



**FIGHT FOOD WASTE**  
Cooperative Research Centre

REDUCE - TRANSFORM - ENGAGE

# Findings from Australian Household Food Waste: In-home Research

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Australian Government  
Department of Industry, Science,  
Energy and Resources

**Business**  
Cooperative Research  
Centres Program



**FIGHT FOOD WASTE**  
Cooperative Research Centre  
REDUCE - TRANSFORM - ENGAGE

## VISION

An Australia without food waste

## MISSION

To **ENGAGE** with industry and consumers to **REDUCE** food waste across the supply chain and to **TRANSFORM** unavoidable waste into innovative products.

Australia-wide

Whole of food  
supply chain

10 years  
(2018-2028)

\$123 million  
(\$63m cash)

60 organisations



**ENGAGE**

## VISION

Ensuring Australians love food and stop wasting it

## MISSION

Providing evidence-based research to support changing the social norm so food is not wasted

Future industry  
leaders

Skilled workforce

Changed behaviour  
in households

# Project: Designing effective interventions to reduce household food waste



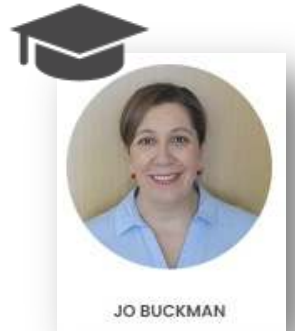
International expert



Federal Government

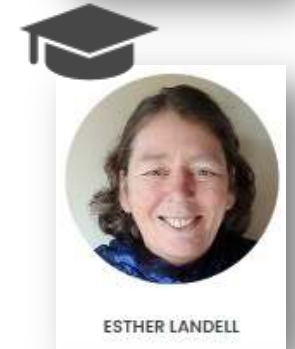


State/Territory Govts.  
*(97% of population)*



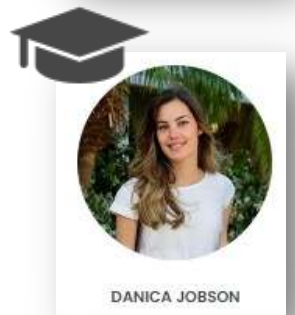
JO BUCKMAN

Supermarket  
*(40% of sales)*



ESTHER LANDELL

Food rescue charities  
*(85% of meals)*



DANICA JOBSON

University research partner



# In-home food waste research

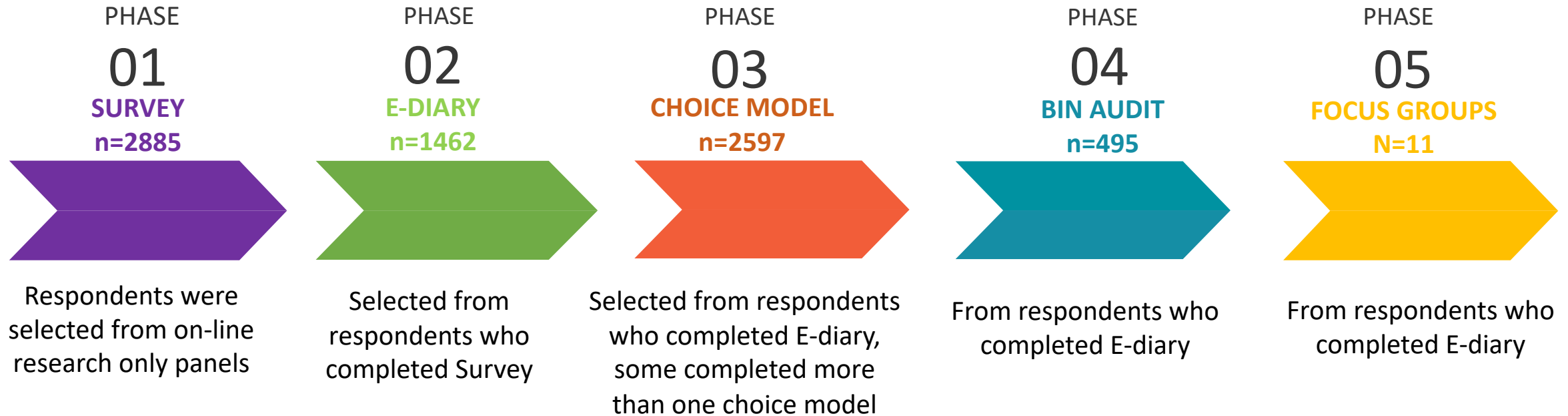
**Purpose of research was to gain a deep understanding of Australian consumers' food management and how this impacts on food waste**

## Topics:

- Methodology
- Amount of food waste
- Food management behaviours
- Beliefs about food waste
- In-home food waste reports
- Next steps



# Methodology



**All respondents met the following screening criteria:** Main or joint household food manager, agreed to have their refuse physically audited, were not in a FOGO bin area and had not been absent from the home for 3 nights or more. **Timing:** 10<sup>th</sup> November – 21<sup>st</sup> December 2020 and 30<sup>th</sup> January 2021 – 16<sup>th</sup> February 2021.

# Food waste diary

DAY 1

Breakfast  
lunch  
caesar  
other

# Amount of food waste

## Australian household food waste

Electronic-diary findings of recorded food waste and disposal methods



# Amount of food waste

## All food disposed of

### SURVEY

(estimated by respondent)

- 2.03 kg per household
- 32% Unavoidable

### E-DIARY

(recorded by respondent)

- 2.89 kg per household
- 34% Unavoidable

## Only food disposed of in red bin

### BIN AUDIT

(measured by research team)

- 1.78 kg per household
- 43% Unavoidable

## All food disposed of

### CALCULATED\*

- 4.22 kg per household
- 43% Unavoidable





# Top wasted food CATEGORIES (by value)

Category (top 6)	\$ (household/wk)		Products (top 15)		
Meat and seafood	6.19		Beef	Ham	Chicken
Fresh vegetables/fresh herbs	5.52		Salads	Tomatoes	Potatoes
Meals	3.27		Pasta	Rice	
Bread and bakery	2.44		Bread Rolls	Slice Bread	
Fresh fruit	1.65		Bananas	Apples	
Dairy	0.80		Cheese	Yogurt	Milk



# Data presentation and analysis

- Data collection from **fixed response questions** on five-point scale:
  - *Almost every time - Most times - Half the time - Sometimes - Rarely/never*
- **Top two** categories from the five-point scale:
  - *Most > 60% Many 40-60% Some < 40%*
- Statistically significant differences for **age, income** and **household** structure
  - *99% confidence level*
- **Quotes**

In-home research



# Food management behaviours

## Australian household food waste

Survey findings of behaviours and perceived food waste

# Food planning behaviours

- Most (75%) checked the **fridge/freezer**
- Most (74%) checked the **cupboard**
- Most (65%) wrote **comprehensive shopping lists**
- Many (51%) **planned** the meals they would cook



Image source: [https://en.wikipedia.org/wiki/Shopping\\_list#/media/](https://en.wikipedia.org/wiki/Shopping_list#/media/)

*“We would never think what we were going to do for a meal next Monday ...  
We need to get into the habit of thinking ahead ... and planning ahead.”*

*“This will take some effort because we are just not used to thinking about meals”*

# Frequency of shopping

- Most (80%) do ‘main’ **weekly shop from supermarkets** followed by a ‘top-up’

*“I have to shop for a week because I’m a long way from the shops...  
I tend to buy in case I need something”*



Image Source: <https://www.aicr.org/resources>

# Food purchasing behaviours

- Most (65%) check 'use by' or 'best before' **dates** before purchasing food
- Many (58%) buy food based on what is on **'special'**
- Many (51%) buy what is on the **shopping list**
- Many (44%) bought food according to a **set budget**
- Some (23%) buy food for **'just in case'**
  - Most (64%) couples with children below 17 years
  - Most (67%) of 18-34 year old



*“When it comes to value or waste, value always wins.  
We buy items that are reduced to clear to save money  
but they expire faster so we can't save leftovers”*

# Food take-away or home delivery

- Many (54%) ordered **take-away** or **home delivery** at least one day a week
  - Age:
    - Most (72%) 18-34 years
    - Most (66%) 35-54 years
  - Children:
    - Most (76%) couples with children below 17 years
    - Most (68%) single parents with children below 17 years
    - Most (66%) couples with children above 17 years
  - Income:
    - Most (63%) \$2,000-2,999
    - Most (75%) \$3,000+



Image Source: [Canberraweekly.com](http://Canberraweekly.com)

# Food storing behaviours (1)

- Most (82%) put food in the **refrigerator/freezer**
  - Most (89%) Couple living without children\*
- Most (68%) used **storage containers**
  - Most (76%) Couple living without children\*
  - Most (73%) 55-74 years
- Most (66%) **move the oldest food items** to the front or top so that they can be used first
  - Most (77%) Couple living without children\*



*“We often cook extra pasta sauce and throw it in the freezer for a night we don’t feel like cooking”*

*\*(child/children no longer reside in same household)*



## Food storing behaviours (2)

- Many (47%) read **storage instructions** on packaging
- Many (22%) find it **hard** to fit food into the **fridge** and/or freezer because it's already full
  - Some (33%) couples with children below 17 years



*“Things stay in the back of the fridge  
and go green and furry before we even notice”*

# Food preparing behaviours (1)

- Most (83%) try to **use oldest** foods first
  - Most (89%) of 55-74 years and most (93%) 75+ years
- Most (64%) only prepare as much as is needed
- Many (58%) prepare extra food, store these **leftovers** to be eaten later on, and **end up eating** them



## Food preparing behaviours (2)

- Many (56%) **stick** to ingredients in a **recipe**
- Some (34%) let others **serve themselves**
- Some (14%) prepare extra food, store these **leftovers** to be eaten later on, but **end up disposing** of them
  - Some (27%) 18-34 years



*“We try to put leftovers in the fridge but it feels like it just delays the inevitable, which is throwing it away”*

# Food disposal behaviours (1)

- Most (66%) like to eat the  **freshest**  food possible
- Many (41%) do not keep food past its  **‘use by’ or ‘best before’**  date\*
- Some (32%) household members  **don’t finish their meal** \*
- Some (30%) are  **not sure**  if food is still  **safe to eat** \*
- Some (25%)  **buy too much**  food\*

\*Couples with children below 17 years are statistically significant

*“Husband is passionate about cooking and will only use the best, freshest ingredients even for regular weekly meals”*





## Food disposal behaviours (2)

- Some (26%) last minute **change of plans\***
- Some (19%) **don't cook** the meals **planned\***
- Some (11%) **don't know** how to use cooked **leftovers or ingredients\***

\*Couples with children below 17 years are statistically significant

*"I never know who will be home on the week-end"*

*"I never know who will be here for dinner"*

*"Other people [in the group] seem to know so much about how to substitute and use ingredients in different ways ... I have no idea at all"*

# Behaviours linked to HIGH levels of food waste

Rank	Behaviour/knowledge	Variable
1	Leftovers	We don't know how to use cooked leftovers
2	Cook too much	Prepare extra food, store these leftovers to be eaten later on, but end up disposing of them
3	Cook too much	Prepare too much food which is not all eaten, and dispose of the extra food straight away
4	Leftovers	We don't know how to use leftover uncooked ingredients
5	Over purchasing	Buy food for 'just in case'
6	Change of plans	We don't cook the meals we planned
7	Over purchasing	We buy too much food
8	Change of plans	Last minute change of plans (family members don't turn up for meal etc)
9	Plated leftovers	Household members don't finish their meal
10	Poor fridge/freezer management	Find it hard to fit food into the fridge and/or freezer because it is already full
11	Food safety - knowledge	We are not sure if food is still safe to eat
12	Date labeling -knowledge	We do not keep food past its 'use by' or 'best before' date



# Behaviours linked to LOW levels of food waste

Rank	Behaviour/knowledge	Variable
1	Preparation	Try to use up the oldest food first
2	Good fridge/freezer management	Put food in the refrigerator/freezer so it keeps for as long as possible
3	Purchasing	Only buy what is on the shopping list
4	Storage	Read the storage instructions provided on the packages
5	Storage	Move the oldest food items to the front or top so they can be used first
6	Planning	Check what food is already in the fridge/freezer

In-home research



# Attitudes to food waste

## Australian household food waste

Focus group findings of attitudes to food waste





# Motivation to reduce food waste

- Most (66%) believe food waste is **avoidable**
- Most (64%) are **motivated** to reduce food waste

*“If I was at a friends house and I saw them throwing away all the wasted food ... I’d be disgusted and disappointed in them”*

*“Throwing out that much food every week, that’s \$2000 a year... that’s a holiday”*



Image source: [www.qualityassurancemag.com](http://www.qualityassurancemag.com)



# Effort required to change behaviours

- Some agree it requires an effort to change
  - planning (28%), shopping (27%), storing (23%), preparing (24%), disposing (23%)
- On average:
  - Many (43%) **couples with children with below 17 years** agree it requires an effort to change
  - Many (46%) **18-34 years** agree it requires an effort to change
  - Many (41%) with **+\$3,000 income** agree it requires an effort to change

# Misunderstandings about food waste (1)

- **Underestimate** their food waste (significantly!!)
  - Survey 2.03kg/wk/household vs 4.22kg in the calculated food waste
- Believe food waste only an issue when sent to **landfill** (i.e. compost or fed to pets is not problem!!)
  - further research to quantify the magnitude of this belief



Image source: [thewingnutrva.files.wordpress.com](http://thewingnutrva.files.wordpress.com)



Image source: [pulptastic.com/composting-101](http://pulptastic.com/composting-101)

*“I don’t waste food ...if anything is left it’s composted ... never gets to land fill.  
Why do I need to change?”*

*“We would have less waste if our Council supplied FOGO bins.”*

## Misunderstandings about food waste (2)

- Don't realise uneaten food contributes to **climate change**
  - Further research to quantify the magnitude of this belief

*“...[Really...]  
...food being uneaten has an impact on climate change?”*



Image source: <https://www.foodsafetynews.com/2020/04/fao-climate-change-is-changing-food-safety-landscape/>

# In-home food waste reports

**Summary** of Behaviours, attitudes, perceived and actual food waste

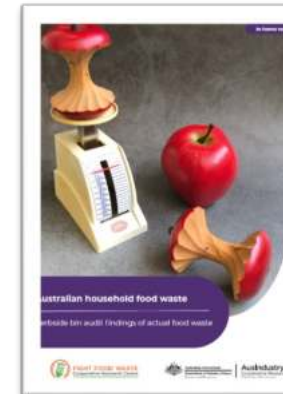
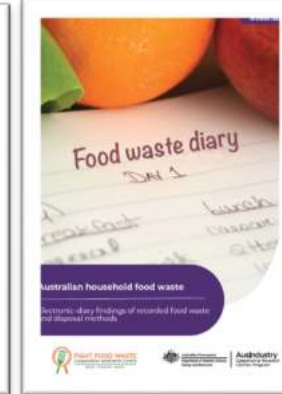
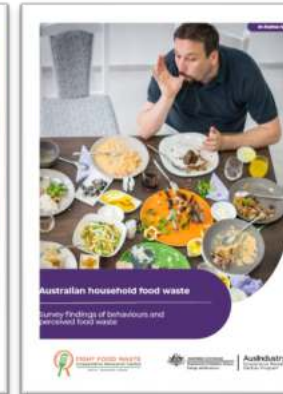
**Survey** findings of behaviours and perceived food waste

**Electronic-diary** findings of recorded food waste and disposal methods

**Kerbside bin audit** findings of actual food waste

**Focus group** findings of attitudes to food waste

**Choice model** findings of food waste reduction interventions





## Next steps...

FFWCRC Research project 'Designing effective interventions to reduce household food waste' will delivery another five reports this year:

**Profiles** of Australian households for food waste reduction interventions (WP3) – July

**Priority interventions** to reduce household food waste in Australia (WP5) - August

**Framing messages** for priority interventions to reduce household food waste in Australia (WP6) - October

**Methodologies to measure impact** of priority interventions to reduce household food waste in Australia (WP7) – August



# Thank you. Let's Engage!



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*CQUniversity is a proud research partner in the Fight Food Waste Cooperative Research Centre.*

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