimed at raising public awareness about the systems.

Reuse system infrastructure: Reusable packaging relies on reverse logistics systems to collect empty returnable packaging back and prepare it for reuse (e.g. washing and other reconditioning), and on retailer fit-outs to accommodate Refill by Bulk Dispenser systems, or return and storage points for empty returnable packaging. While large reusable transport packaging systems benefit from third-party private operators that own and manage their reusable packaging fleets, networks of return points and the infrastructure required to recondition the packaging, consumer-facing reusable packaging systems face a shortage of both infrastructure and third-party providers. Most consumer-facing systems rely on the goodwill of participating vendors to complete parts of the logistics and preparation for reuse process. The resource recovery sector, which manages the post-consumption logistics for single-use packaging, has very little involvement in supporting reusable packaging systems. Potential to develop this relationship is explored in a separate report for Waikato Regional Council produced concurrently to this report, entitled *Return to Reuse: The potential role for Waikato's territorial authorities and resource recovery sector in supporting reverse logistics for reusable packaging.*

1 INTRODUCTION

1.1 Background

In 2022, Waikato Regional Council commissioned Reuse Aotearoa to undertake a stocktake of existing reusable packaging systems across the Waikato region, focusing on the packaging of groceries and fast-moving consumer goods (FMCGs) across the supply chain.

This stocktake is part of a wider research project into reusable packaging in the region, which also includes separate studies into:

- the state of play and future opportunities for reusable packaging in the agricultural sector; and
- the current and future role of territorial authorities and the resource recovery sector in supporting reusable packaging systems through service provision.

This stocktake provides a high-level understanding of the types of reusable packaging systems already operating in the region and the businesses who have developed (or are developing) these systems. This information is presented through **an index** and **case studies**. The stocktake does not quantify the current impact, nor the market share, of these reusable packaging systems, and does not delve into the barriers and opportunities for reusable packaging in the region. However, some high level trends and themes touching on all these topics are highlighted at the end of the report.

1.2 Why stocktake reusable packaging systems in Waikato?

1.2.1 National context

Globally, reusable packaging systems are increasingly recognised as a key part of increasing circularity, and reducing waste, plastic pollution, greenhouse gas emissions and natural resource usage (Ellen Macarthur Foundation, 2023). In New Zealand, reusable packaging systems are similarly acknowledged in several central government strategic documents relating to waste and plastics (Blumhardt, 2022a, section 1.2, pp.3-4).

Most recently, the 2023 New Zealand Waste Strategy *Te Rautaki Para* (Ministry for the Environment, 2023), has emphasised central government's commitment to following the waste hierarchy in law, policy and investment, and specifically highlighted how reuse systems for packaging and other products help to produce less waste, and embed and normalise circular thinking and behaviour. The strategy specifically recognises the role of infrastructure, resource recovery, public investment and regulation to remove current barriers to reuse systems.

Central government has also undertaken some national stocktaking of reusable packaging systems, or signalled the need to understand baseline activity in order to further develop reuse systems. Reusable packaging was included in Eunomia's national *Waste and Resource Recovery Infrastructure and Services Stocktake and Gap Analysis*, commissioned by the Ministry for the Environment (Wilson & Lewis, 2023). This study identified pockets of reusable packaging activity within geographic areas and certain sectors of the New Zealand economy; highlighted a range of infrastructural gaps relating to resource recovery for reusables; and noted the need for further research into the reusable packaging value chain (pp. 83-92). Subsequently, the Ministry tendered for a national study into reusable beverage packaging, in the context of its wider efforts to circularise beverage packaging through a container return scheme (GETS, 2023). The study would have been completed in 2023 and included a stocktake of reusable packaging in the beverage sector. However, this research was cancelled in the Labour-led Government's reprioritisation following a leadership change.

Both stocktaking and the recognition of reusable packaging's relevance to waste minimisation is also occurring at a national-scale via councils. Several councils across Aotearoa have sought to better understand reusable packaging in their local areas and how they might promote it. Reuse Aotearoa has already been funded or commissioned by Tauranga City Council (2022a), Nelson City Council and Tasman District Council (2022b), and Auckland Council (2023) to complete reusable packaging research with a stocktake element.

Councils are also increasing their support for reusable packaging, through allocating waste minimisation funds to reuse systems, or incorporating reuse-related action points in waste planning documents. For example, Hamilton City Council has funded the Let's Reuse initiative in Hamilton to support uptake of reusable coffee cup systems in the city (Let's Reuse Hamilton, n.d.), while Auckland Council's draft Waste Management and Minimisation Plan includes a specific proposed action dedicated to supporting reusable packaging systems (Auckland Council, 2024, p.66). These developments may be expected to increase given that the Waste Minimisation Act 2008, requires councils to consider the New Zealand Waste Strategy when preparing their own plans to reduce waste. As noted, the strategy highlights the relevance of supporting reusable packaging systems in order to produce less waste and increase circularity, and these themes are likely to be reinforced in the upcoming Action and Investment Plans intended to implement the Strategy.

1.2.3 Waikato Regional Context

In Waikato, interest in reusable packaging systems has been growing at both the regional and local government levels. At a regional level, several strategic documents have framed reusable packaging and/or other circular business model innovations as having a potential role in supporting waste minimisation and prevention, as well as wellbeing and wider social and economic development goals. For example:

- *The Journey to a Circular Economy in the Waikato Region* (Bianchi & Yates, 2021) highlights reusable packaging systems as an example of the service-based business models, systems innovation, and reuse strategies noted as important for transitioning the region to a more circular economy (for example, p.4).
- The *Waikato Wellbeing Project*,[1] which draws on the United Nations Sustainable Development goals,

1 A regional initiative to achieve a more environmentally sustainable, prosperous and inclusive Waikato region by 2030, based on the United Nations Sustainable Development Goals. See https://www.waikatowellbeingproject.co.nz/.

envisions reuse as part of achieving the project's chosen headline target for Goal 12 (Sustainable Consumption and Production), which is to "increase the number of households, schools, businesses and farms who reduce their waste leading to a 50% reduction of waste to landfill by 2030" (Waikato Wellbeing Project, 2023, p.36). The project explains that achieving this target will mean that: "Our region is producing less waste through designing waste out of our daily lives, **we're reusing things where we can**, and we're using innovative and effective systems for recycling." (ibid) [emphasis added]

- Although not directly mentioning reusable packaging, both the commentary and the actions in the Waikato Regional Council's *Waste Prevention Action Plan 2020-2025* are conducive to reusable packaging system exploration; the plan clearly signals the need for product and system redesign and circular innovation focused on preventing waste in the first place, with the concept of reusability mentioned several times as an example (Waikato Regional Council, 2020).

Efforts have been made, both locally and regionally, to better highlight and/or recognise reusable packaging activity happening in Waikato. For example, the Waikato Wellbeing Project's 2023 progress report refers to the "growing reusable and refillable packaging options" in Waikato, in the context of acknowledging that "[g]ood work is being done to reduce and prevent waste in the region." (p.36). *The Journey to a Circular Economy* goes further, describing several examples of reusable packaging systems in Waikato (Bianchi & Yates, 2021, p.11):

> Businesses are actively keeping products in use, including farms selling milk in reusable bottles, and beer sold in Swappa Crates. Kaipaki Dairies has developed a new reusable packaging system for milk using... kegs and taps, setting up refill stations and supplying cafes all around the region.
>
> Bulk stores offer the option to bring a refillable container to reduce packaging. Alongside regular bulk stores, Waikato has a high concentration of zero waste grocers who are also working to reduce their 'back-of-house' waste by working with suppliers to send in reusable packaging, sourcing from local producers (reducing packaging and food miles) and collaborating with other stores to buy bulk quantities of products which further reduces packaging waste...

Notably, Waipā District Council (n.d.) has compiled a comprehensive Zero Waste Guide for residents that lists more than 30 different local businesses and organisations that offer products and services via circular practices, including reusable packaging systems, such as local grocery refilleries and companies offering goods like milk in reusable containers. The same council's latest Waste Minimisation and Management Plan (WMMP) also highlights a local example of a company selling milk via reusable packaging systems (Waipā District Council, 2023, p.10).

Beyond councils, several organisations, sustainability bloggers and consultants have taken the time to identify, share about and/or actively support local businesses and organisations that operate reusable packaging systems in the Waikato region, including Mainstream Green, environment hubs and community resource recovery centres, such as GoEco, Xtreme Zero Waste and Seagull Centre, and The Rubbish Trip.

To date, these specific reusable packaging examples have mostly been collected and shared in an ad hoc way for pockets of the region, rather than compiled into a comprehensive, regionwide stocktake using consistent methodology and language that paints a more complete picture of regional reusable packaging activity. Recognising this, the Waikato Regional Council has noted the opportunity to learn more about existing circular activity through "a regional stocktake and gap analysis of initiatives already underway, such as local reuse economies" (Bianchi & Yates, 2021, p.9), and the preparation of case studies into circular economy initiatives in Waikato (ibid, p.17). This particular study takes steps towards this for reusable packaging systems, specifically.

1.3 What are reusable packaging systems?

1.3.1 Definition

Reusable packaging is durable/sturdy packaging that is refilled multiple times (in its existing form) with the same type of purchased product for which it was originally designed, or for the same purpose, in a system of reuse. A system of reuse is the established organisational, technical and/or financial arrangements that ensure the packaging achieves a minimum number of trips or reuse cycles in practice (not just in theory). In contrast, packaging is considered single-use, rather than reusable if, after its first use, it is repurposed (used again in its existing form for a different purpose), recycled or disposed of (see, for example, WasteMINZ, 2023, pp.1-2).

Despite sharing a common definition, reusable packaging systems don't all look the same. Broadly speaking, reusable packaging systems can be arranged into three main categories, outlined in detail, with examples in **Table 1.3**:

- Returnable packaging
- Refill by bulk dispenser
- Reusable transport/transit packaging

1.3.2 System operational details

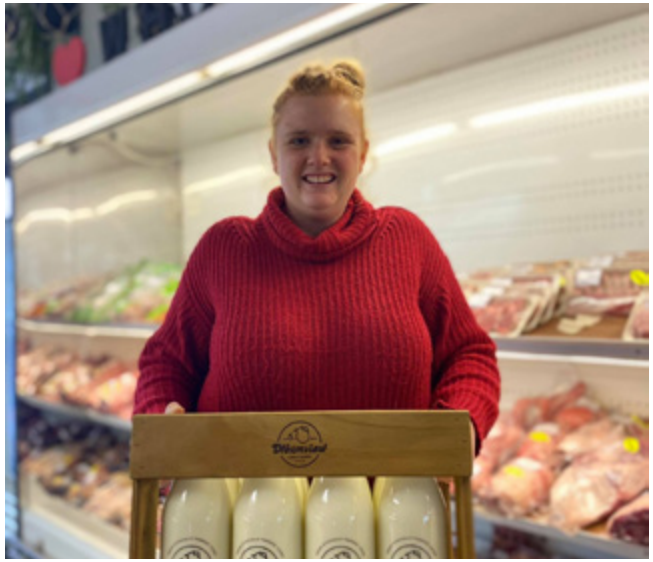
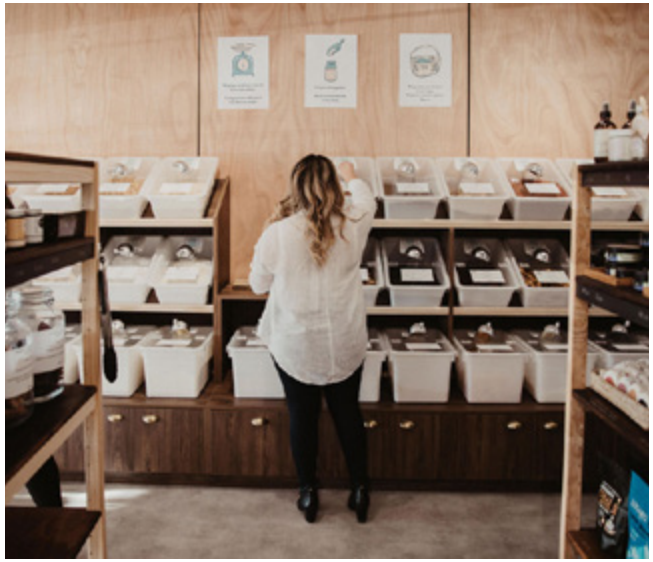
Within all the categories of reusable packaging systems outlined in Table 1.3, systems may be organised differently in terms of who owns the packaging units and oversees their flow through each reuse cycle, and the nature of the commercial transaction for the products carried by the packaging. These details can affect key system activities such as logistics (collection, retrieval, distribution) and preparation for reuse (inspection, reconditioning, washing).

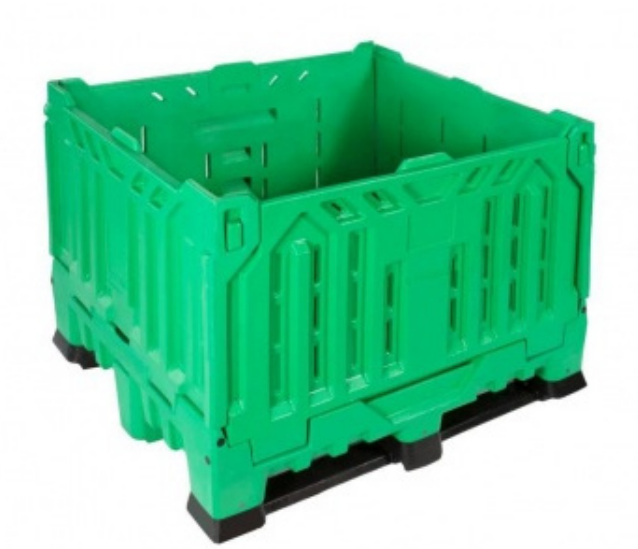
For example, systems can operate between businesses (B2B) or between businesses and consumers (B2C), or both. They may also be initiated or operated by different supply chain actors, for example:

- **Vertically-integrated systems** operated by the supplier/producer of the goods that are in the packaging.
- **Vendor-operated systems** operated by retailers or Hospitality, Restaurant or Catering (HoReCa) organisation.
- **Third-party systems** operated by independent packaging, logistics and/or processing companies that specialise in reusable packaging.

Regardless of who is 'in charge' of a system, reusable packaging systems require cooperation across the supply chain in order to function well. Each supply chain actor (whether producer, consumer, retailer, packaging provider, logistics operator or reconditioner) plays a role in keeping the packaging circulating for as long as possible.

Table 1.3: The three main categories of reusable packaging (based on the categorisations in Coelho et al, 2020)

Reusable Packaging System		How it works	Examples
Returnable packaging		Once empty, the product packaging is designed to be returned by the customer/final user of the product, to be washed, sanitised and refilled with the same product or product type. *NB: Returnable packaging can be B2B or B2C.*	Bottle swap systems, like Swappa Crate for beer or glass bottle milk swap systems, like Dreamview Creamery. Kegs used in hospitality and retail for serving/selling beverages, e.g. beer, wine, milk (B2B). Jar swap systems for food or personal care products, such as Solid reusable jars for toothpaste. Reusable takeaway packaging systems, like CupCycling with Swappa App or Again Again.
Refill by bulk dispenser		Bulk dispensers enable product to be sold 'loose' or unpackaged. Customers either fill their own reusable containers or purchase/use a new, empty container the first time they use the dispenser that they can bring back for refill for future purchases. *NB: Purchasing from a bulk dispenser is usually B2C, but the category can include a B2B returnable packaging component if retailers return the empty bulk dispensers to the original supplier for refill, e.g. kegs or fresh produce crates.* *This category can also include a returnable B2C component if the empty container available for the customer to fill at the dispenser can be returned after use to be sanitised and returned to shelf. For example, Again Again returnable bottles for filling at the taps of brewery cellar doors.*	Loose produce in crates at the supermarket. Bulk bins for dry goods, as seen at Bin Inn or zero waste grocers like Shop Without Packaging or ReStore. Liquid cleaning product and toiletries refill stations, e.g. ecostore or RAAD. Milk vending machines, e.g. Buttercup Dairies or HumpBridge milk. Bottle fill stations at breweries, e.g. Workshop Brewing in Raglan.

Reusable Packaging System		How it works	Examples
Reusable Transport/Transit Packaging		Reusable versions of the outer layers of packaging that are used to contain or protect a product when it is moving through the supply chain (e.g. from producer to warehouse to retail store), including boxes, pallets, pallet wrap, strapping and padding. *NB: Reusable transit packaging is most commonly B2B, but it can be B2C, e.g. reusable courier bags for e-commerce.* *This category sometimes overlaps with the refill by bulk dispenser category if the transit package is used by the retailer as the bulk dispenser. For example, reusable plastic produce crates as shelving in supermarkets or 20L plastic jerry cans for dispensing cleaning products on tap in retailers.*	CHEP, Loscam and Viscount reusable pallet systems. Reusable crates to deliver fresh produce, milk and bread, e.g. Anchor milk bottle plastic crates or Dreamview Creamery wooden crates. Reusable pallet wrap or product padding, e.g. durable plastic pallet wrap and reusable wool padding used by businesses in the Profile Group's vertically integrated supply chain.

1.3.3 A note on the refill by bulk dispenser category

Some commentators suggest that the refill by bulk dispenser model on its own is a packaging prevention model, rather than a reuse system. This is because refill by bulk dispenser models do not inherently involve organisational, technical or financial arrangements to ensure that either the bulk packaging the product is dispensed from, or the packaging that customers fill into, are returned for reuse. In the absence of such systems, refill by bulk dispenser models can only result in packaging reuse on the customer-facing end of the supply chain, and only if customers bring their own reusable bags and containers (Schneider & Copello, 2022; Global Plastics Policy Centre, 2023, pp.7-9).

For this reason, on their own, refill by bulk dispensers are only a partial supply chain solution for reusable packaging. Ideally, the bulk packaging from suppliers would be returnable (e.g. kegs) and the containers provided to customers who do not bring their own bags and containers should be part of a reuse system managed by the vendor. Where these arrangements are not in place, then more work must be done across the supply chain to improve the sustainability of refill by bulk dispenser offerings.

Nevertheless, we include refill by bulk dispenser models within our definitions of reusable packaging systems, in line with other studies (Coelho et al, 2020; Bradley & Corsini, 2023). This is because the category is disruptive to business-as-usual single-use packaging systems, by relying on alternative distribution, vending and/or consumption practices that are themselves conducive to further growth in reuse behaviours. This can be illustrated by two examples.

First, arrangements can be implemented to return bulk packaging to suppliers for reuse (e.g. kegs). Where this occurs, refill by bulk dispenser vending systems facilitate a B2B reuse element that can achieve considerable packaging reduction (and, arguably, more efficiently than B2C returnable models alone).

Secondly, for retailers, refill vending formats require different workflows, equipment and store layout compared to single-use packaging vending systems, presenting similar barriers to implementation as for returnable models. Retailers who overcome these challenges in order to sell goods loose create the necessary retail conditions to enable consumer reuse of packaging (even if this outcome is not always guaranteed). Once these retail conditions are in place, consumer reuse can be enabled and increased through ancillary actions such as:

- implementing a returnable system for refill packaging
- phasing out the provision of single-use refill packaging
- incentives for customer BYO containers, whether financial or marketing/signage.

1.4 Scope of packaged products considered in this stocktake

Reusable packaging systems can be used across all areas of economic activity. This stocktake focuses on **reusable packaging systems for food, beverage, takeaways, personal care products and cleaning products**, across the supply chain. The types of businesses or sectors considered include goods suppliers/producers, retailers, HoReCa (hotel, restaurant, catering), and reusable packaging providers.

The scope is based on the assumption that these goods and sectors are most relevant to household purchasing, and that, therefore, the use of reusable packaging for these goods and in these sectors can directly reduce the quantity of single-use packaging that ends up in kerbside rubbish and recycling. This is important for Councils, for whom collecting and managing household rubbish and recycling is a statutory responsibility, which can often take up a large proportion of their waste activity, investment and WMMPs.

In addition to the packaging passed on to consumers, the stocktake also considers the packaging within the supply chain to get FMCG products from producers/growers to retailers. This is for two reasons. First, because the fast-moving nature of these products (i.e. the speed that they move through the economy) creates an ongoing demand for business-to-business

(B2B) packaging to get the products to market. So, any reuse strategies for this behind-the-scenes packaging will have a significant waste avoidance impact and is useful to consider.

Second, because supply chains are connected; reuse systems and methodologies applied in the B2B component of the chain could potentially be leveraged to facilitate more reuse on the consumer-facing end. A good example is in the UK where grocery retailers, suppliers and supply chain logistics partner, Chep (one of the world's longest-running operators of reusable pallets and crates for the groceries sector), are collaborating to trial reusable bulk containers for refill dispensers in supermarkets, and returnable packaging for online groceries home delivery (CHEP, 2023).

1.5 Methodology and structure

This stocktake took a mixed-methods research approach that combined a desktop review with content from a small selection of interviews. The research commenced in late 2022 and continued until early 2024.

To identify existing reusable packaging systems/businesses in the Waikato region, we drew on: publicly available information found through keyword searches on the internet;[2] focused searches of the Waikato listings on public sustainability business databases (including UYO Cafe Directory, The Realness World, The Rubbish Trip zero waste shopping guides, Sustainable Business Network Circular Economy Directory); and, the prior knowledge of the Reuse Aotearoa research team regarding New Zealand's existing reusable packaging systems. Reuse Aotearoa was supported by a researcher from Para Kore Marae Incorporated, who focused on identifying and engaging with Māori businesses in the groceries and FMCG sector operating reusable packaging systems.

Searches were initially undertaken over a one month period at the project's commencement in late 2022 and were repeated again in late 2023 to ensure findings remained up to date. All identified systems/businesses were logged into a database that was then used to create the index of businesses and systems presented in this report. The index categorises the various businesses and systems based upon the reusable packaging system type or system operator.

Case study examples supplement the index to help illustrate how each reusable packaging system type can work in practice. These case studies were prepared using information in the public domain or based on prior Reuse Aotearoa research projects (that involved interviews). However, where necessary, the draft text was checked with the relevant business/system operator to ensure accuracy. At the end of the stocktake, some high-level trends and themes that can be observed from the stocktake findings are shared.

Additional, detailed interviews were not conducted specifically for this stocktake because the stocktake does not consider the barriers and opportunities to establishing, sustaining or expanding reusable packaging systems in the groceries and FMCG sector, nor does it consider the various actions that could be taken (by businesses, local or central government) to support reusable packaging systems to grow. These topics have already been considered in depth in previous Reuse Aotearoa reports, which have analysed barriers and opportunities to reusable packaging, and outlined comprehensive recommended actions to overcome these, targeted at different sectors of society (Blumhardt, 2022a; Blumhardt, 2022b; Blumhardt et al, 2023). We did not consider it necessary to reinvestigate these topics here, as we are confident that the findings from these previous reports remain relevant and broadly applicable, including for the Waikato context. We encourage

2 Keywords included: "reusable packaging", "refillable packaging", "returnable package", "reusable pallets", "reusable crates", "reusable bottles", "reusable jars", "return to reuse", "on tap", "refillery", "bulk bin", "reusable serviceware", "reusable cups", "reusable takeaway containers", "single-use cup free", "reusable bags", "mug library", "jar library", "kegs", "milk vending machine", "fill your own", "BYO containers". These keywords were used in conjunction with geographical search terms, such as "Waikato", "Coromandel", "Thames", "Matamata", "Waipā", "Hauraki", "Raglan", "Hamilton", "Waitomo", "Otorohanga", "Taupō", "Cambridge", etc., and in conjunction with terms related to the FMCG/groceries sector, such as "supermarket", "cleaning products", "toiletries", "cosmetics", "food", "groceries", "grocery store", "butcher", "meat", "milk", "beverage", "green grocer", "foodmarket", "market", "farmers market".

territorial authorities, industry groups and individual businesses in Waikato that are interested in these topics to refer to this previous work.[3]

3 All Reuse Aotearoa reports can be found at www.reuseaotearoa.org.nz. Reuse Aotearoa's first report *Reusable Packaging in Aotearoa - getting back to the future* (2022) includes a detailed chapter on barriers to reusable packaging in Aotearoa, as well as three chapters of recommended actions, targeted to local councils, industry/sector groups, and to central government. Many of the findings in this report were reinforced by the subsequent research report *Reusable Packaging Systems in Nelson-Tasman - what's happening today, what's possible tomorrow?* (2022). Reuse Aotearoa's report *B2B reusable packaging infrastructure and reverse logistics in Auckland - scope of current activity, and gap analysis* (2023) extends these analyses in the context of business-to-business reusable packaging systems specifically.

2 REUSABLE PACKAGING INDEX FOR WAIKATO

The index of reusable packaging systems in Waikato is divided into three tables:

- Table 2.1 lists the **Returnable Packaging** systems in Waikato and organises the different systems based on the type of packaging units used by that system.
- Table 2.2 lists the **Refill by Bulk Dispenser** systems and organises the different systems based on the dispensing system used.
- Table 2.3 lists the **Reusable Transport/Transit Packaging** systems that operate in Waikato and organises the systems based on the system operator.

Some overlap between the tables occurs. For example, in the case of Refill by Bulk Dispenser systems in which the bulk dispenser is returnable. In these instances, the systems will be mentioned in more than one table, but only the aspect of the system that is relevant to the particular table is shared.

The index focuses on the availability of, access to, and/or use of:

- reusable packaging systems for and/or by producers and retailers in Waikato; or
- products in reusable packaging for and/or by customers and other product end-users in Waikato.

As the focus is on availability, access and use, not all of the products in the featured packaging are Waikato-made products, and not all of the third-party operated systems are operated by businesses based in (or solely based in) Waikato. However, we have not included businesses based outside of Waikato who use reusable packaging if their only means of selling product into Waikato is via direct online sales channels to consumers. Without this exclusion, the study would have enlarged to a more national focus, and included packaging systems where there is very little Waikato-specific infrastructure or services that connect any part of the system to the Waikato locality or local businesses.

This stocktake is comprehensive, to the best of our knowledge. However, we cannot guarantee we have

identified all reusable packaging systems operating in Waikato given the inherent limitations of a mixed methods approach that relies on a desktop review of publicly available information. For example, we may have missed some B2B reusable packaging systems due to the limited information shared publicly about the packaging used between producers and retailers. Another challenge is that many reusable packaging systems are run by small operators who easily fly under the radar or lack the resources to invest in communicating the existence of their reusable packaging system.

Finally, this stocktake is accurate as of early 2024 when the last searches and updates were undertaken, but is a snapshot in time, rather than a living document. Reusable packaging systems are currently in a phase of emergence and experimentation. System operators are tweaking elements of their systems as they discover what works and what doesn't, and are expanding or contracting their sales channels based on market demand and viability. Furthermore, new systems are very likely to emerge after this report is released, while some systems in existence at the time of writing may be discontinued in the future.

2.1 Returnable packaging systems

Table 2.1 lists the products in returnable packaging that are available to purchase and return in Waikato. The systems are arranged in the table according to the packaging type used, which are listed alphabetically. Within each packaging type, systems are ordered alphabetically based on the name of the product or the system.

Returnable packaging systems rely on reverse logistics to complete an effective reuse cycle. Reverse logistics are the processes of retrieving empty containers from the end-user, ensuring the packaging is prepared for reuse (e.g. activities such as inspection, sanitisation, repair etc.) and then redistributed back to the producer to be refilled/repacked. Table 2.1 includes fields that help to explain how the reverse logistics process is managed by each system, e.g. details about who is in charge of operating the system (vertical integration, third-party led, vendor-operated), any incentives for securing high rates of return for empty containers, and the returns process available for end users in Waikato to return empty containers

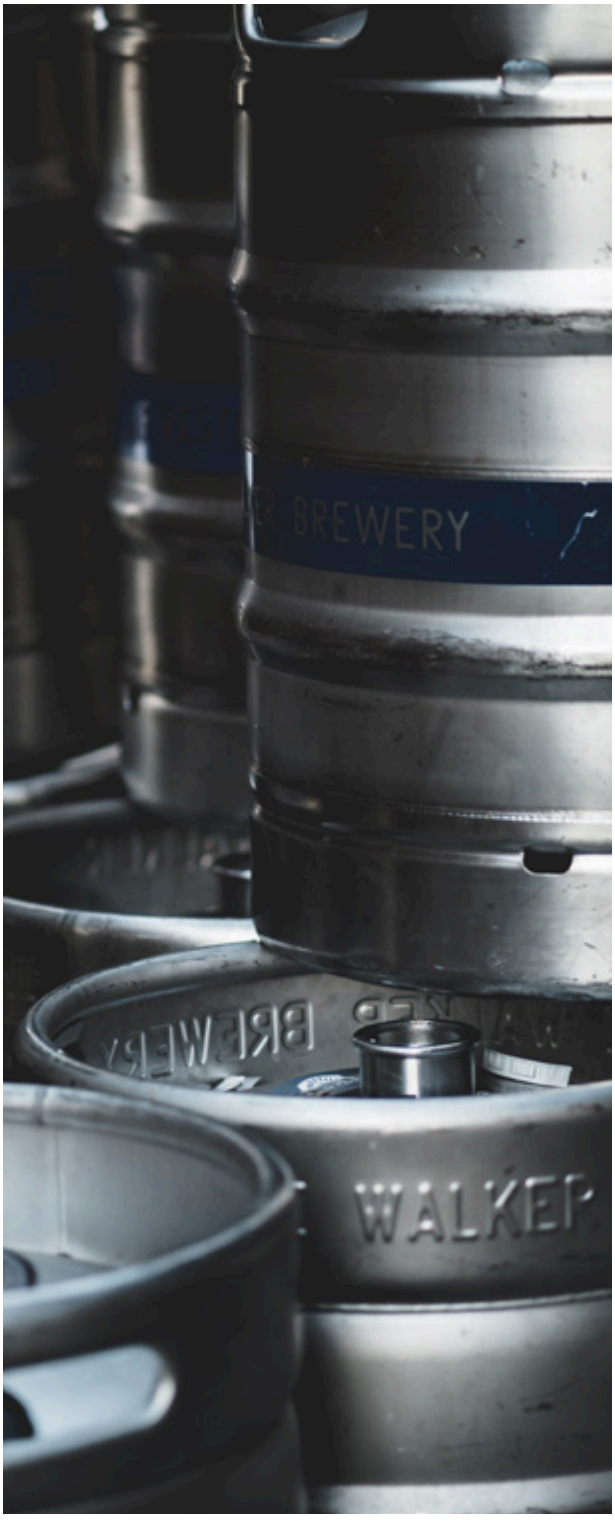


Table 2.1: Returnable packaging systems in the Waikato region

Packaging unit type	Producer or system name	Product	System operation details	Connection to Waikato	Product sales channels or reusable packaging use case	Packaging characteristics	Returns incentive for empty containers	Returns process for empty containers
Bottles	ABC Swappa Crate	Beer	Third-party operated system on behalf of producers (Lion and DB beer brands)	Product stocked and packaging able to be returned in Waikato Both the system operator and the producers are based outside Waikato	B2C packaging. Available in retailer stockists (liquor stores)	Glass bottle, metal cap. 745ML	Discount off future crate purchase	Back to retailer stockists
	Again Again	Beer, cider, mead	Third-party software for bottle loan and return logistics Retailers own and wash the bottles	Again Again is Tauranga-based. The system is available for use nationally ~1 retailer (Beehave!) using Again Again returnable bottle system in Waikato	B2C packaging Offered as a reusable bottle option for retailers selling beverages via in-store dispensing	1L glass bottle (flagon), plastic lid	App-based returns/container management system Customer charged if bottle not returned within set time	Return to participating retailer
	Dr Bucha	Kombucha	Vertically integrated (producer run)	Product is stocked and packaging able to be returned in Waikato (producer based in Bay of Plenty)	B2C packaging Available at: • Markets in Waikato (Cambridge, Waihi, Hamilton, Clevedon) • ~7 retailer stockists in Taupō, Cambridge, Hamilton and Gordonton	Glass bottle, plastic lid, 1L	Discount off the next purchase	Back to retailer stockists or market
	Dreamview Creamery	Milk	Vertically integrated	Dreamview Creamery located in Raglan	Mostly B2C packaging Available in Waikato, BOP and Auckland via: • Home and office delivery • Retailer stockists Also used by HoReCa customers	Glass bottle, metal lid. Two sizes: 250ML (for HoReCa customers only), and 1L	Deposit	Different options: 1. Back to retailer stockists 2. Swap empties when fresh bottles are delivered

Packaging unit type	Producer or system name	Product	System operation details	Connection to Waikato	Product sales channels or reusable packaging use case	Packaging characteristics	Returns incentive for empty containers	Returns process for empty containers
	Forage	Juice, tonic, nut milk	Vertically integrated(producer-vendor run) Forage is a retailer/ eatery that makes and packages juices, tonics and nut milk in-store	Forage is located in Cambridge	B2C packaging Available via: • Home delivery • In-house sales	Glass bottle, metal lid. Multiple sizes (125ML, 250ML, 500ML, 1L)	Loyalty scheme (return 9 bottles and get a free 250ml juice)	Different options 1. Back to store 2. Swap empties when fresh bottles are delivered (local customers)
	Happy Cow Milk	Milk	Third-party operator (milk processor) working with farmers	The first farm supplying Happy Cow Milk and using its distributed processing system is based in Waikato	Mostly B2C packaging Available in Hamilton and Auckland via office delivery, or delivery to a collection point for customer to pick-up from Also used by HoReCa customers	Glass bottle, plastic lid. Two sizes: 1L and 2L	Deposit	Different options: 1. Back to a collection point 2. Swap empties when fresh bottles are delivered
	Jersey Girls Organics	Milk	Vendor-operated system	Jersey Girls Organics farm is located in Matamata-Piako	B2C packaging Available in participating retailer stockists (currently most are outside of Waikato)	Glass bottle, metal lid, 1L	Deposit	Back to retailer (who manages the glass bottle returns, wash and refill system)
	Kaipaki Dairies	Milk	Vertically-integrated system	The Kaipaki Dairies farm and processing/ packaging factory are based in Waipā	Mostly B2C packaging Available in Waikato, BOP, Auckland & Wellington via: • Office delivery • Retailer stockists Also used by HoReCa customers	Glass bottle, metal lid, 1L	Deposit	Different options: 1. Back to retailer stockists 2. Swap empties when fresh bottles are delivered
	Volcanic Creamery	Milk	Vertically integrated system	Product is stocked and packaging able to be returned in Waikato (producer based in Rotorua)	B2C packaging. Available in ~7 retail stockists in Taupō, Tokoroa and Putāruru	Glass bottle, metal lid, 1L	Deposit	Back to retailer stockists

Packaging unit type	Producer or system name	Product	System operation details	Connection to Waikato	Product sales channels or reusable packaging use case	Packaging characteristics	Returns incentive for empty containers	Returns process for empty containers
	Will&Able	Personal care and cleaning products	Vertically integrated system, with third party return points (AON)	Product is stocked and able to be returned in Waikato (producer based in Auckland and Christchurch)	B2C packaging Available nationwide via: • Supermarkets and other retailer stockists • Office procurement suppliers (e.g. OfficeMax, NXP) • Online (website)	Plastic (HDPE) bottles and lids. Various sizes, including, 250ML, 500ML, 1L and 1KG	No incentive; trust-based system	Different options: 1. Take empties to local AON insurance branch (~13 locations across Waikato) 2. Courier/post back to collection depots (online customers can pre-purchase a postal return sticker with their product order)
Jars	Closed Loop Loyalty Club (CLLC) by The Fillery	Various food products, toiletries, or cleaners	Vendor-operated programme to manage returns from customers of empty containers for products they stock in returnable packaging	The Fillery is an online store based in Whitianga, Coromandel Packaging can be returned in person in Whitianga	B2C packaging CLLC currently receives and returns empty returnable packaging for the following brands stocked in their online store: • Unkle Dunkel's (Coromandel) - Wild Dispensary (Dunedin) • Solid (Wellington) • Nude Alchemist (Christchurch) • Mylk.Made (Christchurch)	Mostly glass jars (or small bottles) with metal lids	Customers receive 1 point for every 2 returned containers. After 10 points they receive a $10 voucher for The Fillery The cost of courier ticket for returning empty containers is also covered by The Fillery	Customers local to The Fillery can return containers to The Fillery in person Any other customers order a prepaid courier ticket when ordering products through The Fillery website. The ticket (affixed to a courier bag) is dispatched with their order Customer places at least 4 empty containers in the returns bag. These can be any mixture of containers from the participating CLLC brands The containers are sent to The Fillery, who sanitises and stores them before shipping batches of returns to the relevant producers

Packaging unit type	Producer or system name	Product	System operation details	Connection to Waikato	Product sales channels or reusable packaging use case	Packaging characteristics	Returns incentive for empty containers	Returns process for empty containers
	Dreamview Creamery	Cream; yogurt	Vertically integrated system	Dreamview Creamery is located in Raglan	Mostly B2C packaging Available in Waikato, BOP and Auckland via: • Home and office delivery • Retailer stockists Also used by HoReCa customers	Glass jar, metal lid Three sizes: 1L (for cream for HoReCa customers only), 750ML (yogurt) and 500ML (cream)	Deposit	Different options: 1. Back to retailer stockists 2. Swap empties when fresh jars are delivered
	Foraged in Raglan	Pickles, chutneys and preserves	Vertically integrated system	Foraged in Raglan factory is located in Raglan	B2C packaging Available in: • Retailer stockists • Markets in Waikato (Tamihere, Clevedon and Cambridge)	One size glass jar, one size bottle Both metal lids	Discount off next purchase	Different options: 1. Return at markets 2. Return to retailer stockists
	GoodBugs	Fermented food products	Vertically integrated system	GoodBugs factory is located in Hamilton	Mostly B2C packaging Available via: • Home delivery • Retailer stockists • Markets in Waikato, BOP and Auckland	Glass jar, metal lid, various sizes	Reward/credit/ discount for future purchases	Different options: 1. Return at markets 2. Return to retailer stockists 3. Drop-off to GoodBugs factory 4. Swap empties when fresh jars are delivered
	Kaias Naturals	Personal care products	Vertically integrated system	Kaias Naturals factory is located in Tairua, Coromandel	B2C packaging Available via: • Online (website) • Retailer stockists in Tairua	Glass jars and bottles of various sizes with either plastic pump lids, plastic lids or metal lids Aluminium tins with lids	10% discount on subsequent purchase	Courier/post empty containers back to Kaias Naturals
	PB23 Peanut Butter	Peanut butter and almond butter	Vertically integrated system	PB23 Peanut Butter factory is located in Raglan	B2C packaging Available in retailer stockists	Glass jar, metal lid Two sizes: 400g and 1KG	Trust-based system	Different options: 1. Back to retailer stockists 2. Drop-off to PB23 factory

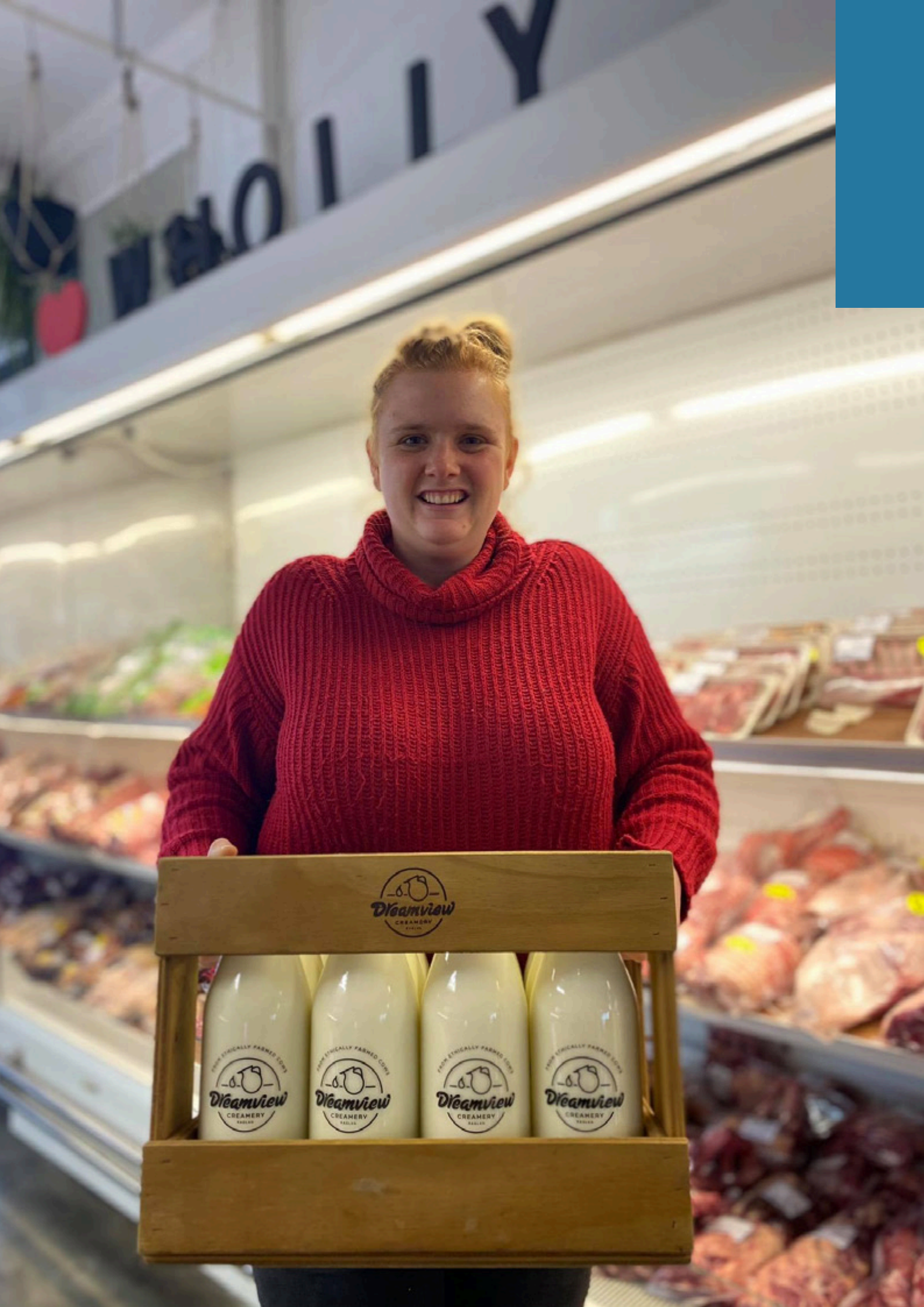
Packaging unit type	Producer or system name	Product	System operation details	Connection to Waikato	Product sales channels or reusable packaging use case	Packaging characteristics	Returns incentive for empty containers	Returns process for empty containers
	Solid	Toothpaste, tooth tablets, mouthwash, teeth whitener	Vertically integrated system	Product is stocked and able to be returned in Waikato (producer located in Wellington)	B2C packaging Available via: • ~5 stockists Cambridge, Raglan, Whitianga, Thames, Hamilton • Online (website).	Glass jars and bottles of various sizes with metal lids	Loyalty card - free toothpaste for every 12 returns	Different options: 1. Back to retailer stockists 2. Courier/post back to Solid
Jerry cans	Figgy & Co	Personal care and cleaning products	Vertically integrated system	Product is available for refill at ~1 online store in Waikato (producer based in Wellington)	B2B packaging Used by retailers for in-store dispensing.	HDPE, 20L	Trust-based system	Retailers courier/ post empty containers back to Figgy&Co
	Will & Able	Personal care and cleaning products	Vertically integrated system	Product is stocked and used for retail in-store dispensing in Waikato (producer based in Auckland and Christchurch	B2B and B2C packaging Used by retailers for in-store dispensing. Also available via: • Retailer stockists for bulk purchases, e.g. Farmlands, who have ~11 stores across Waikato. • Office procurement suppliers (e.g. OfficeMax, NXP).	HDPE, 20L	Trust-based system	Return (by courier or in person) to collection depots
	Zero Refill	Personal care and cleaning products	Vertically integrated system	Zero Refill factory is based in Waihī	B2B packaging Used by retailers for in-store dispensing (currently all retailers outside of Waikato)	Plastic (LDPE) collapsible jerry can, 10L	Trust-based system	Courier/mail empties back to Zero Refill The containers are collapsible, so several can be folded into an A4 carton

Packaging unit type	Producer or system name	Product	System operation details	Connection to Waikato	Product sales channels or reusable packaging use case	Packaging characteristics	Returns incentive for empty containers	Returns process for empty containers
Kegs	• Kegstar • Konvoy Kegs • Individual brewery-managed keg fleets	Beer	Kegstar and Konvoy Kegs are two separate, third-party operated keg management systems Individual brewery managed keg fleets are vertically integrated, producer run systems The systems have been placed in a row together because most breweries tend to own a fleet of their own kegs, as well as utilising a third-party managed fleet	~10 breweries across the region (Workshop Brewing, Raglan; Good George, Hamilton; Hopnotic Brewery, Tamahere; Brewaucracy, Hamilton; Hot Water Brewing Co, Coromandel; Lakeman Brewing, Taupō; Bootleg Brewery, Hamilton; Blue Fridge Brewery, Coromandel; Karamu Barrrelworks; Three Fat Pigs, Hamilton) All breweries fill into kegs, likely a combination of kegs owned by the brewery, and kegs managed by either Kegstar or Konvoy Kegs Kegstar and Konvoy Kegs both operate nationwide with head offices outside of Waikato	B2B packaging Used by: • HoReCa customers for on-site serving. • Retailers for in-store dispensing • The breweries for in-house sales	Stainless steel kegs - 20L, 30L, 50L	Varies across systems, but mostly bond/deposit and tracking software Sometimes no incentive, trust-based system for kegs that are part of an individual brewery-owned fleet	Empty kegs collected when fresh kegs are delivered
	Waikirikau Fermented Tī	Fermented Tī	Vertically integrated system (producer-led)	Waikirikau Fermented Tī is located in Hamilton, Waikato	B2B packaging Available for: • HoReCa customers and events for on-site serving	Stainless steel, 20L	No incentive, trust-based system	Empty kegs collected when fresh kegs are delivered

Packaging unit type	Producer or system name	Product	System operation details	Connection to Waikato	Product sales channels or reusable packaging use case	Packaging characteristics	Returns incentive for empty containers	Returns process for empty containers
	Wine Diamonds	Wine	Third party operated keg management system	One HoReCa customer serving wine on tap (Amphora Bar in Hamilton)	B2B packaging Used by: • HoReCa customers for on-site serving. • Retailers for in-store dispensing (none currently in Waikato)	Stainless steel kegs, 20L	No incentive, trust-based system	Empty kegs collected when fresh kegs are delivered
Pails, buckets and other bulk containers	Dreamview Creamery	Milk	Vertically integrated	Dreamview Creamery is located in Raglan	B2B packaging Available in Waikato, BOP and Auckland for HoReCa customers	Stainless steel - 5L and 10L	Trust-based system though customers may be charged for non-returns	Empty pails collected when fresh pails delivered
	Kaipaki Dairies	Milk	Vertically integrated	The Kaipaki Dairies farm and processing factory is located in Waipā	B2B packaging Available in Waikato, BOP, Auckland & Wellington for: • HoReCa customers • Retailers for in-store dispensing	Plastic (polypropylene) - 10L or 20L	No incentive; trust-based system, although returns are monitored through a delivery app, so recurring non-returns can be identified and rectified through conversations with customers	Empty pails collected when fresh pails delivered
	Happy Cow Milk	Milk	Third-party operator (milk processor) working with farmers	The first farm supplying Happy Cow Milk and using its distributed processing system is based in Waikato	B2B packaging Available in Hamilton and Auckland for: • Retailers for instore dispensing • HoReCa customers	Plastic - 10L, 30L or 50L	No incentive, trust based system	Empty containers collected when fresh containers delivered
	RAAD	Personal care and cleaning products	Vertically-integrated (producer run)	Product is available at ~1 retail store dispenser in Waikato (producer based in Auckland)	B2B packaging Available for: • Retailers for in-store dispensing • HoReCa customers	5L plastic jerry can with pump	No incentive; trust-based system, although RAAD covers the courier cost for end-users to return	End-users courier/ mail empty containers back to RAAD

Packaging unit type	Producer or system name	Product	System operation details	Connection to Waikato	Product sales channels or reusable packaging use case	Packaging characteristics	Returns incentive for empty containers	Returns process for empty containers
Pouches	Zero Refill	Personal care products and cleaning products	Vertically integrated system	Zero Refill factory is located in Waihī	B2C packaging. Available via: • Online (website) • Factory shop • Waihī Beach Farmers Market	Flexible plastic (LDPE) pouches with plastic lid. Two sizes: 1L and 2L	No incentive, trust-based However, cost of returning pouch is covered – customers receive a pre-paid courier ticket/bag for empty pouches when they make a repeat order, or can use the online portal to order just a courier ticket	Different options: 1. Courier/post back to Zero Refill (with pre-paid courier ticket/bag). 2. Return to factory shop in Waihī
Serviceware - cups	Again Again	Prepared hot drinks (e.g. barista coffee)	Third-party software for cup loan and return logistics HoReCa vendors own and wash cups. Cups initially purchased from Again Again	Again Again is Tauranga-based. The system is available for use nationally ~12 hospitality outlets using Again Again system in Waikato[1], including Coromandel, Hamilton, Taupō, Te Awamutu	B2C packaging Used by HoReCa outlets for takeaway orders	Double-walled stainless steel cups with plastic lid	App-based returns/container management system Customer charged if cup not returned within set time	Return to participating outlet
	Ugli-Mug	Prepared hot drinks (e.g. barista coffee)	Vendor-operated system Mugs initially provided by third party (Xtreme Zero Waste)	Ugli-Mug is a Raglan mug library system ~6 hospitality outlets in Raglan are currently using this system	B2C packaging Used by Raglan HoReCa outlets for takeaway orders	Secondhand ceramic mugs	No incentive; trust-based system	Return to participating outlet

1 Any new participant outlets will be updated on the Again Again network map: https://www.againagain.co/map.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RETURNABLES CASE STUDY - DREAMVIEW CREAMERY

"Everything that we do is in reusable packaging. And that's always our goal - if we have a new product and are wanting to work on something new, we work on ways that we can be sustainable and reusable, rather than using anything single-use or plastic."

Dreamview Creamery is a family-owned and operated dairy farm in Raglan that produces whole milk, trim milk, yogurt and cream, and is dedicated to packaging and distributing all its products via plastic-free and reusable packaging systems.

The farm sells 85% of its milk in 1L returnable glass bottles across the Auckland, Waikato and Bay of Plenty regions (the remaining milk is sold directly to Fonterra). Cream is packaged in returnable 500ml glass jars and yogurt in 750ml returnable glass jars. For HoReCa customers, Dreamview has a range of bespoke smaller or larger packaging sizes to meet the needs of this sector. For example, 250ml returnable glass bottles for hotel minibars, and 5L and 10L stainless steel billys of milk, cream or yogurt for caterers and food producers that use larger quantities. Reusable crates are used to transport the bottles and jars of milk, cream and yogurt (see Table 2.3). These are wooden crates made and maintained in-house using untreated plywood.

We wouldn't want to do what we were doing with single-use plastic - what's the point? We want to do what we are doing and stay niche - we don't want to be the next Fonterra and Lewis Road - we want our food miles to stay small too - Auckland would be as far as we go.

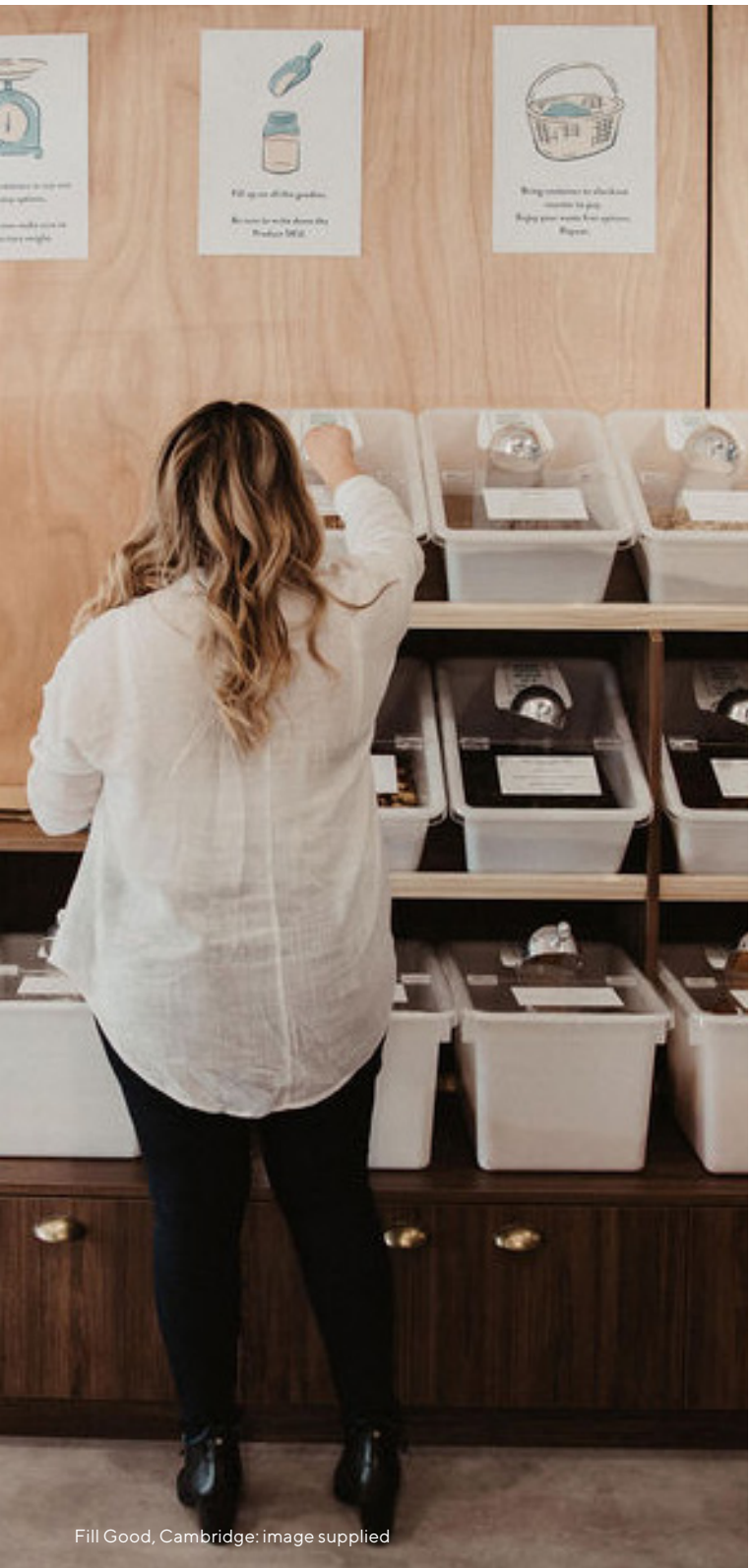
Most of Dreamview Creamery's packaging carries a deposit to ensure that the packaging is returned for reuse, including a $4 deposit for bottles and jars. Dreamview Creamery has several sales channels, with slightly different arrangements for empty container return, including:

- Direct sales to consumers via a home delivery service where consumers order online, and when new product is delivered to their home, empty bottles and jars from the previous order are picked up.
- In-direct sales to consumers via retailers who then act as a return point for empty bottles and jars.
- HoReCa customers swap empty bottles, jars and billys when new orders are delivered.

Dreamview Creamery's reusable packaging systems are vertically-integrated and they own and operate various infrastructure and assets to make their system work. None of their operation is outsourced. For example, Dreamview manages all deliveries in-house; they own six delivery trucks and have drivers on their staff payroll. This makes it easier to operate a bespoke delivery route, including home deliveries, and to manage the swapping process of new containers for empty containers and ensure the empty containers are successfully returned to the Raglan factory for reuse. To prepare the containers for reuse, Dreamview owns two commercial dishwashers, one of which is modified with individual nozzles that ensure the inside of each bottle and jar is washed effectively.

In terms of staff time, Dreamview estimates that they have an extra two FTE as a result of operating a reusable, rather than single-use, packaging system. These extra hours are mostly associated with the washing, sanitisation and inspection of the bottles, but also the administration time needed for managing/logging the returns of containers, including the deposit system, and in maintaining good communication with retailers who are important for the successful functioning of the reusable packaging system.

The thing that I wish people would know is that it's not easy - we don't do it to make money, although we need to make money. We do it because we love, and we're passionate about, what we're doing.



Fill Good, Cambridge: image supplied

2.2 Refill by bulk dispenser packaging systems

Table 2.2 lists the various locations where product is sold loose/unpackaged/on-tap, enabling customers to fill empty containers to take off the premises with them (e.g. to take home). This is different from consumers purchasing pre-filled returnable packages of product to take home, or ordering products like beverages 'on-tap' at a hospitality outlet to consume on-site.

The focus of Table 2.2 is on the availability of refill stations in the region, as opposed to Waikato-based producers that only supply refill stations outside of the region (although, the latter are mentioned in this stocktake in Table 2.1 if the bulk containers they use are returnable, e.g. Zero Refill). Entries are organised based on the type of dispensing system used. Within each category of dispensing system, entries are listed alphabetically based on the name of the producer or retail outlet.

As noted earlier in this report, Refill by Bulk Dispenser systems create the conditions for greater reuse of packaging, but do not always guarantee this outcome. In order to understand whether each of the listed dispensing systems are part of a **partial** or **complete** reuse system, the table also provides details about the bulk primary packaging used to get the product to the dispensing location (B2B), and the containers available at the retail location for consumers to refill into (B2C).

Table 2.2 Refill by bulk dispenser packaging systems in the Waikato region

Dispensing system	Producer or retail outlet	Product	Retail location	Characteristics of bulk container used to deliver product to the dispenser	Characteristics of container used by consumer for refilling
Retailer installed taps (not bespoke to a particular brand) that connect to a separate bulk container – consumers fill empty bottle from tap	~14 in-house sales at breweries or brewery venues, including Workshop Brewing; Good George x 7 locations; Crafty Trout Brewery; Beehave!; Hopnotic Brewery; Brewaucracy; Hot Water Brewing Co; Bootleg Brewery	Mostly, beer, but also mead, cider, soft drinks	Across Waikato, including Raglan, Hamilton, Matamata, Taupō, Cambridge, Tamahere, Coromandel	Returnable stainless steel keg (20L, 30L, 50L) (see Table 2.1)	One outlet (Beehave!) offers a returnable container option for consumers to fill into (the Again Again flagon, see Table 2.1) The other outlets do not operate a returnables system for consumer refill containers. Consumers either BYO or purchase provided bottles. The latter varies across venues, but includes brown PET (1.25L and 2L); glass bottles of varying sizes, or stainless steel flagons. The price point will dictate likelihood of future reuse.
	The Hamilton Beer & Wine Co	Beer (sometimes also cider and soft drinks)	Hamilton	Returnable stainless steel keg (20L, 30L, 50L)	No returnables system for consumer refill containers Consumer BYO or purchase provided bottles – brown PET riggers (1.25L and 2L) or 1L glass growler
Retailer installed bulk bins and/or gravity feeder that are filled from separate bulk container	**~2 x packaging-free or "zero waste" stores, including:** Re-Store, Thames; Bare Refill Grocery, Hamilton	Wholefoods (dry foods and liquid foods). Some personal care products and cleaning products A range of producers /growers /suppliers from both Waikato and outside Waikato	Coromandel, Raglan, Hamilton	Mostly single-use sacks/ bags made of LDPE, paper, woven polypropylene, or mixture of materials Some products may arrive via a returnable bucket/pail system	No returnables system for consumer refill containers, though some stores offer repurposed glass jars for free Customers encouraged to BYO containers Otherwise single-use brown paper bags provided to customers free of charge

Dispensing system	Producer or retail outlet	Product	Retail location	Characteristics of bulk container used to deliver product to the dispenser	Characteristics of container used by consumer for refilling
	~20 x specialty grocery stores with substantial bulk bin sections, including: 6 x Bin Inn Earth Store, Whitianga FillGood, Cambridge Colville General Store Forage, Cambridge Frankton Fresh Food & Spices, Hamilton Fruit Valley, Paeroa Khyber Foods & Spices, Hamilton Organic Nation, Hamilton Spice Guru, Hamilton SS Spices and Groceries, Hamilton The Herbal Dispensary, Raglan The Sustainable Pantry, Waihi Whole Heart, Hamilton Yogiji's Food Mart, Hamilton	Wholefoods (dry foods and liquid foods). Some personal care products and cleaning products A range of producers /growers /suppliers from both Waikato and outside Waikato	Across Waikato, including Coromandel, Waihi, Cambridge, Paeroa, Hamilton, Raglan	Mostly single-use sacks/ bags made of LDPE, paper, woven polypropylene, or mixture of materials Some products may arrive via a returnable bucket/pail system	No returnables system for consumer refill containers, though some stores offer repurposed glass jars for free Customers can BYO container and some stores proactively encourage customers to BYO containers with discounts and signage (e.g. Bin Inn) Otherwise single-use bags (plastic or paper) provided free of charge
	Most supermarkets and some dairies (New World, Countdown, Pak 'N Save, FreshChoice, FourSquare)	Wholefoods	Across Waikato One supplier of some supermarket bulk/ self-selection aisles is Profile Foods (based in Hamilton)	Mostly single-use sacks/ bags made of LDPE, paper, woven polypropylene, or mixture of materials	No returnables system for consumer refill containers Customer BYO container or single-use plastic snaplock bags or composite paper/plastic bags provided free of charge
Bespoke single product/ producer dispensing machines	Buttercup Dairies vending machine	Milk	Farmgate vending machine, Taurua, Coromandel	Reusable stainless steel, 300L	Purchase provided 1L glass bottle, metal lid (no returns system, but purchase price may be incentive for reuse)
	HumpBridge Milk vending machine	Milk	Farmgate vending machine, Waipā	Reusable stainless steel, 300L)	Purchase provided 1L glass bottle, metal lid (no returns system, but purchase price may be incentive for reuse
	Kaipaki Dairies (producer)	Milk	Bare, Hamilton	Returnable plastic pail (see Table 2.1)	Consumer BYO or purchase a 1L glass bottle, metal lid (no returns system, but bottle purchase price may be incentive for reuse)
	Solid toothpaste dispenser	Toothpaste	Bare, Hamilton	Upcycled 2L ice cream container - contents emptied into machine	No returnables system for consumer refill containers. Consumers must BYO container

Dispensing system	Producer or retail outlet	Product	Retail location	Characteristics of bulk container used to deliver product to the dispenser	Characteristics of container used by consumer for refilling
Online store filling customer orders from bulk containers	The Fillery, Whitianga	Personal care and cleaning products	Whitianga The producer of the products (Figgy & Co) is based outside of Waikato	Single-use bulk paper sacks for dry product Returnable 20L jerry cans for liquid product (see Table 2.1)	Local customers can add a note when placing their order that they will drop-off their own containers for refilling to The Fillery For customers further afield, orders are filled into repurposed jars sanitised by The Fillery in their commercial dishwasher
Loose product in produce crates/boxes and/or on retailer shelving or tables	Common in most bakeries and stockists of produce (e.g. supermarkets, farmers' markets, green grocers and speciality stores)	Fresh produce and bread	Supermarkets, green grocers, farmers' markets, speciality stores, bakeries across Waikato	Reusable plastic crates, single-use cardboard boxes, or product placed loose directly on shelving or tables (e.g. bread baked on-site)	No returnables system for produce bags or bread bags. Consumer BYO bags, single-use bags provided for free (single-use plastic bags for produce are illegal, so usually provided bags are brown paper bags), or options to purchase a reusable produce bag (price may be incentive to reuse
Bulk package with tap or pump (e.g. jerry can or bladder) that can be placed on retailer shelving or tables for customer self-service	Jersey Girl Organics sales at markets	Milk	Farmers markets across Waikato	Single-use plastic bladder with tap	Consumer BYO or purchase provided 1L glass bottle, metal lid (no returns system, but purchase price may be incentive for reuse)
	Ecostore refill stations	Cleaning products and personal care products	~11 refill stations in outlets across Waikato (Taupō, Te Awamutu, Cambridge, Raglan, Hamilton, Waihi, Thames). Producer outside Waikato.	Single-use 20L plastic jerry can or 5L pump bottles Ecostore hosts a packaging return programme for their containers and covers the cost for retailers to return the containers. Returned containers are recycled	Consumer BYO or purchase ecostore refill bottles (select refill stations)
	RAAD refill stations	Cleaning products and personal care products	~1 refill station in Waikato (Hamilton) Producer outside Waikato	5L plastic containers returned to supplier for refill	No returnables system for consumer refill containers. Consumers BYO container or purchase a bespoke glass bottle for refills (purchase price may be incentive for reuse)
	Will&Able refill stations	Cleaning products and personal care products	~1 refill station in Waikato (Hamilton) Producer outside Waikato	20L plastic jerry can returned to supplier for refill	No returnables system for consumer refill containers Consumers BYO container
Unpackaged or prepackaged product sold at producer outlet/ factory	~7 x coffee roasters or roaster stores (including Bubu Coffee, Essenza Coffee, Morning Glory, Raglan Roast x3 stores, Rocket Coffee)	Coffee beans	Across Waikato, including Taupō, Morrinsville, Raglan, Hamilton	Reusable lidded buckets/ canisters	No returnables system for consumer refill containers Consumers can BYO container

Dispensing system	Producer or retail outlet	Product	Retail location	Characteristics of bulk container used to deliver product to the dispenser	Characteristics of container used by consumer for refilling
Deli counters	~8 butchers/fishmongers, including: The Chopping Block, Expleō, Matamata Butchery, Spa Gate Fresh Seafood Market, The Coromandel Smoking Co, Wholly Cow Cambridge, Magills Butchery, The Meat Factory	Meat and seafood	Across Waikato, including Coromandel Town, Hamilton, Matamata, Cambridge, Te Awamutu, Taupō	Single-use or reusable crates (e.g. fish bins), or plastic wrapped	No returnables system for consumer refill containers Consumers can BYO container or single-use wrap is provided (e.g. butcher paper or plastic wrap)
	Dante's Fine Foods	Cheese	Cambridge	Not determined	No returnables system for consumer refill containers Consumers can BYO container or single-use wrap is provided (e.g. butcher paper or plastic wrap)
	Over the Moon	Cheese and other specialty items	Cambridge	Not determined	No returnables system for consumer refill containers Consumers can BYO container or single-use wrap is provided (e.g. butcher paper or plastic wrap)
	Supermarkets with deli counters	Cured meats, fresh seafood, salads and other deli items	Across Waikato	Not determined	No returnables system for consumer refill containers Customer BYO container or single-use paper or plastic wrap or single-use containers (plastic or plastic-lined fibre composite) provided free of charge

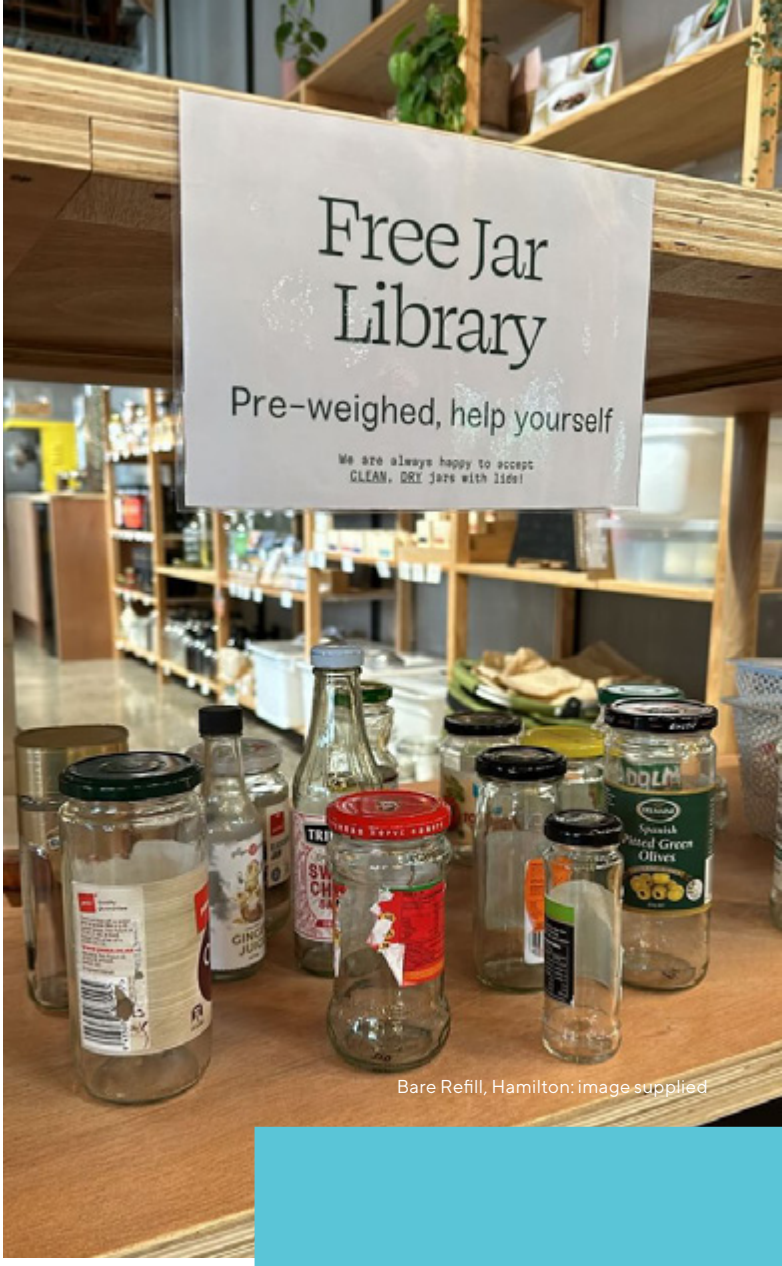
2.2.1 Strengthening reuse in Refill by Bulk Dispenser systems: case studies

Refill by bulk dispenser systems are a consumer-facing retail system that ***reduce*** packaging waste because larger quantities of product are transported to the retailer in a single bulk package. This removes the need for multiple smaller containers and therefore creates a packaging waste saving, even if the bulk container is single-use (such as the large single-use sacks of wholefoods from which retail bulk bins are often filled). However, greater packaging waste avoidance occurs where the bulk containers are also returnable (a **B2B reuse element**), and where consumers are supported either to BYO container to fill into or to access a returnable refill container (**B2C reuse element**). This section shares some examples of the different ways these outcomes are achieved in some of the Waikato-based Refill by Bulk Dispenser systems.

B2B reuse element in Waikato Refill by Bulk Dispenser systems

A well-utilised example of B2B returnable packaging within Refill by Bulk Dispenser systems are the kegs used by breweries across Waikato to supply in-store retailer tap dispensing systems, or the reusable pails and containers used in bespoke milk dispensing machines (see Table 2.1).

As with other parts of New Zealand, the retailers who have established dedicated zero waste grocers or speciality grocers with a focus on reducing packaging waste, are often motivated to install dispensing systems that are built around reuse, or to procure products from suppliers who already use, or are willing to establish, returnable packaging systems for bulk containers. For example, The Fillery online store in Whitianga fills customer containers with Figgy & Co cleaning products from 20L jerry cans that are returned to Figgy & Co once empty for refill. Similarly, Bare in Hamilton hosts a Kaipaki Dairies milk dispensing tap with returnable pails, and stocks cleaning product refill stations for Will&Able and RAAD, both of whom utilise returnable bulk containers.

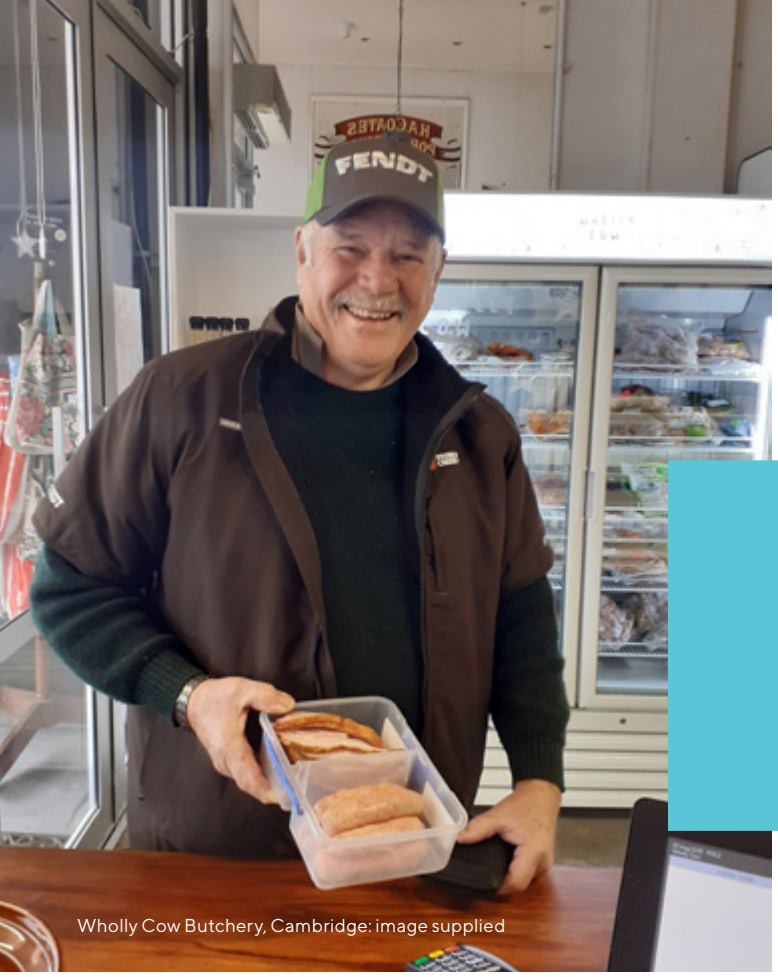


Bare Refill, Hamilton: image supplied

B2C reuse element in Waikato Refill by Bulk Dispenser systems

Dispensing systems in retail locations create an enabling environment for B2C reuse, but do not guarantee it unless systems are in place to facilitate customer reuse of refill containers. This can range from signage that lets customers know BYO containers are welcomed, through to phasing out any single-use alternatives and/or offering a returnable refill container system. The case studies below provide some examples of producer and retailer efforts to support a B2C element in their refill systems.

Offering a returnable packaging system for refill containers. Beehave! Meadery in Taupō has signed up to the Again Again reusable flagon system (see Table 2.1). When customers come to the meadery to buy mead to take home, they have the option of using the Again Again mobile phone app to borrow a 1L glass flagon for their refill, which is free for a set period of time (the "free loan

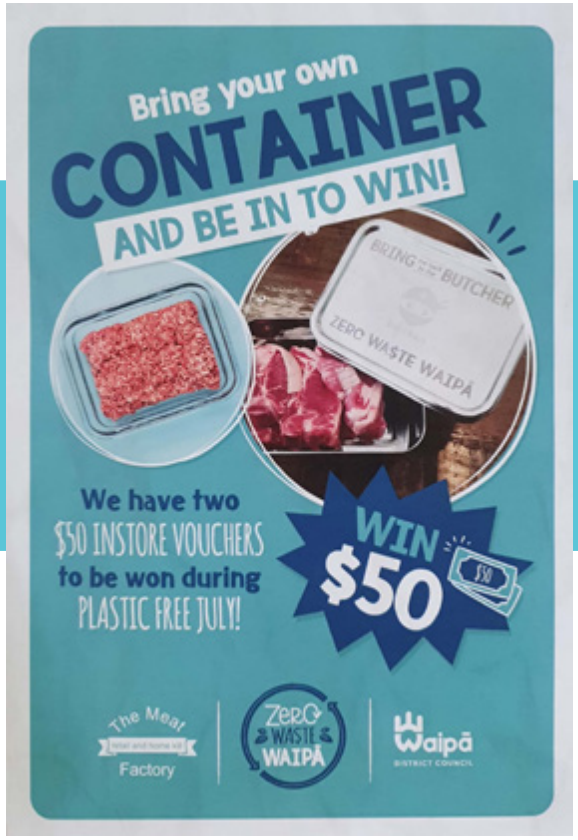


Wholly Cow Butchery, Cambridge: image supplied

period"). Customers are incentivised to return the flagon before the free loan period ends, in order to avoid being charged the replacement cost of the bottle.

Offering repurposed packaging at refill stations instead of new/single-use items. The zero waste grocer Bare in Hamilton hosts a jar library in their shop where jars donated by the community are sanitised and pre-weighed before being made available to customers who forget to bring their own containers. Use of the repurposed jars displaces the need for a new, single-use brown paper bag that the store otherwise provides to customers to fill into.

Not providing single-use refill containers, so customers must BYO if they wish to access the product. Solid is a Wellington-based toothpaste company that sells its products via reusable packaging systems only. They sell toothpaste in prefilled returnable packaging, as well as via dispensers, of which there is one currently in Waikato. The dispensers are not accompanied by empty jars for customers to fill into, and the purchase price for the prefilled package is higher than the price of the toothpaste from the dispenser. So, customers are incentivised to BYO empty containers (which can be any container, but could also be an empty, previously purchased prefilled toothpaste jar) in order to use the dispenser.



Charging for single-use refill containers, or retailing durable refill containers as the only refill container option. Both methods help to incentivise customers either to reuse the provided containers they have paid for on future occasions, or to avoid the associated cost altogether by bringing their own containers to fill. Workshop Brewing Co in Raglan encourages locals to buy their beer by refilling direct from the brewery in order to avoid the need for single-use packaging (they incentivise this through marketing and comms and through pricing, as beer bought through the refillery is the cheapest option per litre). Although Workshop does not operate a returnables system for customer refill containers, the only containers they have available for customers who do not bring their own are glass flagons or stainless steel growlers that customers must purchase. The cheapest option is $15 for a 1L glass flagon, while the 2L insulated stainless steel growler is $60. These prices accord a value to the containers and create a strong incentive for customers to reuse them rather than purchasing a new one every time they come to refill at the brewery taps.

Adopting signage or other communication to let customers know that BYO containers are allowed and/or encouraged. In some retail contexts, such as deli counters, bakeries or butchers, presenting products unpackaged is standard practice. However, the act of bringing one's own container in these contexts is still not the norm. Consequently, customers either may not think to BYO, or might even feel social awkwardness about doing so. Therefore, letting customers know that BYO containers are welcomed plays a role in lifting reuse rates. Previously, Countdown/Woolworths supermarkets had hosted signage welcoming BYO containers at their deli counters since instituting the practice in 2019 (Blumhardt, 2022a, section 2.4 | p.6), although the use of signs is no longer common practice. Meanwhile, Wholly Cow! Butchery in Cambridge has frequent over the counter conversations with customers to encourage BYO containers for cuts of meat. They also communicate that BYO containers are encouraged on their website.

Offering incentives to BYO containers, e.g. promotions, discounts and rewards. A number of outlets institute rewards when customers BYO containers. For example, all Bin Inn franchisees offer a 5% discount to customers who bring their own containers to fill into. Other businesses may run or participate in draws or other incentives for customers to BYO. For example, in Waipā, the Council partnered with local butchers across the district during Plastic Free July to run a draw of vouchers for customers that brought their own containers.

2.3 Reusable transport/transit packaging

Table 2.3 lists the reusable transport packaging systems that operate in Waikato within the FMCG and groceries supply chain, with a focus on the phases of transit associated with getting finished products from producers/growers to retail outlets/consumers.

Many of these systems have national reach, with the system operators being companies that oversee a national network of distribution, service centres, wash plants and logistics, some of which may be in Waikato. The users/customers of these large systems often also operate nationally, but have Waikato franchisees or operations (e.g. producers that access the packaging to move their products around, or retailers who receive the products on the packaging, e.g. supermarkets).

The table categorises the various systems by the organisation that operates them. These system operators include third party packaging/logistics companies, as well as producers or suppliers that operate vertically-integrated B2B reusable packaging systems for their products. In the case of companies operating national networks, we have included information about the nature of their Waikato operations, such as whether the company has a physical presence in Waikato and what activities are undertaken in that location. Some of the referenced companies have no physical base in Waikato, but are included if their system services organisations in Waikato (e.g. suppliers, retailers or product end-users).

As with the other tables in this report, Table 2.3 only lists those reusable transport packaging systems operating in the **FMCG/groceries** supply chain. Other system operators for reusable transit packaging in other sectors (e.g. manufacturing, industrial, healthcare or agricultural sectors), also exist in the Waikato region, but are not part of this report.

Table 2.3: Reusable transport/transit packaging systems operating in the Waikato region

System operator	Reusable transport packaging types	System operator's role in system	FMCG product or sector	Geographical scope of business operations and Waikato activities	Description of packaging units	Returns incentive/business model
CHEP	Pallets, produce crates, beverage trays, IBCs	Third-party packaging/ logistics company	Pallets: Groceries and big box retail Crates: produce Beverage trays: protecting beverages in transit to retailers IBCs: transport of bulk product to manufacturing industries of FMCG products	Nationwide operations (service centres in Auckland, Hastings, Palmerston North, Wellington, Christchurch, Dunedin) Specific activities in Waikato: • One depot (Hamilton) for storage and distribution of returned packaging. • End-users of the products carried on or in the packaging (e.g. retailers) are located across Waikato	Pallets: Wood Produce crates: plastic, various sizes and specifications, including some fixed and some foldable/collapsible Beverage trays: plastic (can carry 24 x 1.25L bottles) IBCs: plastic, 1000L capacity, designed to hold an inner disposable liner bag	Daily use charge Bond to cover non-returned items
Dreamview Creamery	Milk crates	Producer operating vertically integrated system	Milk and yogurt	Milk production and crate storage and maintenance in Raglan Sales across Waikato, Bay of Plenty and Auckland	Wooden crate that carries 12 milk bottles or 9 jars of yogurt, made and maintained in-house from untreated plywood	Crates are picked up when new deliveries are made No incentive, trust-based system
Fonterra brands	Milk crates	Producer operating vertically integrated system	Dairy products	Milk and cream manufactured all over New Zealand - various brands Shipped in crates to retailers nationwide, including in Waikato No central logistics process for crate returns, the network of franchisees in the Waikato region manage the delivery of product, and the returns process of the crates back to manufacturing sites	Plastic (HDPE) H-crates	Crates are picked up when new deliveries are made No incentive, trust-based system
Goodman Fielder brands	Milk crates and bread crates/trays	Producer operating vertically integrated system	Fresh bread, milk and cream	Bread, milk and cream manufactured all over New Zealand - various brands Shipped in crates to retailers nationwide, including in Waikato	Industry standard plastic (PP) crates - large flat crates for bread (not collapsible) that double as the shelf in the supermarkets, and medium-sized, H-crates for milk and cream	Crates are picked up when new deliveries are made
Kaipaki Dairies	Milk crates	Producer (vertically integrated system)	Milk	Milk production and crate storage and cleaning in Waikato Sales across Waikato, Bay of Plenty, Auckland and Wellington	Plastic crates	Crates are picked up when new deliveries are made No incentive; trust-based system

System operator	Reusable transport packaging types	System operator's role in system	FMCG product or sector	Geographical scope of business operations and Waikato activities	Description of packaging units	Returns incentive/business model
Loscam New Zealand & Loscam New Zealand Fresh	Loscam New Zealand: pallets Loscam New Zealand Fresh: produce crates	Third-party packaging/ logistics company	Pallets: groceries and other consumer products Crates: fresh produce	Nationwide operations (including a network of depots for collection, washing/reconditioning) Specific activities in Waikato: one depot for pallets and one depot for crates • End-users of the products carried on or in the packaging (e.g. retailers) are located across Waikato	Pallets: wood or plastic Produce crates: plastic, foldable and stackable, various sizes and specifications	Not determined
Viscount FCC	Pallets, produce crates and bins	Third-party packaging/ logistics company	Fresh produce	Nationwide operations (wash plants/service centres in Auckland, Palmerston North, Christchurch) Specific activities in Waikato: one depot/collection point for returned packaging in Hamilton (site owned by third-party T&G) • End-users of the products carried on or in the packaging (e.g. retailers) are located across Waikato	Pallets: wood Produce crates: plastic, various sizes and specifications, some fixed and some foldable/collapsible Bins: plastic, two sizes - 700L and 350L capacity, both foldable/ collapsible	One-off hire fee paid by the grower for use of the packaging Deposit/bond on all packaging units to incentivise return and/or cover the cost of any missing items
Volcanic Creamery	Milk crates	Producer (vertically integrated system)	Milk	Milk transported in the reusable packaging is stocked in some Waikato-based retailers (in Taupō) Producer is based in Rotorua	Plastic crates that hold 15 x 1L bottles	Crates are picked up when new deliveries are made No incentive; trust-based system

System operator	Reusable transport packaging types	System operator's role in system	FMCG product or sector	Geographical scope of business operations and Waikato activities	Description of packaging units	Returns incentive/business model
Workshop Brewing	Reusable can holders and reusable crates	Producer (vertically-integrated system) Support from a third-party (Xtreme Zero Waste) for the collection of the reusable can holders	Beer	Brewery is located in Raglan Beer transported in the reusable packaging is available for purchase from off-license retailers in Raglan and Hamilton	Can holders: plastic (HDPE) and hold six cans Crates: plastic. The crates are repurposed crates from an overseas beer brand who uses the crates to ship their bottled beer to a Hamilton liquor retailer. After unpackaging, the crates would otherwise be sent for recycling in NZ. Instead, the retailer allows Workshop Brewing to collect the empty crates. Workshop rebrands them, and uses them as their fleet of reusable transport crates for their bottled beer.	Crates are picked up when new deliveries are made No incentive; trust-based system Can holders can be returned in one of three ways: 1. Directly to Workshop Brewing 2. To a dedicated drop-off receptacle at the Xtreme Zero Waste site 3. Via the household kerbside recycling collection crate (picked up by Xtreme Zero Waste, who places collected holders in the dedicated receptacle at their site, for Workshop Brewing Co to pick up) No incentive; trust-based system. Workshop Brewing pays Xtreme Zero Waste 10c per can holder collected

REUSABLE TRANSPORT PACKAGING CASE STUDY: VISCOUNT FCC

Many of the reusable transport packaging systems operating in Waikato are mature, scaled systems that operate within major retail supply chains, such as supermarkets and big box stores. The operators of these systems are usually nationally-focused and based outside of Waikato (often in Auckland). However, they tend to host at least one collection, sorting or distribution centre in Waikato, given large quantities of reusable transport packaging pass through the region on a daily basis to service the many Waikato-based users of the packaging (whether growers or retailers).

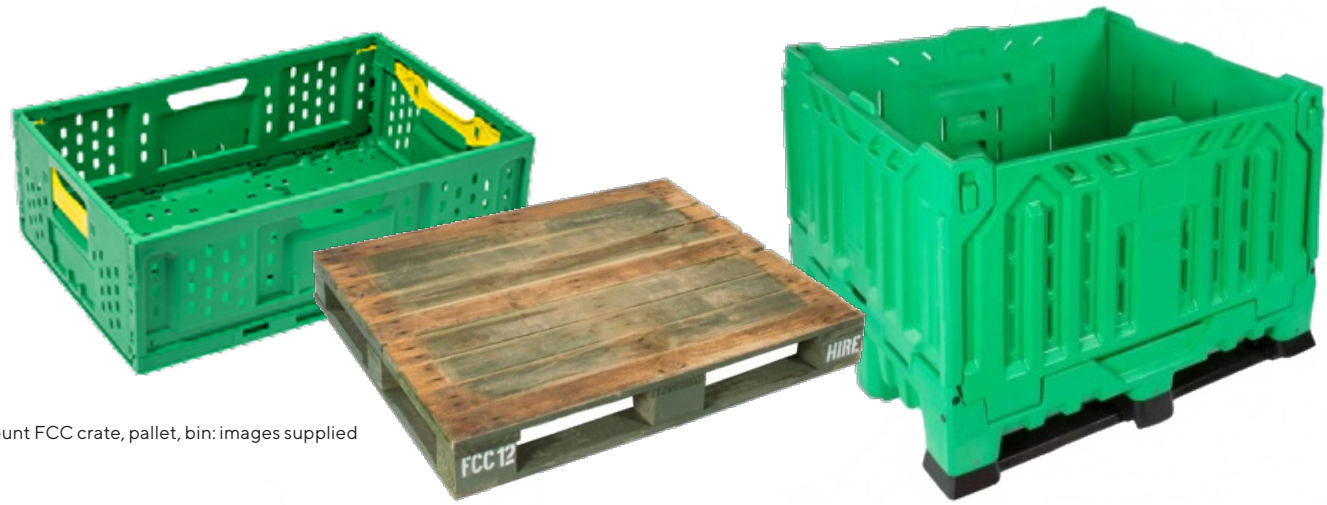
One such operator is Viscount FCC – a dedicated reusable packaging company that runs nationwide reusable transport packaging systems for fresh produce growers supplying Foodstuffs. The Waikato proportion of the business is estimated to be 13 percent.

Viscount FCC is headquartered in Auckland, along with its main packaging washing and service centre, which was officially opened in August 2023. Viscount has two other washing and service centres (one in Palmerston North and one in Christchurch). In Waikato, Viscount has one depot/collection point in Hamilton, which operates from a site owned by a third-party (Turners & Growers, a large distributor of fresh produce). At this site, returned packaging from retailers is collected and consolidated, before being sent to Auckland to be sanitised and prepared for redistribution. Viscount utilises third-party logistics companies to transport empty packaging.

Viscount FCC carries fleets of three types of reusable packaging to transport fresh produce – pallets, crates and large bins. Pallets are wooden, in one standard size, while the crates and bins are plastic and come in a variety of sizes (crates range from from 23L to 63L capacity, while bins are either 350L or 700L capacity). Bins and crates have design features that support transport efficiency: crates are easily stackable when full; when empty, fixed crates nest inside each other, while collapsible bins and crates are flattened to take up less truck space in return journeys.

Financial mechanisms ensure Viscount's system supports both a sustainable business model, and low loss rates for packaging. Growers pay a one-off hire fee for the use of the packaging instead of purchasing single-use alternatives like cardboard boxes. In addition, a deposit/bond is placed on all packaging units. This deposit/bond is transferred with the packaging as it changes hands throughout the supply chain, so that each supply chain actor pays the deposit/bond to the organisation from whom they have received the packaging, and redeem the deposit from the next organisation in the supply chain. This system is essential for maintaining high packaging return rates and for covering the cost of any missing items.

Overall, Viscount FCC's reusable transport packaging system displaces large quantities of single-use packaging and therefore has considerable packaging waste avoidance impacts. For example, each crate in the Viscount FCC pool replaces the equivalent of 140 single-use cardboard boxes. This packaging avoidance translates to reductions in waste, emissions and natural resource usage, compared to a packaging system based on single-use alternatives.



Viscount FCC crate, pallet, bin: images supplied

3 HIGH-LEVEL TRENDS AND THEMES FROM THE STOCKTAKE

3.1 Reusable packaging system prevalence in Waikato

Quantifying the packaging avoidance impact or the market share of reusable packaging systems for FMCG/grocery products in Waikato was beyond the scope of this study. However, it is possible to provide some quantification of the prevalence and geographical location of systems in the region.

3.1.1 Returnable Packaging

At least **26** discrete returnable packaging systems operate and/or are available in Waikato for FMCG or grocery products. Of these:

- **Thirteen** originate from Waikato-based producers or retailers (NB: the individually operated keg fleets of the ~10 breweries in the region have been counted as one system). Four in the Waikato District, two in Waipā, one in Matamata-Piako, two in Thames-Coromandel, two in Hamilton, one in Hauraki. The 10 breweries are spread across the areas of several territorial authorities.
- **Six** products packaged in returnable packaging are operated by producers from outside of Waikato. These are brought to the region by local retailers who choose to stock products in returnable packaging and are willing to play some role in the reverse logistics. For example, acting as a return point for empty containers, offering their customers credits for container returns, and/or arranging the shipping to get containers back to the producer.
- **Seven** systems are operated by third-party reusable packaging/logistics providers, none of whom are Waikato-based. The products contained may be from local Waikato producers, or producers outside of Waikato.
- **Two** systems otherwise run by producers or retailers receive some support from third-parties in either the acquisition of packaging units or the collection of empty containers.

3.1.2 Refill by Bulk Dispenser Systems

There are at least **60** locations across Waikato hosting one or more refill by bulk dispenser system (NB: this figure does not include supermarkets, bakers, greengrocers or farmers markets, which would greatly increase the numbers). Of these:

- Twenty are in Hamilton City, 11 are in Waipā, 10 are in Thames-Coromandel, 7 are in Raglan, 5 are in Taupō, 3 in Matamata-Piako and 2 in Hauraki.
- There are 18 beverage dispensers (15 for alcohol and 3 for milk)
- Twenty-two are speciality grocers with substantial refill by bulk dispenser sections as part of their business.

Retailers are critical to the establishment and maintenance of refill by bulk dispenser systems in Waikato. The overwhelming majority of the listed systems are either installed in the retail space as a critical part of the retailer's retail model, or refill stations bespoke to a particular product that are hosted by third-party retailers. The exception is beverages where most of the dispensing systems are hosted by the producer on their site, e.g. the brewery or farmgate.

3.1.3 Reusable Transport/Transit Packaging

We have identified **nine** operators of reusable transport packaging systems in the groceries and FMCG sector in Waikato, but this is likely an underrepresentation. We expect there are more vertically-integrated producer-led systems that we have not identified because they occur "behind-the-scenes" without the operators promoting them.

Of the identified systems, **three** are third-party operated national systems with significant scale and reach, whose operators specialise in reusable packaging systems/asset management. The critical infrastructure for these systems, such as packaging reconditioning or service centres, are all located outside of Waikato. However, given the scale of the operations, all three systems do have depots for collection/distribution within the region.

3.2 Qualitative trends and themes

Some key trends emerged from the preparation of this stocktake, from which some high-level overarching themes can be inferred about: the nature of reusable packaging systems in Waikato, some of the drivers for their adoption, their state of health (e.g. resilience), and other related insights.

3.2.1 Returnables trends

B2C returnable packaging systems in Waikato are overwhelmingly vertically-integrated systems managed by small businesses (less than 20 employees). As such, these systems can be expected to face challenges to growth and efficiency optimisation due to lack of scale, inconsistency of return processes and return locations between systems, and use of bespoke packaging rather than standardised units that are shareable between different companies.

This trend is also observed nationally and reflects the realities of the current status quo packaging environment, which is structured for single-use (Blumhardt, 2022a; Wilson and Lewis, 2023). New Zealand lacks standardised reuse returns infrastructure or incentives, making B2C returnables logistically challenging, costly and more inconvenient. This environment is not conducive to the creation of third-party operated pooled systems, which have proven successful in driving the efficacy of reusable packaging systems, e.g. reusable transport packaging, B2B returnables such as kegs, or ABC's Swappa Crates.

In the absence of third-party systems, the overrepresentation of smaller businesses in vertically-integrated systems could stem from various factors. Larger, well-established and/or cost-driven businesses may be disinclined to adopt vertically-integrated systems if these would require new reverse logistics processes and increase supply chain costs. Such businesses can also suffer from path dependency, where previous investment in single-use systems and infrastructure becomes a significant barrier to reusable packaging. In comparison, smaller businesses can be more nimble to adopt innovations, more values-driven, and more inclined to compete at the premium end of the market. As such, these businesses may adopt reusable packaging, despite increased cost and inconvenience, because they feel it is 'the right thing to do' and/or because their customers are willing to pay higher prices for an improved sustainability service.

In light of the above, opportunities exist to increase collaboration between companies to share packaging and to develop a more consistent network of reusable packaging return points. This could be enabled through partnerships with the resource recovery network. However, government policy to level the playing field between reusable and single-use packaging systems is also a pressing need. Additionally, because collaboration can come at a cost and should occur at scale to ensure consistency, financial and other types of support from councils and/or large producers, distributors or retailers to facilitate collaboration would be needed because small businesses cannot be expected to finance or achieve collaboration in isolation.

The returns process in most B2C systems tends to involve returning containers to point of sale or consumer use of couriers; we found no examples of TAs or the resource recovery system hosting return points or collections for reusable packaging (except for Xtreme Zero Waste collecting reusable beer can holders in their kerbside recycling collections on behalf of Workshop Brewing). Return-to-retail is an efficient modality for packaging returns when applied consistently. However, consistency relies on retailer participation and we found little evidence of larger retailers, such as supermarkets, operating B2C returnables systems. Where products can only be returned to select retail stockists, the integrity of the reusable packaging system is compromised. Meanwhile, if products are only stocked in retailers willing to accept returns, this results in silofication of reusable packaging. Expecting consumers to courier packaging is burdensome and economically and environmentally inefficient. Being able to accept returnable packaging in ways that more closely reflect single-use packaging recovery methods would be beneficial, such as via the resource recovery system and/or a dedicated, shared network of drop-off points.

B2B returnable packaging is more common in HoReCa-supplier relationships than supplier-retailer relationships. This could be because Refill by Bulk Dispenser vending systems suited to established B2B returnable bulk packaging (e.g. taps for kegs) are less common in retail settings. Meanwhile, the more common retail-specific Refill by Bulk Dispenser vending systems, like bulk bins, lack distributors who offer bulk product in returnable packaging. One exception is reusable plastic crates for fresh produce (however, these are categorised as reusable transport packaging in this index). There is an opportunity for distributors of wholefoods and janitorial products (some of whom are based in Waikato) to develop B2B returnable systems for retail bulk bin supplies.

3.2.2 Refill by Bulk Dispenser trends

Refill by Bulk Dispenser vending systems are more widely available for a larger range of products than B2C returnable packaging options, but they are mostly only partial reuse systems. For most of the identified Refill by Bulk Dispenser systems in Waikato, the packaging provided to consumers to fill into is single-use or not part of a returnable system. Therefore, unless customers BYO containers to refill, the opportunity for reuse to prevent B2C single-use packaging is lost. Nevertheless, refill system hotspots (especially in Hamilton, Waipā, Thames-Coromandel and Waikato Districts) are creating enabling environments for proactive, waste-aware customers who do want the choice of unpackaged products, specifically so that they can use their own containers. An opportunity now exists to do more to drive reuse in these areas through efforts like phasing-out single-use options entirely, disincentivisng the use of single-use containers by putting a charge on them, and/or developing returnable systems for refill containers.

The prevalence of Refill by Bulk Dispenser systems does not seem primarily motivated by waste minimisation. Where waste minimisation is a priority for retailers with Refill by Bulk Dispenser options, this will usually be evidenced by reusable packaging systems being the primary mode of packaging or retailing product (rather than simply a value-added line in a larger single-use packaged offering). However, such examples are the minority in Waikato, e.g. only two dedicated zero waste grocers. Other motivations for offering Refill by Bulk Dispenser retail options could relate to product pricing, value-add, brand differentiation, or the ability for customers to self-select product or control purchasing quantity. If waste minimisation is not the primary motivation for adopting Refill by Bulk Dispenser vending systems, then in the case of partial reuse systems, system operators may not be proactive in making sustained efforts to reduce more waste by developing B2B or B2C reuse elements (i.e. returnable dispensers/bulk containers or reused consumer refill packaging). This suggests a need to raise the profile of Refill by Bulk Dispenser systems as a waste minimisation strategy, particularly in official public waste minimisation communications and planning.

3.2.3 Reusable Transport Packaging trends

Reusable Transport/Transit Packaging systems are the most mature and scaled reusable packaging systems in Waikato, which are often managed by established third-party operators. However, it is notable that this category of reusable packaging also featured scaled, vertically-integrated systems that operate nationally, such as the reusable crate systems for Fonterra and Goodman Fielder. Regardless, all scaled systems (whether third-party or vertically-integrated) predominantly serve large growers, suppliers, brands and/or retailers. This may be because the volumes of product that these businesses move are large enough to enable reusable transport packaging systems to operate more efficiently than single-use equivalents. However, it also means that smaller suppliers, brands and retailers may struggle to access the systems for their products or retail stores.

Despite the scale of a number of systems, the scope of reusable transport packaging types and the key products transported are quite narrow. The packaging types identified were pallets, crates and larger bins. Crates and bins are predominantly used to transport and contain fresh produce, and pre-packed milk and bread. Furthermore, while the reusable transport packaging sector features several system operators, these operators currently compete to provide similar offerings

within the same key groceries supply chains. There is a lack of successful innovation in novel reusable transport packaging options that would displace otherwise prevalent uses of single-use packaging, e.g. pallet wrap or the cardboard boxes used to carry most processed, pre-packaged grocery items. We note that Waikato is home to a group of companies who are pioneering reusable pallet wrap and protective transit packaging for their products (Profile Group). However, they operate in the manufacturing sector so were not included in this study. Furthermore, they manage a vertically-integrated supply chain through which the reusable wrap can move, which differs from many of the pallet and crate systems in the grocery sector that are shared horizontally across producers and retailers.

3.2.4 General trends

Some products are better served by reusable packaging systems than others. For Waikato consumers, the products that are most easily accessible in reusable packaging systems are beer, milk, fresh produce and wholefoods. In contrast, well-known branded grocery products or processed, prepared or snack food products are not commonly available in consumer-facing reusable packaging systems. These products also lack reusable transport options to replace the single-use cardboard boxes they are usually shipped in.

Reusable packaging systems are not spread evenly across the region. Based on our research, the areas with the greatest prevalence of reusable packaging systems are Hamilton City, and Waipā, Waikato and Thames-Coromandel districts. The districts of Otorohanga, Waitomo and South Waikato showed up as having the least opportunities to access products in reusable packaging systems.

Māori businesses are underrepresented in businesses delivering reusable packaging systems. While acknowledging that some businesses in the stocktake may be led by individuals who whakapapa Māori without this being advertised and/or known to the research team, we found few overtly Māori-led businesses producing goods that fell within the scope of this study who were exploring or operating reusable packaging systems. Of those that were identified, some were unable to provide clarifying details and could not therefore be included in the stocktake.

Māori underrepresentation in the use of reusable packaging systems should not be interpreted as a disinterest in reuse. Colonisation, which continues today, has resulted in the theft of Māori land, and suppression of culture and language. Māori have also endured the imposition of a foreign social paradigm (living under capitalism and colonialism), which focuses on making profits. Colonisation also means Māori face more than their fair share of cultural, economic, social, and environmental inequities. The Māori worldview, common with indigenous worldviews globally, recognises people as part of nature. The underrepresentation of Māori businesses utilising reusable packaging systems needs to be understood in the context of colonisation.

Across our research projects, Reuse Aotearoa has consistently found that reusable packaging systems make up a tiny portion of New Zealand's market share because operating reusable packaging systems under current economic settings is very difficult for any business, even in the best of circumstances. Māori businesses face all these same challenges, along with a host of additional challenges that relate to the pressures of surviving and resisting colonisation and oppression, which create competing priorities and multiple demands on time. In addition, to succeed in the current system, many Māori and iwi group holding companies have adopted Western profit driven models of business, which as noted, often do not easily accommodate sustainable business models like reusable packaging. Specific, targeted financial and practical support to Māori businesses to implement reuse may help to lift the number of Māori businesses operating reusable packaging systems in the region.

Reusable packaging systems are often the "best kept secret" of the businesses using them. As a desktop-based study reliant on publicly available information, it was noticeable how few of the businesses mentioned in this stocktake have effective communications about the reusable packaging systems they use and operate. Given how much effort (including time and financial

resources) goes into making these systems work, along with increased consumer demand and expectation that brands increase their sustainability efforts, including in relation to plastic usage and overpackaging (Kantar, 2022; Kantar, 2023), one might expect that businesses using or operating reusable packaging systems would actively share more about their reusable packaging on their websites, social media communications and in their sustainability reporting.

In the case of Reusable Transport/Transit Packaging and some B2B Returnable Packaging, the lack of discussion about use of, or participation in, these systems may be because: the motivations for adopting this packaging primarily relates to efficiency and cost saving rather than sustainability; the packaging occurs "behind-the-scenes" so it is less easily marketable to consumers; and/or it might be "how it's always been done" so it is not perceived as novel, innovative and worth of promoting. In the case of B2C Returnable Packaging or Refill by Bulk Dispenser systems, the obscurity may be because the small businesses that operate them lack the capacity and marketing budget to adequately promote them. This is especially the case for vertically-integrated systems, since the business' primary focus is producing, distributing and marketing the product, rather than the packaging it comes in.

The COVID pandemic has negatively impacted upon the prevalence of some reusable packaging systems in the region, due to changes in packaging and production/consumption patterns during lockdown, and the pressure of the post-lockdown economic environment on SMEs. For example, Waikato has seen a reduction in the number of off-license retailers that offer Refill by Bulk Dispenser options for beverages, such as beer. Prior to the pandemic, taps in such retailers were more common, especially for craft beer sales. However, in the years following the lockdowns many such taps were uninstalled due to a drop in sales volume. This drop in sales volume was partly because of decreased consumer demand for purchasing beer on tap (based largely on unsubstantiated hygiene concerns). A more significant factor could be that the craft breweries that were usually featured on retailer taps increased their use of cans over lockdowns in order to maintain sales while hospitality outlets (who would have previously received beer in kegs) were unable to open. This created new packaging, production and supply patterns focused on increased use of pre-filled cans, which has continued, post-lockdown.

The long-term viability of reusable packaging systems in Waikato is impacted by the fact that many of the businesses operating them are small- (less than 20 employees) or medium- (20-49 employees) sized. Generally, the smaller the business, the lower the survival rate (Ministry of Business, Innovation and Employment, 2022). Add to this the increased pressures of the current economic environment, which may be further reducing the resilience of some SMEs to shocks (such as increased costs), and therefore affecting their overall viability, as well as the ability to maintain brick and mortar stores.

Ultimately, the insecurity of SMEs increases the precarity of certain reusable packaging systems types. As has been previously noted, smaller businesses dominate the provision of both B2C Returnable Packaging systems and the waste-minimisation-oriented Refill by Bulk Dispenser models. Consequently, the fate of these reusable packaging systems is often intertwined with, and dependent on, the fate of smaller enterprises. In Waikato, particular reusable packaging systems have diminished in prevalence when the SMEs who hosted them have closed down, or switched from brick and mortar premises to online settings that are less suited to systems like Refill by Bulk Dispenser. For example, in the last 3 years, Waikato has seen the closure of six dedicated zero waste or low-waste grocery brick and mortar stores (The StoreRoom in Te Awamutu, Aspire Refillery in Whangamatā, SWOP in Raglan, Thames St Pantry in Morrinsville, The Fillery in Whitianga (which has switched to online-only), and The Source Wholefoods chain, which had a branch in Taupō). As these retailers are also often stockists and return points for B2C returnable products, their closure has a knock-on effect for these producers' viability and the prevalence of their reusable packaging systems in the region. This observation would suggest that regional policies aimed at fostering small businesses and localised economies could have the co-benefit of supporting reusable packaging system resilience.

Photo by Josh Tere on Unsplash

4 CONCLUSION

Reusable packaging systems have a presence in grocery and FMCG supply chains across the Waikato region in both consumer-facing retail contexts, and behind-the-scenes in B2B transactions. We identified almost 100 discrete reusable packaging systems crossing over the three main categories of Returnable Packaging, Refill by Bulk Dispenser and Reusable Transport Packaging. The products most likely to be contained in some type of primary or secondary reusable packaging are fresh produce, milk, beer, wholefoods and cleaning products.

The systems operating at the largest scale are Reusable Transport Packaging systems, operated by businesses headquartered outside of Waikato. Business-to-consumer returnable packaging systems are most likely to be vertically-integrated systems operated by small producers based both inside and outside Waikato. Retailers are critical to all reusable packaging systems, but particularly drive Refill by Bulk Dispenser models. The latter are mostly partial reuse systems where opportunity exists to increase returnable elements (or phase out single-use elements) on either (or both) the B2B and B2C sides of the transaction.

Overall, reusable packaging systems in Waikato, as in other parts of New Zealand, are available for those consumers who seek them out, especially in the hot spots of Hamilton City, and Waipā, Waikato and Thames-Coromandel districts. These systems are effective for reducing B2C packaging for proactive consumers who BYO containers for refills or are willing to go the extra mile to return empty packaging from returnable systems. However, consumer-facing reusable packaging systems are not well-integrated in mainstream grocery retailers, nor are they well-supported by established resource recovery systems, post-consumption. Furthermore, most consumer-facing systems are vulnerable to the precarity of the small businesses that operate them (whether producers or retailers). In B2B contexts, reusable transport packaging systems operate well for reusable pallets, and in the fresh produce, milk and bread supply chains. However, gaps exist in services to displace single-use tertiary packaging, like reusable pallet wrap, and secondary packaging, like the cardboard boxes used to ship most products on supermarket shelves.

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