

# WASTE BYTES

## University of Otago Food Waste Innovation Newsletter 7



### REDUCING THE VOLUME AND IMPACT OF FOOD WASTE.

Food Waste Innovation measures food waste, develops reduction strategies, applies innovative technology, and works to modify producer and consumer behaviour. We work collaboratively with stakeholders and supporters in the public and private sectors.

### Note from the Manager

*Trixie Croad*

Kia ora koutou Food Waste Innovation whānau, Miranda has passed the baton to me for this edition of the *Director's Note*. This is partly to change things up, but also to give me a chance to say goodbye, as I will be leaving Food Waste

Innovation and Aotearoa for Europe at the end of April to embark on my next adventure.

Working with Miranda, Phil, Sheila, and Francesca, as well as the wider Food Waste Innovation whānau, over the past two and a half years in this role has been an incredible privilege. I have particularly enjoyed the balance between administration and outreach, along with direct involvement in food waste research. As well as completing my own Masters research in food waste, I have worked directly on projects such as the [NZ Food Waste Roadmap](#) and the subsequent [publication](#) of this research and, as you will read on page 3, research understanding food waste in aged care communities. I have also really enjoyed supporting and supervising various student projects. Recently I was given the opportunity to join the editorial board of Pūhau ana te rā: Tailwinds, a new Journal with a focus on sustainability and fostering the work of students. I am excited to continue to be involved in student research in this capacity.

Although 2023 it set to be an exciting year for food waste action in Aotearoa, the year has begun in such a devastating way for some. My

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heart goes out to all those effected by the destruction caused by Cyclone Gabriel. As a food waste researcher, it is especially devastating to see so many farmers lose their crops and, I feel, should serve as a stern reminder that we need to build resilience in our food systems. This is perhaps a timely reminder in a year full of food waste action. This year: The Ministry for the Environment are set to fund up to \$8.3m in food waste behaviour change projects in the household, business, and kaupapa Māori contexts; The Prime Minister's Chief Science Advisor's Office will complete their report series on food waste and food rescue; Aotearoa will establish a national food waste baseline; and the [Kai Commitment](#) will complete its first year of mahi. Part of me is gutted to be heading overseas just as it all kicks off, but I know New Zealand, and Food Waste Innovation, is in capable hands. I look forward to staying in touch and seeing the progress continue to grow.

Ka kite anō au i a koutou,  
Trixie

# SPOTLIGHTS

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## RESEARCHER SPOTLIGHT

**Ray O'Brien**  
**Head of Sustainability**



### What is your background?

I'm a Scotsman with an English wife, a Welsh daughter, a kiwi son, and an Irish name, who is very happy to have lived in Aotearoa for almost 20 years. I'm never sure if I'm a sustainability professional working in

education, or an education professional working in sustainability. In the past I've done a range of random things from being a Reindeer Herder to delivering adventure training for the military, but they all are anchored in learning. Learning that will lead to a better future is what really makes me tick.

### What is your leading research focus?

The design of learning experiences is the broad research area that interests me most. I say broad because that design doesn't stop when you leave the library or the lecture hall. It needs to include the whole complex experience of being a human. That's where living labs come in- when the university uses its own operations as a lab to create new learning. It's the triangle of operations, research, and student engagement in projects. Looking at the food waste in our residential colleges is a good example.

### What are you working on at the moment?

I have been working on a framework for designing learning that is more likely to contribute to a thriving future. The framework has four themes: active-decolonisation, embracing complexity, integration of futuring, and a focus on transformation. Designing and creating living labs around food are great example of contexts that integrate all four themes.

### What interests you about food waste?

While tasting at Emersons and enjoying fine meals that have been made from food waste are all attractors, I have to say that the closeness of research and student learning, to industry and community applications is the real draw card. It's a very applied area that can have immediate impact.

## POSTGRADUATE SPOTLIGHT

**Grace Clare**  
**Food Science**



### What is your research topic?

My research looks at quantifying the impact of food rescue organisations. Food rescue works to reduce food waste by collecting surplus from food providers such as supermarkets and cafes and distributing it to those in need. While these organisations are

making an important contribution, there needs to be more research on their social, environmental, and economic impacts, exploring future improvement.

### What brought you to Otago?

Originally from the North Island, I was drawn to the University of Otago to venture far away from home (no offence to my parents). I enjoyed science and also had a passion for food. When I found Food Science was an option, I knew it was a match. Being involved with Food Waste Innovation as a postgrad has shaped my interest in food sustainability and equality, driving my research focus.

### What is the purpose of your research?

My research aims to provide evidence of the impact of food rescue organisations in Aotearoa, to support the growth and development of the food rescue sector and expand on opportunities for improvement – ultimately increasing the effectiveness and efficiency of their service.

### What does your research involve?

I have conducted a Social Return on Investment (SROI) analysis for three food rescue organisations in Aotearoa in collaboration with the Aotearoa Food Rescue Alliance (AFRA). Along with my research team, Gradon Diprose and Louise Lee, we conducted 40 interviews with relevant stakeholders to understand and measure the social, environmental, and economic value created by each organisation. The results indicate for every dollar invested, there is a social return of \$4.5. The SROI analysis is a valuable tool for food rescue organisations to communicate their impact to funders and stakeholders. In my next research phase, I will explore strategies for food rescue organisations to increase their impact, particularly models for financial sustainability, by delving into the world of social enterprise.

# THEME NEWS

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## 2022 IMPACT REPORT

We have taken some time to reflect on and celebrate all the things Food Waste Innovation was able to achieve in 2022 and created an impact report to share. Thank you to everyone for your continued engagement in this kaupapa. We are excited and grateful to be able to play a role in shaping the journey ahead for food waste in this country, and are incredibly thankful to have you all along for the journey as well. he waka eke noa!

See the impact report on our website [HERE](#).

### Food Waste Innovation Impact Report 2022

Food Waste Innovation is a University of Otago Research Theme founded in 2020. We measure food waste, develop reduction strategies, apply innovative technologies, and work to modify producer and consumer behaviours. We work collaboratively with stakeholders and supporters in the public and private sector. Visit our website [foodwaste-otago.org](http://foodwaste-otago.org) or email us at [food.waste@otago.ac.nz](mailto:food.waste@otago.ac.nz)

#### Outreach

We started a LinkedIn page which now has 452 followers.



We also had 52 people join our mailing list, which now totals of 245. Ranging from the general public, to government and industry representatives, to fellow researchers in this space.



Our Investigators gave 34 talks to various audiences on topics relating to food waste research.



Food Waste Innovation Investigators featured in 15 news stories, including on NewsHub, the Otago Daily Times, and Stuff NZ.



#### Research

We produced 22 new resources. These included 8 videos and podcasts, 3 infographics, 4 essays and reports 7 academic publications.

\*Note that some of these resources are not publicly available.



17 food waste related research projects were completed, including 10 postgraduate and 4 summer student projects, and 3 other research projects.



We received \$17,000 in funding for student research projects. A notable success was the award of \$1 million over three years from an MBEI endeavor fund to investigate the recovery of high value, natural, flavour compounds from various waste streams produced by processing plants.

#### People



We welcomed 9 new Principal and Associate Investigators and 4 new postgraduate students. We now have a total of 57 Investigators in our team with a huge variety of expertise, all working in different ways to tackle food waste.

#### Events



We held 9 events.

A highlight was hosting the Prime Minister's Chief Science Advisor and her team in July, as part of their investigation into food waste in New Zealand. During this visit, among other activities, we put on a panel discussion with NZ Champions of 12.3 "Envisioning an Aotearoa without food waste".

"The trip gave us so much to absorb, and the insights shared will help us bring together the evidence base in context and shape our recommendations."

Dame Juliet Gerrard



## SUMMER RESEARCH PROJECTS

**Summer students:** Food Waste Innovation was involved in two summer student projects this year, both commissioned by external organisations. Both students then presented their work at the Pūhau ana te rā student symposium alongside other sustainability related summer student projects.

Demi Lawrence, is a 3rd year Human Geography student who completed a summer research project measuring plate waste at Dunedin Hospital and potential solutions for reduction and diversion from landfill. The findings from Demi's research will be reported back to management at the current Dunedin Hospital, but will also be used to help inform planning of foodservice in the New Dunedin Hospital.

Grace Petersen, before starting her Masters in Human Nutrition, worked with Onions New Zealand for the summer to investigate the potential food loss and waste in the onion growing industry. Grace interviewed 22 onion growers from around Aotearoa and reported back to Onions NZ on the estimated volumes and nature of onion waste at each onion farm, as well as the destinations of this waste and potential to add value to these waste streams. This research will be used by the industry to understand the feasibility of upcycling this waste into value added products such as onion powder.

**Food waste at Arvida aged care:** Also over the summer, researcher and Theme Manager Trixie Croad also completed a research project for aged care provider Arvida. Trixie, assisted by Arvida sustainability student Melissa Barnes, conducted food waste audits and focus groups at two Arvida retirement villages in order to help the company understand the volumes and nature of food waste in their facilities and develop some recommendations for reduction and diversion from landfill.

Right: Trixie Croad and Melissa Barnes conducting food waste audits at Arvida aged care facilities.



Below: (L to R) Onion waste at a pakhouse in the Hawkes Bay. Plate waste from Dunedin Hospital sorted by type of food.



Measurement of food loss and waste in these three contexts is timely, as it will feed into the New Zealand Food Waste Baseline, a project to gather estimates of New Zealand's food waste across the supply chain, set to commence data collection in the coming months.

## OTHER NEWS

**Investigator Achievements:** We would like to congratulate two of our Food Waste Innovation Principal Investigators on promotions they received earlier this year. Our Director Miranda Miroso was promoted to Professor and Graham Eyres was promoted to Associate Professor. Miranda has also taken on the role of Head of Department of Food Science at the University of Otago this year. Also a great achievement, Our Metrics and Management Lead Professor Sheila Skeaff was awarded University of Otago Students Association (OUSA) 'Supervisor of the Year'. See the story [HERE](#).

**Kai Commitment launched:** At the end of 2022, NZ Champions of 12.3 launched its first major program in the Kai Commitment, a voluntary agreement for New Zealand food businesses committed to reducing their food waste. Initial signatories include Fonterra, Silver Fern Farms, Goodman-Fielder, Countdown, Nestle, and Foodstuffs. Chair of Board of NZ Champions 12.3 Professor Miranda Miroso spoke alongside Prime Minister Jacinda Ardern at the Launch event in December. The Kai Commitment is modelled on existing voluntary agreements in the UK and Australia. Learn more on their website [HERE](#).



Miranda with then PM Jacinda Ardern at the Kai Commitment Launch

## NEW RESOURCES

**Upcycled foods: A nudge toward nutrition:** This publication is a perspective piece discussing opportunities for upcycled food manufacturers to produce more nutritious products. View the resource [HERE](#).

**Slow Food Youth Otago (SFYO) at Clubs Day:** Our resident food sustainability student group SFYO were back in action for 2023 at the Clubs and Societies Day during Orientation week in February. The new team were out recruiting members with a smoothie bike. They rescued some very ripe banana's from Veggie Boys and gave out smoothies to anyone willing to work for it. We are excited to see what the new cohort of students get up to this year, they already have lots of plans. Keep an eye on their instagram page [HERE](#) to stay in the loop too.



On left, SFYO's Jasmine and Supriya at Clubs Day

**Food Waste Action Week:** The second week of March (6th-12th) was [Food Waste Action Week](#). To celebrate, we had a special edition of our monthly Waste Bites Lunch. We embraced the theme of "Win, Don't Bin" and each brought a plate to share that utilised leftovers or seemingly inedible parts of food. We had foraged apples as crumble and muffins, carrot-top pesto, and tomato-ends chutney as well as excess produce from home gardens. Thanks to everyone who came along!



Kai shared at our Food Waste Action Week potluck lunch.



Investigators and students at our Food Waste Action Week potluck lunch.

**New PhD project funded:** Food Waste Innovation investigators will supervise a Food Science PhD student to work on a project co-funded by the Bioresource Processing Alliance (BPA), AgResearch and the University of Otago. This research will look at using cold plasma for offal disinfection.

**A systematic review of food loss and waste in China: Quantity, impacts and mediators:** This review provides a collation of 57 academic articles across disciplines and of both English and Chinese academic literature about FL&W in China. View this resource [HERE](#).

**Critical success factors of food waste reduction:** This research identified overarching critical success factors for food waste reduction practices across the food supply chain. View the resource [HERE](#).