



National Food Waste Prevention Study

National Report
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Contents

Executive Summary.....	4
Introduction	8
Demographic Profile of Sample Compared with Population (1).....	12
Demographic Profile of Sample Compared with Population (2).....	13
Conclusions	14
Recommendations	17
Segmentation.....	19
Household Food Wastage Groups	19
Demographic influences on household food waste	21
Profile of high food wasters	24
Younger people (aged 16 to 24 years)	24
Larger households (5+ household members)	27
Families with children (aged 15 years or younger).....	29
High income households (\$100,000 or more per annum).....	31
Results of individual questions	34
Chart 1: General attitudes	34
Chart 2: Methods of household food waste disposal	35
Chart 3: Methods of household food waste disposal by rural or urban living	36
Chart 4.1: Most commonly wasted foods.....	37
Chart 4.2: Reasons for waste of most commonly wasted foods	38
Table 1: Amount spent on food per week	39
Table 2.2: Amount spent on food per week by household size.....	39
Table 3: Proportion of money spent on food that is wasted per week.....	40
Table 4.1: Proportion of money spent on food that is wasted per week by age	40
Table 4.2: Proportion of money spent on food that is wasted per week by number of people in household	41
Table 4.3: Proportion of money spent on food that is wasted per week by household income .	41
Table 4.4: Proportion of money spent on food that is wasted per week by household type	41
Table 5: Dollar value of food wasted per week	42
Chart 5: Volume of avoidable food wasted per week	43
Chart 6: Perceptions of household's food waste	43
Table 7: Household's actual food waste versus perceptions of household's food waste	45
Chart 7: Perceptions of food wasted by New Zealand households	45
Table 8: Household's actual food waste versus perceptions of New Zealand households' food waste	46

Chart 8: Reasons for food wastage in households.....	46
Chart 9.1: Reasons that leftovers are not eaten or re-used	47
Chart 9.2: Reasons that food in the fridge or freezer goes off	48
Chart 9.3: Reasons that too much food is cooked.....	49
Chart 9.4: Reasons children, fussy eaters or those with specialist dietary requirements cause food waste in households	50
Chart 9.5: Reasons that too much food is bought	51
Chart 9.6: Reasons that food is not stored as well as it could be	52
Chart 10: Sources of food for the household.....	53
Chart 11.1: Supermarkets	54
Chart 11.2: Supermarkets by household food wastage groups.....	54
Chart 12: Frequency of shopping for food.....	55
Table 9: Frequency of shopping for food by household food wastage groups	55
Chart 13: Food shopping habits and behaviours	56
Table 10: Food shopping habits and behaviours by household food wastage groups.....	57
Chart 14: Food shopping habits and behaviours	58
Table 11: Food shopping habits and behaviours by household food wastage groups.....	59
Chart 15: Cooking and preparing food habits and behaviours	60
Table 12: Cooking and preparing food habits and behaviours by household food wastage groups	61
Chart 16: Cooking and preparing habits and behaviours	62
Table 13: Cooking and preparing food habits and behaviours by household food wastage groups	62
Chart 17: Behaviours around leftovers.....	63
Table 14: Behaviours around leftovers by household food wastage groups	64
Chart 18: Storing food.....	65
Table 15: Storing food by household food wastage groups	66
Chart 19: Expired or perished foods	67
Table 16: Expired or perished foods by household food wastage groups.....	68
Chart 20.1: Understanding of best before dates	69
Chart 20.2: Understanding of best before dates by household food wastage groups.....	69
Chart 21.1: Understanding of use by dates	70
Chart 21.2: Understanding of use by dates by household food wastage groups.....	70
Chart 22: Dealing with expired foods	71
Table 17: Dealing with expired foods by household food wastage groups.....	71
Chart 23: Motivations to minimise household food waste	72

Table 18: Motivations to minimise household food waste by household food wastage groups.	73
Chart 24: Willingness to do activities that minimise household food waste.....	74
Verbatim comments: Other activities that households are willing to do to minimise their household food waste	75
Chart 25: Activities of households with no food waste	77
Chart 26: Tools to aid in minimising household food waste.....	79
Appendix: Questionnaire	81

Executive Summary

New Zealand households believe they throw away food worth 5% of their weekly food expenditure or \$7.50 a week on average. This equates to \$390 a year per household, or \$144 a year per capita based on an average of 2.7 people per household, which extrapolates to over \$600 million of food wasted by New Zealand households each year.

Food waste does vary between households with over one quarter (27%), who are termed 'high food wasters' within this report, wasting food worth \$21.00 a week on average.

Despite this, households do not necessarily believe that they are wasting a lot of food, which underlines the importance of food waste behavioural change campaigns. Over one half (54%) of high food wasters perceive that they waste little or very little food and almost one quarter (24%) of this group estimate that New Zealand households waste food worth \$20 or more a week. These statistics highlight that many high food wasters view their wastage behaviour as normal and are unlikely to change this behaviour.

Households can be divided into three segments according to the level of food waste they generate. This is calculated both in volume terms and the proportion of food expenditure that is wasted.

Low food wasters

Account for 35% of New Zealand households. They waste an average of \$2.20 worth of food per week.

Medium food wasters

Account for 38% of New Zealand households. They waste an average of \$8.00 worth of food per week.

High food wasters

Account for 27% of New Zealand households. They waste an average of \$21.00 worth of food per week.

High food wasters are more likely to be:

- Younger people - those aged 16 to 24 years in the household responsible or jointly responsible for food shopping and preparation. Approximately 240,000 young people in New Zealand are estimated to fall into this category.
- Large households those with 5 or more people living in them. Approximately 80,000 households in New Zealand are estimated to fall into this category.
- Households with children 15 years and under; and
- Households with a high annual income (\$100,000 per annum or more). Approximately 140,000 households in New Zealand are estimated to fall into this category

Busy lifestyles play a role in food being wasted, with over one third of all respondents (34%) stating that busy lifestyles make it hard to avoid wasting food. This attitude is even more prevalent amongst demographic groups that waste more food, such as those aged 16 to 24 years (50% state busy lifestyles make it hard to avoid wasting food), households with 5 or more people (43%), and families with children (40%).

Food shopping habits and behaviours

High food wasters are significantly less likely to demonstrate food shopping habits and behaviours that prevent food waste than lower food wasters. Some of these behaviours include checking what is in the cupboards, fridge or freezer before doing a food shop, using a shopping list, and being careful when food shopping to buy only the foods that will get eaten.

Cooking and preparing food

High food wasters are significantly less likely to demonstrate cooking and preparing habits and behaviours that prevent food waste than lower food wasters. Some of these behaviours include being able to make meals from random ingredients at hand, making meals from ingredients at home that need using up first, and considering portion sizes and only making as much as is needed. High food wasters are more likely to cook extra food just in case it is needed.

Behaviours around leftovers

High food wasters are significantly less likely to put leftovers in the fridge or freezer for future use, and are more likely to throw leftovers out either straight after the meal, or after the leftovers had been put in the fridge or freezer.

Storing food

High food wasters are significantly less likely to demonstrate food storage habits and behaviours that prevent food waste than lower food wasters. Some of these behaviours include using air-tight containers and other food storage accessories, rotating products within the fridge, freezer or shelf so that the oldest food is at the front, and the newest food is at the back, or freezing fruit and vegetables that are getting old for future use.

Expired or perished foods

Higher food wasters are significantly more likely than lower food wasters to throw out stale, perished, older, or mouldy foods such as stale bread, or old or bruised fruit and vegetables, that are otherwise still edible. They hold a stronger perception that all leftovers that have been left in the fridge for more than one day are unsafe to eat, and are less likely to check the 'use by' and 'best before' dates when shopping for food.

Best before and used by dates

High and medium food wasters are more likely to perceive that the best before date means that food must be eaten or thrown away by this date (11% of high food wasters, and 12% of medium food wasters, compared to 7% of low food wasters).

High food wasters are less likely to perceive that foods are still safe to eat after the use by date as long as they are not rotten or spoiled (19% of high food wasters, compared to 29% of the total sample).

Food waste disposal

The main methods households use to dispose of their food waste are:

- Putting the food waste in the rubbish for collection (36%)
- Compost (28%)
- Give the food to chickens, pigs or other animals including dogs and cats (15%)

Respondents who live in urban areas are more likely to dispose of food waste by putting it in the rubbish for collection (66%, compared to 42% of rural households), and use kitchen waste disposal units or insinkerator (29%, compared to 7% of rural households). Respondents who live in rural areas are more likely to dispose of food waste by compost (61%, compared to 45% of urban households), and give it to animals (63%, compared to 29% of urban households).

Most commonly wasted foods

Fresh vegetables (55%) and fruit (26%) are the foods most commonly wasted by New Zealand households. This is followed by homemade mixed foods (25%), which include leftovers.

Reasons for food waste

The main reasons for food waste in New Zealand households are leftovers not being eaten or reused (31%), or food in the fridge or freezer going off (25%).

Reasons that leftovers are not eaten or reused include:

- They are put in the fridge and meant to be eaten, but plans change (60%) They are put in the fridge and forgotten about (55%), and
- They are put in the fridge but no one feels like eating them (49%).

Reasons that food in the fridge or freezer goes off include:

- Food that is getting old and needs to be eaten is forgotten about (65%) Fruit and vegetables are forgotten about (50%), and
- Food gets pushed to the back of the fridge or freezer so cannot be easily seen (39%).

Attitudes to food waste

Wasting food does however feel wrong to a significant majority (89%) and eight out of ten respondents (82%) consider food waste reduction to be an important issue.

Motivations to minimise food waste

The most common motivators to minimise the amount of food wasted include:

- I value the food I buy and don't want to throw it away (88%),
- The possibility of saving money by not having to buy more food (84%), and
- Wanting to manage my home efficiently by not having so much food stored that some will get thrown away (77%).

Willingness to do activities to reduce food waste

The activities that respondents would most likely consider doing to reduce their food waste include:

- Rotating food from the back to the front of the shelf (newest at the back, oldest at the front) (54%),
- Create a weekly menu plan (53%), and
- Avoid buying bulk special deals or buying more because of promotions when it's not necessary (49%).

Activities of households with no food waste

10% of respondents state that they generally throw away no food. These households are mindful of food waste prevention when shopping for food, and they demonstrate the following activities to minimise their household food waste:

- Buy smaller amounts of fresh fruit and vegetables at a time so they are more likely to be eaten before they go off (77%),
- Are careful about what food is bought, buying only as much as they know will get eaten (74%),
- Check the fridge and cupboards before going food shopping (73%), and
- Make a list before going food shopping (73%).

Tools to aid in minimising food waste

Tools that would help New Zealand households minimise food waste include:

- Recipes or ideas on how to re-use leftovers or leftover ingredients into new meals (45%),
- A fridge magnet with information on how long you can store various foods in the freezer for (40%), and
- An easy-to-use guide to storing fresh fruit and vegetables correctly (38%).

Introduction

WasteMINZ

Founded in 1989, WasteMINZ is a membership based organisation which operates an inclusive and collaborative model, and delivers value to its members through increasing professionalism, knowledge development, and support and advocacy services.

WasteMINZ is the authoritative voice on waste and resource recovery in New Zealand, and seeks to achieve ongoing and positive development in the industry.

At a mid-year workshop run by WasteMINZ in 2013 a group of councils indicated interest in running a Love Food Hate Waste (LFHW) style campaign to reduce food waste in New Zealand. The Behaviour Change Sector Group (BCSG) at WasteMINZ decided to take this on as a project – The National Food Waste Prevention Project.

The National Food Waste Prevention Project

The National Food Waste Prevention Project is being undertaken by the WasteMINZ Behaviour Change Sector Group. The Sector Group has created a Food Waste Reduction Technical Working Group to capture baseline data on household food waste and attitudes towards household food waste in New Zealand and to support councils engaging in food waste reduction programmes. The initial task of the Working Group is to develop research tools to capture this data.

The overarching aims of the project are to:

- Establish the extent to which avoidable household food waste is a problem in New Zealand.
- Determine which behaviours should be promoted to households to minimise food waste.
- Use this information to seek funding from the Ministry of the Environment to run a nationwide food waste prevention programme in 2016.

Research Tools

The research will be used at a national, regional and local level. At a national level, the findings from this research will provide an important input to the development of campaigns and media engagement strategies, providing new and arresting information about the amount of food New Zealanders waste and why. The information will also be tailored to tell this story at a regional and local levels where required.

The aim was for interested councils to conduct their own research but amalgamate the data collected into a national data set so that New Zealand wide figures can be calculated. Three research tools have been developed by the working group. These are described below.

1 Bin audits:

These audits separate out food waste from kerbside collections and the food waste is analysed to understand how much food waste is:

- Avoidable, i.e. could have been eaten, e.g. a slice of bread.
- Potentially avoidable, e.g. apple and potato peels.
- Unavoidable, e.g. banana skins.

These audits provide information on the most commonly wasted foods and the costs of food waste to households. A short survey was also designed to deliver to each household from which waste was collected, to capture key demographic information and basic waste behaviours. The methodology for this tool was developed by Waste Not Consulting who are undertaking these audits for interested councils.

2 Kitchen Diaries:

These provide insight into why food is being thrown out. Households are asked to keep a diary for one week and record:

- What food they are throwing out.
- The quantity of wasted food.
- Why they are throwing it out.
- Where it is being put, e.g. composted, insinkerator or in the rubbish.

This research provides insight into why specific types of food are being thrown out. It also reveals how much and what kinds of food waste are being disposed of through composting, in sink waste disposal units and by feeding to animals. A pre-diary questionnaire and a post-diary questionnaire are used as the process of keeping a diary and raising awareness of an issue can sometimes change participant's behaviour. The diaries have been developed by the technical working group and councils will be contracting their own research providers to undertake this research.

3 National Food Waste Prevention Survey (This report)

The aim of this tool is to provide nationally representative data on attitudes and behaviours that lead to food waste. The information will be used to inform the development and evaluation of national and local campaigns to raise awareness of food waste. While the top line findings around how much food is wasted, what it is and its cost, will be gathered by the bin audit (outlined above), the survey will provide greater insight into why people waste food and their attitudes and perceptions towards food waste.

Specifically, it measures the attitudes and behaviours that are thought to be the main causes of food waste. Building upon qualitative work, it seeks to understand the relative strength of barriers and enablers of food waste minimisation, and how they operate at a whole of population level. The survey provides a sufficient level of confidence around these to support development of targeted communications and engagement materials. It is also intended that the survey will provide insights into the sorts of things that the public believe would help them to reduce food waste, both in terms of practical assistance and communications. As well as this, analysis of the results provides insight into different demographics.

The survey will also serve as a pre-implementation baseline for campaigns and programmes to be implemented at a national, regional and local level over the next two years.

Objectives of the National Food Waste Prevention Survey

The primary goal of this study is to provide information to develop a behaviour change campaign to reduce household food waste in New Zealand. More specific objectives include:

- An outline of the demographic groups that are identified to waste significantly more food than the total group.
- An outline of where these groups significantly differ from the overall group in their attitudes, knowledge, behaviour.
- Recommendations based on the data to create behaviour change in these groups.
- Establish national baseline indicators for knowledge, attitudes and behavior in regard to food waste, to allow the effectiveness of any subsequent interventions to be measured.
- Identify the extent to which behaviours and practices known to reduce avoidable food waste are being undertaken in New Zealand, to determine those behaviours which should be targeted as part of a subsequent programme.
- Ascertain the extent to which household food waste is being diverted through composting, insinkerator and feeding animals and therefore being underreported in food waste bin audits.

Methodology

1 Questionnaire Design

The questionnaire was designed through a series of phases as follows:

- The following research studies were reviewed:
 - Food Waste Avoidance Benchmark Study (2009), New South Wales (NSW) Government, Office of Environment and Heritage.
 - Household Food and Drink Waste in the United Kingdom (2012), WRAP.
 - West London Food Waste Prevention Campaign Evaluation Report (2012), WRAP.
 - New Estimates for Household Food and Drink Waste in the UK (2011), WRAP.
 - Tasman-Nelson Food Waste Kitchen diary Survey (2014), Waste Education Services, Nelson Environment Services.
 - Summary of Existing Information on Domestic Food Waste in New Zealand (2013), Waste Not Consulting prepared for WasteMINZ Behaviour Change Sector Group.
- Qualitative interviews relating to food waste behaviour undertaken by staff of Auckland Council Zero Waste Unit were analysed by Key Research.
- A first draft of the questionnaire was designed by Key Research and reviewed by the working group with feedback provided.
- A second draft of the questionnaire was drafted by Key Research and reviewed again by the working group.
- A questionnaire pre-test was undertaken by Key Research, with 10 participants from Tauranga City randomly selected and recruited to attend the pre-test session. A mini focus group was undertaken at the conclusion of the pre-test, to discuss the interpretation of questions and areas for change or improvement in the questionnaire.
- A third draft of the questionnaire was drafted by Key Research based on findings from the questionnaire pre-test and reviewed by the working group with feedback provided.

- A pilot survey was undertaken with 20 respondents from the Research Now online panel. The data was analysed by Key Research to evaluate the responses to questions and any further changes required.
- A fourth draft of the questionnaire was drafted by Key Research and reviewed by the working group. This questionnaire became the final version that was used for the survey (refer to Appendix One).

2 Data Collection Method

A nationwide online survey was considered the most appropriate method for ensuring demographic representation of the New Zealand public.

An online survey was considered to be more appropriate than a telephone survey for this project. An online survey presents an opportunity to display images that can lead to a more accurate response and allows images of campaign material to be included in future surveys that may require questions around recognition of various campaign activities. In addition, online surveys tend to get a better representation of younger respondents who were thought to be a key audience for food waste prevention campaign messages.

Survey respondents were sourced from the Research Now online panel which has a nationwide coverage of New Zealanders. Quotas were enforced to ensure that the sample was not skewed and to best represent the main/joint household food shoppers and preparers in New Zealand.

To qualify for participation in the survey respondents were the person in the household primarily or jointly responsible for the food shopping and preparation.

In order to reduce bias in the survey a screening question was implemented to avoid surveying people in media and marketing research, collection or processing of waste materials, management roles in food retail or food service trades, and local government.

The survey was undertaken from the 19th August to 7th September 2014.

3 Sample Size

The survey obtained a sample of n=1,365 New Zealand residents aged 16 years or older. This sample included an over-representation of some regions for which extra data was collected for regional analysis. The survey data was therefore reweighted to a sample size of n=1,300 to best represent the regional population structure of New Zealand. The maximum sampling error for a sample of 1,300 is +/-2.72% at the 95% level of confidence.

The tables on the following pages 14 and 15 display the demographic profile of the sample compared with population statistics from the New Zealand Census 2013.

Demographic Profile of Sample Compared with Population (1)

	New Zealand population %	Food waste prevention study %
Age		
16 to 24	16%	16%
25 to 39	24%	22%
40 to 54	27%	28%
55+	33%	34%
Gender		
Male	49%	34%
Female	51%	66%
Region		
Northland	4%	4%
Auckland	33%	33%
Waikato	9%	9%
Bay of Plenty	6%	6%
Gisborne	1%	1%
Hawke's Bay	4%	4%
Taranaki	3%	3%
Manawatu / Whanganui	5%	5%
Wellington / Wairarapa	11%	11%
Nelson / Marlborough / Tasman	3%	3%
West Coast	1%	1%
Canterbury	13%	13%
Otago	5%	5%
Southland	2%	2%
Ethnicity (Multiple responses allowed)		
European	74%	87%
Maori	15%	7%
Pacific peoples	6%	3%
Asian	12%	9%
Dwelling type		
Separate House	81%	83%
Two or more flats/units/apartments joined together	19%	17%
Work status		
Employed	65%	55%
Unemployed	4%	3%
Not in labour force (not seeking employment)	31%	42%
Household composition		
Family	73%	75%
Shared	5%	11%
Single	24%	14%

Demographic Profile of Sample Compared with Population (2)

	New Zealand population %	Food waste prevention study %
Number in household		
1	23%	14%
2	34%	29%
3	16%	22%
4	16%	17%
5 or more	11%	18%
Household income		
\$20,000 or less per year	11%	8%
\$20,001 to \$40,000 per year	21%	23%
\$40,001 to \$100,000 per year	41%	47%
\$100,001 or more per year	27%	22%

Conclusions

Cost of food waste

This research has found that on average (using the median value¹) New Zealand households believe they throw away food worth 5% of their weekly food expenditure or NZD \$7.50 a week on average. This equates to \$390 a year per household, or \$144 a year per capita based on an average of 2.7 people per household, which extrapolates to over \$600 million of food wasted by New Zealand households each year.

Without intervention, it is unlikely that New Zealand households generating high amounts of food waste would curtail this behaviour. Only 3% of households perceive the amount of food waste they generate to be quite a lot. Even amongst high food wasters (27% of New Zealand households), only 9% perceive their food waste as being quite a lot, while 54% perceive it as a little or very little. This indicates that high food wasters are not aware that their food waste behaviour is an issue. Almost one quarter of high food wasters (24%) estimate that New Zealand households waste \$20 of food per week compared with only 10% of low food wasters. Therefore, high food wasters may be viewing their food wastage as normal and not believe change in behaviour is necessary.

Food waste segments

The research determined three segments of households in terms of the level of food waste generated.

- The low food wastage group accounts for 35% of New Zealand households who waste 5% or less of their weekly food expenditure and less than 1 litre of food per week. This group wastes an average (using the median value) of \$2.20 worth of food per week.
- The medium food wastage group accounts for 38% of New Zealand households who waste more than 5% of their weekly food expenditure or 1 litre or more of food per week. This group wastes an average (using the median value) of \$8.00 worth of food per week.
- The high food wastage group accounts for 27% of New Zealand households who waste more than 5% of their weekly food expenditure and 2 litres or more of food waste per week. This group wastes an average (using the median value) of \$21.00 worth of food per week.

High food wasters

The demographic factors that determine who wastes food more are:

- Age – The younger the people in the household responsible or jointly responsible for food shopping and preparation, the more food waste generated.

¹ This study uses the median dollar value as the measure of central tendency (the average) rather than the mean dollar value. This is because the median value is less affected by outliers and skewed data, which is characteristic of this data.

- Household size – The more people in the household, the more food waste generated. This is to be expected based upon the volume of food consumed and therefore discarded. However, larger households are also more likely to waste a greater proportion of their expenditure on food and to waste just as much per person as smaller households.
- Households with children – This group wastes more food than households with adults only, including families (couples) with no children, shared households and single person households.
- Household income – The higher the income of a household, the more food waste generated.

High food wasters have more relaxed attitudes to food waste than medium and low food wasters. They are less likely to agree that wasting food feels wrong, that food waste reduction is an important issue and that they make a conscious effort to reduce their waste. High food wasters are also more likely to state that busy lifestyles make it hard to avoid wasting food.

Although high food wasters have more relaxed attitudes to food waste than the total sample, there is still sufficient level of agreement with these attitudinal statements to warrant food waste prevention communications targeted at this group. For instance, 86% agree that wasting food feels wrong and 80% agree that food waste reduction is an important issue.

The food shopping, cooking / preparing, and storage behaviours that most impact on food waste and differentiate the high food waste group from the total sample are:

- Frequency of food shopping – High food wasters shop more frequently for food.
- Planning for food shopping – High food wasters are less likely to check the cupboards, fridge and freezers before shopping, use a shopping list and stick to a shopping list while food shopping.
- Food shopping – High food wasters are more likely to demonstrate a range of food shopping behaviours that cause more food to be purchased than is necessary, buying more food due to specials and promotions, and a desire to purchase more than enough food.
- Cooking and preparing food – High food wasters are more likely to buy new ingredients for meals, cook from a set recipe, and are not as confident with cooking. They are also less likely to consider portion sizes and more likely to make extra just in case it is needed.
- Leftovers – High food wasters are more likely to throw out leftovers, mainly as a result of leftovers being put in the fridge and thrown out later, or thrown out because someone in the household didn't eat them.
- Food storage – High food wasters are less likely to use good food waste prevention storage practices such as rotating products from the back to front of the shelf, fridge or freezer, and turning fruit and vegetables that are getting old into smoothies, soups, jams and chutneys so they are not wasted.

- Perished food – High food wasters are less tolerant of perished food and are more likely to throw away fruit and vegetables that are bruised or over-ripe, and bread that is mouldy.
- Best before / use by dates – High food wasters are less likely than low food wasters to understand that foods are still safe to eat after their best before date as long as they are not rotten or spoiled. They are also more likely to strictly follow the use by date of throwing away foods once they are past this date when compared with low food wasters.

High food wasters are motivated to reduce food waste by similar factors to the total sample. These are:

- The possibility of saving money by not having to buy more food,
- The value placed on the food bought, and
- Wanting to manage their homes efficiently by not having so much food stored that some will get thrown away.

A large number of high food wasters are already demonstrating good practices when it comes to food waste prevention, such as checking the fridge and cupboard before going food shopping, making a list before going food shopping, and making better use of storage containers and accessories (pegs, clips, wraps and foils).

The practices that high food wasters do less, but would consider doing include:

- Using up fruit and vegetables before they go off, by making soups, smoothies, freezing them, or making them into jams, chutneys, pickles, or stewed fruit,
- Rotating food from the back to the front of the shelf (newest at the back, oldest at the front),
- Using up food at home before new food is bought,
- Buying smaller amounts of fresh fruit and vegetables at a time so they are more likely to be eaten before they go off, and
- Being more careful about what food is bought.

Similar to the total sample, to help them reduce food waste, high food wasters would most like:

- Recipes or ideas on how to re-use leftovers or leftover ingredients into new meals,
- A fridge magnet with information on how long you can store various foods in the freezer for, and
- An easy-to-use guide to storing fresh fruit and vegetables correctly.

Recommendations

This research finds that while the majority of households (including high food waste households) believe food waste prevention is an important issue and that wasting food feels wrong, they do not perceive the amount of food waste they generate to be a lot. Even amongst high food wasters only 9% perceive their food waste generated to be quite a lot.

Communication messages to create awareness of the food waste issue are necessary to raise attention to the issue and inform, particularly high food wasters, of the contribution that certain household activities, such as throwing out leftovers and food from the fridge, are having towards the problem.

Communication messages that promote an easy to remember 'norm' for food thrown out may help set an expectation of the level of food waste that is acceptable and to bring high and medium food wasters such as high-income households, larger households, households with younger people (aged 16 to 24 years), and families with children, more in line with low food wasters.

Busy lifestyles are found to be an attitudinal barrier to avoiding food waste and one of the main causes of food waste is from throwing out leftovers that have been put in the fridge or from fruit and vegetables going off while in the fridge.

Prompts on fridges, such as fridge magnets, would be a useful way of reminding households to use their leftovers or other food before it goes off – 'use it or lose it'. This research finds that the tools that would be most useful to households include:

- Recipes or ideas on how to re-use leftovers or leftover ingredients into new meals.
- Fridge magnets with information on how long various foods can be stored in the freezer for.
- An easy-to-use guide to storing fresh fruit and vegetables correctly.

This could potentially involve a fridge magnet sent in a direct mailing, with the magnet including a useful piece of food waste prevention advice while also tapping into motivations, such as a reminder to rotate food, put vegetables or fruit to good use, check before you shop, or save time, money or tidy up by using existing food.

Promoting the use of leftovers or existing ingredients as a time saving device could be useful to encouraging those with busy lifestyles to avoid food waste. The research finds that high food wasters are more likely to shop for food more than once per week and therefore encouraging households to use the food they have first, would help reduce the frequency of food shopping and therefore food waste generated.

Promotions could also direct people to a website or social media page with more information, such as recipes or ideas to use leftovers, existing ingredients or fruit and vegetables into new meals. Social media allows people to interact and discover new ideas through connecting with other people. To establish a critical mass of activity, incentives and competitions may need to be used to generate traffic and content.

Communications media, messages and behaviour change tools should be tailored at those demographic groups that are more likely to demonstrate high food waste behaviour. This would need to involve targeting behavioral change across food shopping, cooking and preparing food, using leftovers and perishing food, and food storage.

Although this research did not cover the media habits and interests of respondents, the demographic profiles uncovered can be used as a guide for developing behavior change programmes that are visible and appeal to these groups. For example, tailoring a programme towards the younger age group may involve partnering with tertiary education institutions to implement orientation week events encouraging or incentivising participation in generating recipe and food re-use ideas and using the creativity of this group to generate content for on-going communications.

In addition to young people the other high food waste groups that should be targeted are:

- large households (with five or more members for example),
- households with children,
- households with individuals aged 16 to 24 years, and
- higher income households.

There is also interaction between these groups, for example larger households tend to have children present. These households are found to not only generate a higher volume of food waste, but also a higher proportion of their expenditure on food is wasted.

An underlying cause of this could be that food waste arises through a greater difficulty in coordinating food consumption, meals and good food waste minimisation practices within the household. For instance, food thrown out due to children or fussy eaters is one of the main causes of food waste for households with children. Messages that promote ways to better manage and plan meals in the household are integral to programmes targeted at households with children.

Segmentation

Household Food Wastage Groups

Household food wastage groups are determined through a cross-analysis of the percentage of the money spent on food each week that is thrown away, and the volume of food (in terms of a 2L ice-cream container) thrown away each week.

The survey found that the dollar value of food wasted is strongly influenced by household size. Generally, the more people in a household the more food they buy, therefore the higher the dollar value of food they waste.

However, on a per person basis of food waste, large households (with five or more people) waste a similar dollar value of food per person as smaller households (with two to four people), but more than single person households.

The proportion of money spent each week in addition to the volume of food thrown away each week was found to be a better indicator of how much food a household was wasting, controlling for the size of the household. The table below illustrates how the household food wastage groups were established.

		Percentage of money spent on food thrown away that could have been eaten each week			
		0-2%	3-5%	6-10%	11+%
Volume of food thrown away that could have been eaten each week		Low wastage households		Medium wastage households	
	None at all	n=100 7.7%	n=14 1.1%	n=3 0.2%	n=13 1.0%
	Less than one half of a 2L container	n=174 13.4%	n=164 12.6%	n=67 5.2%	n=31 2.4%
	One half to less than one 2L container	n=40 3.1%	n=91 7.0%	n=72 5.5%	n=43 3.3%
		↑	Medium wastage households	↓	High wastage households
	One 2L container	n=15 1.2%	n=75 5.8%	n=100 7.7%	n=72 5.5%
	Two 2L containers or more	n=5 0.4%	n=39 3.0%	n=90 6.9%	n=93 7.2%

Totals:

	Number of respondents	% of total sample
Low wastage households	452	35%
Medium wastage households	494	38%
High wastage households	355	27%

Note: 30 respondents claimed to waste no food at all (in volume terms) but recorded money spent on food thrown away (3% or more). The respondents have been included in the segmentation according to their money spent on food thrown away. Those who claimed to waste no food at all but recorded 5% or less of money spent on food thrown away are included as low wastage households. Those who claimed to waste no food at all but recorded 6% or more of money spend on food thrown away are included as medium wastage households.

These groups are used to determine which demographic factors have the greatest influence on food wastage, in order to identify which demographic groups typically fall into the high food wastage household segment.

Over one quarter (27%) of those surveyed are high food wasting households. This statistic can be used as a baseline indicator of purported food waste behavior to evaluate the effectiveness of behaviour change campaigns in future surveys. Over the long-term this percentage would be expected to decline as behavioural change campaigns to reduce food waste lead to changes in attitudes and behaviours to food waste.

Demographic influences on household food waste

The following demographic variables strongly correlate with the amount of food wasted in households. The same demographic variables also had an influence on the food waste generated by households on a per person basis.

Other demographic factors such as if the respondent lived in a rural or urban location, their region, or gender did not have a significant relationship with the food waste generated.

Age

	n	Household food wastage group		
		Low	Medium	High
16-24	203	16%	40%	44%
25-39	299	19%	44%	37%
40-54	361	33%	36%	31%
55+	447	54%	35%	11%
Total sample	1,300	35%	38%	27%

Age has the greatest influence on the food wasted within households. Respondents aged 16 to 24 years are more commonly high food wasters (44% of respondents aged 16 to 24 years), whereas older respondents (aged 55+ years) are more commonly low food wasters (54% of respondents aged 55 years and older). Almost half (48%) of respondents aged 16 to 24 years live independently (do not live in the same household as someone aged 35 years or older), and the remaining 52% live in the same household as someone aged 35 years or older.

Number of people living in the household

	n	Household food wastage group		
		Low	Medium	High
1	185	62%	29%	9%
2	371	42%	40%	18%
3	282	34%	40%	26%
4	214	22%	40%	38%
5+	248	16%	37%	47%
Total sample	1,300	35%	38%	27%

Median dollar value of food wasted per week per person in household

Base: All respondents (n=1,300)

	Number in household				
	1	2	3	4	5+
Median dollar value of household food wasted per person in household	\$2.13	\$2.50	\$2.33	\$3.16	\$3.00

The number of people living in the household also has an influence on food wasted within households. Larger households, particularly those with five or more people, are more commonly high food wasters (48% of households with 5 or more people). Single person households showed minimal food wastage, with almost two thirds (62%) in the low food wasters segment.

The median dollar value of household food wasted per person in the household showed that on a per person basis, larger households still generated a higher dollar value of food waste than smaller households. On average, single person households have a lower dollar value of food wasted per person when compared with households with two or more people.

Household type

	n	Household food wastage group		
		Low	Medium	High
Family only adults (16+)	571	39%	39%	22%
Family with children	397	20%	37%	43%
Shared	148	26%	46%	28%
Single	182	63%	29%	8%
Total sample	1,300	35%	38%	27%

The type of household has a strong influence on food wasted within households. Families with children are more likely to be high food wasters (43% of households with children), and single person households are more commonly low food wasters (63% of single households).

Household income

	n	Household food wastage group		
		Low	Medium	High
Less than \$40,000 per year	343	52%	30%	18%
\$40,000 to \$79,999 per year	391	33%	42%	25%
\$80,000 to \$99,999 per year	125	29%	35%	36%
\$100,000 or more per year	243	21%	40%	39%
Total sample	1,300	35%	38%	27%

Household income has an influence on how much food a household wasted. Households with higher household incomes (\$100,000 or more per year) tend to waste more food than households with lower household incomes, particularly households that earn less than \$40,000 per year.

Ethnicity

	n	Household food wastage group		
		Low	Medium	High
New Zealand European	1061	35%	37%	28%
Maori	95	24%	33%	43%
Asian	73	34%	30%	36%
Indian	50	30%	52%	18%
Pacific Islander	41	27%	34%	39%
Other	119	47%	40%	13%
Total sample	1,300	35%	38%	27%

People per household by ethnicity

	n	Number in household				
		1	2	3	4	5+
New Zealand European	1061	15%	30%	22%	14%	19%
Maori	95	5%	25%	16%	24%	30%
Asian	73	7%	22%	23%	18%	30%
Indian	50	0%	19%	23%	38%	20%
Pacific Islander	41	9%	11%	12%	21%	46%
Other	119	15%	25%	23%	22%	15%
Total sample	1,300	14%	29%	22%	16%	19%

Maori and Pacific Islander ethnic groups are more likely to generate higher food waste than the total sample. However, these households typically have more people per household than the total sample and this is likely to be influencing the higher food waste generated within these households.

Profile of high food wasters

The following profiles highlight the attitudes, behaviours, main causes of food waste, and motivators and preferred food waste prevention tools of the demographic groups found to waste significantly more food than the total sample.

Younger people (aged 16 to 24 years)

Households with younger aged people (aged 16 to 24 years) are more commonly high food wasters (44% of respondents aged 16 to 24 years) when compared with other age groups. Across the total group, this group has a median dollar value of \$12.80 of food wasted per week, compared to \$7.50 from the total sample. Younger respondents have a high willingness to change food waste related behaviours, and a higher likelihood to take up tools to help minimise food waste than the total sample.

Of this group, almost one half (48%) are living independently (not living with anyone aged 35 years or older), and this represents 7% of the total sample. The remaining 52% live in the same household as someone aged 35 years or older.

There are estimated to be over 230,000 individuals in New Zealand who are high food wasters within the 16 to 24 year age group.

Attitudes

Many younger respondents admit that they aren't making a conscious effort to reduce their waste as much as possible in their everyday life (68% compared to 82% of the total sample). They are also less likely to admit that wasting food feels wrong to them (83% compared to 89% of the total sample). Younger respondents are more likely to agree that busy lifestyles make it hard to avoid wasting food (50% compared to 34% of the total sample), which could be an underlying cause of their high food waste.

Main cause of food waste

The main cause of food waste for respondents aged 16 to 24 years is leftovers not being eaten or re-used (34%), or food in the fridge or freezer going off (29%). The main causes of leftovers not being eaten are:

- Leftovers are put in the fridge and forgotten about (71%),
- Food is put in the fridge with the intentions of being eaten, however plans changed (67%), For example, they went out for dinner, or cooked a different meal instead,
- People in the household didn't feel like eating them (60%),
- Food in the fridge or freezer goes off due to it being forgotten about (52%),
- Food is pushed to the back of the fridge so it can't be easily seen (52%), and
- Ingredients are bought for a dish and are only used once (52%).

Behaviours

Shopping for food

Younger respondents shop for food frequently, the majority of respondents go shopping for food once a week (54%), and 41% shop for food at least two times per week, which compares with 35% of the total sample that shop for food at least two times per week.

Younger respondents are less likely to demonstrate good food waste prevention practices when shopping for food. For instance, younger people are more influenced by special deals or promotions to buy more (61%) when compared to the total sample (47%) and more likely to buy foods that they desire regardless of what food may need to be eaten at home (25% compared to 13% of the total sample).

Cooking and preparing food

Younger respondents are less likely to demonstrate good food waste prevention practices when cooking and preparing food. Younger respondents are more likely to be cooking meals based on what they feel like, and will buy new ingredients for this meal (28% compared to 18% of the total sample). The way younger respondents cook and prepare food has an influence on the food waste they generate, they are less likely to consider portion sizes and only make as much as needed (37% consider portion sizes, compared to 51% of the total sample), and more often make extra just in case it is needed (28% compared to 18% of the total sample).

Leftovers

Leftovers are more likely to be thrown out by younger respondents. This happens either because:

- They are put in the fridge, then thrown out later (66% do this some, most or all of the time, compared to 50% of the total sample),
- Someone in the household didn't eat them (54% compared to 42% of the total sample), or
- They weren't put into the fridge or freezer (34% compared to 27% of the total sample).

Storing food

Younger respondents are less likely to practice storage behaviours that may prolong the life of food:

- Such as rotating food from the back to the front of the shelf so the oldest food is always at the front (13% do this most or all of the time, compared to 32% of the total sample),
- Labelling leftovers and food when storing in containers (16% compared to 23% of the total sample, or
- Making space in the fridge, freezer or cupboard for items that need using up (22% compared to 33% of the total sample).

Expired or perished foods

Younger respondents are:

- More likely to throw out hard cheeses that have mould (33% compared to 20% of the total sample),

- Less likely to use or freeze stale bread (40% compared to 53% of the total sample),
- Less likely to eat bruised or over-ripe fruit and vegetables (32% compared to 48% of the total sample).

Motivations

Younger respondents are motivated to minimise their food waste by the possibility of saving money (83%). They are also motivated because they value the food they buy (80%), however they are less likely to be motivated by this factor when compared to the total sample (88%).

Willingness to change

The behaviours linked to food waste that younger respondents are less likely to be doing, but would consider include:

- Rotating food from the back to the front of the shelf (16% do this compared with 34% of the total sample, and 59% would consider doing this),
- Avoid buying bulk special deals or buying more because of promotions when it is not necessary (18% do this compared with 29% of the total sample, and 57% would consider doing this),
- Using up food at home before new food is bought (43% do this compared with 53% of the total sample, and 51% would considering doing this),
- Buying smaller amounts of fresh fruit and vegetables at a time so they are more likely to be eaten before they go off (44% do this compared with 55% of the total sample, and 50% would consider doing this), and
- Being more careful about what food is bought (47% do this compared with 57% of the total sample, and 46% would consider doing this).

Other behaviours that respondents aged 16 to 24 years would consider doing to prevent food waste include:

- Using up fruit and vegetables before they go off – e.g. by making soups, smoothies, freezing them, or making them into jams, chutneys, pickles, stewed fruit (55%), and
- Using the freezer more effectively (51%).

Tools

Tools to help minimise food waste would be well targeted at younger respondents, who in general illustrate the highest potential uptake of these tools. The most popular tools for younger respondents include:

- A fridge magnet with information on how long various foods can be stored in the freezer for (56%),
- Recipes or ideas on how to re-use leftovers or leftover ingredients into new meals (51%),
- Food storage accessories such as containers, pegs, clips, wraps and labels (46%), and
- This group is also more likely to use a free to download app which includes recipes and planning tools (34% compared with 22% of the total sample).

Larger households (5+ household members)

In terms of the number of household members in a household, larger households are more commonly high food wasters (48% of households with 5 or more members) when compared with the total sample. This total group has a median dollar value of \$16.80 of food wasted per week.

Compared with the ethnic mix of respondents in the overall sample, those living in larger households are more likely to be of Pacific Island ethnicity (8% compared to 3% total sample) or Maori ethnicity (12% compared to 7% total sample) and are less likely to be of European ethnicity (80% compared to 87% total sample).

Almost one half (47%) of larger households are high food wasters. Based on available data over 80,000 households in New Zealand with 5 or more household members are potentially high food wasters.

Attitudes

Respondents from larger households are less likely to agree that they make a conscious effort to reduce their waste as much as possible in everyday life (76% compared to 82% of the total sample), and are more likely to admit that busy lifestyles make it hard to avoid wasting food (43% compared to 34% of the total sample).

Main cause of food waste

Leftovers not being eaten or re-used is the main cause of food waste in larger households (36% compared to 31% of the total sample). Waste from leftovers not being eaten is most commonly caused by:

- Leftovers being put in the fridge but not eaten (70%),
- Leftovers being put in the fridge and forgotten about (68%), or
- Leftovers being put in the fridge and meant to be eaten, but are not because plans change (67%).

Behaviours

Shopping for food

Larger households are more likely to demonstrate three potentially food waste causing practices when shopping for food. They are more likely to:

- Buy more food if it has a special deal or promotion (60% compared to 47% of the total sample),
- To be influenced by children or a friend or family member when food shopping (31% compared to 21% of the total sample), and
- To purchase more than enough food when food shopping (31% compared to 26% of the total sample).

Cooking and preparing food

Larger households are more likely to make extra just in case it is needed when cooking and preparing food (27% do this most or all of the time compared to 18% of the total sample). This group also prefers to serve too much food rather than not enough (57% compared to 38% of the total sample).

Leftovers

Leftovers are commonly wasted within larger households because they are put in the fridge and thrown out later (63% do this some, most or all of the time, compared to 50% of the total sample), or they are thrown out because someone in the household didn't eat them (55% compared to 42% of the total sample).

Storing food

Larger households are less likely to practice good food storage behaviours such as rotating products from the back to the front of the shelf, fridge or freezer so the oldest food is at the front, and the newest food is at the back (25% do this most or all of the time, compared to 32% of the total sample), and using air-tight containers and other storage accessories (73% compared to 79% of the total sample).

Expired or perished foods

Larger households are more likely to discard older or perished foods than the total sample. For instance:

- Bread that is mouldy is more commonly thrown out by larger households rather than cut off and used (73% compared to 65% of the total sample),
- Cooked food items stored in the freezer more than a few months, (30% compared to 24% of the total sample), and
- Whole blocks of hard cheese that have grown mould (26% compared to 20% of the total sample).

Motivations

Larger households are motivated to minimise food waste within their household by the possibility of saving money (84%) and because of the value placed on the food they buy (82%).

Willingness to change

Larger households are generally already demonstrating food waste prevention behaviours to a level similar to the total sample. The behaviours that they are most likely to consider include:

- Rotating food from the back to the front of the shelf (58%),
- Using up fruit and vegetables before they go off – e.g. by making soups, smoothies, freezing them, or making them into jams, chutneys, pickles, stewed fruit (55%), and
- Avoid buying bulk special deals or buying more because of promotions when it is not necessary (54%).

Underutilised food waste prevention behaviours

Larger households are more likely to be underutilising the following food waste prevention behaviours than the total sample:

- Avoid buying bulk specials or buying more because of promotions when it is not necessary (22% already do this, compared to 54% of the total sample),
- Create a weekly menu plan (23% already do this, compared to 50% of the total sample), and
- Rotate foods from the back to the front of the shelf (newest at the back, oldest at the front) (31% already do this, compared to 58%).

Tools

Tools that would help larger households minimise food waste include:

- Recipes or ideas on how to re-use leftovers or leftover ingredients (50%),
- A fridge magnet with information on how long to store various foods for (47%), and
- Stickers saying “Use first” to put on food items in the fridge or pantry that need using up (41%).

Families with children (aged 15 years or younger)

Households with children are more likely to be high food wasters (43% of households with children) when compared with the total sample. This total group has a median dollar value of \$14.00 of food wasted per household per week.

Attitudes

Families with children are more likely to:

- Spend a lot of time together as a household (80% compared to 69% of the total sample),
- Agree that their household is on a very tight budget (66% compared to 60% of the total sample), and
- Believe that busy lifestyles make it hard to avoid wasting food (40% compared to 34% of the total sample).

Main cause of food waste

The main causes of food waste amongst families with children are leftovers not being eaten or re-used (32%), or children or fussy eaters within the household (26%). Families with children waste leftovers within the household, either because:

- Leftovers are put in the fridge and meant to be eaten but plans change (dinner was eaten out, or a different meal was cooked) (66%),
- Leftovers are put in the fridge and forgotten about (65%),
- Leftovers are put into the fridge but no one feels like eating them (63%), or
- Children caused food waste within these households due to not finishing the meal they were served (75%).

Behaviours

Shopping for food

Households with children are more likely to purchase more than enough food (32% compared to 26% of the total sample), and are influenced to buy more, if the food has a special deal or promotion (57% compared to 47% of the total sample).

Cooking and preparing food

Households with children tend to make extra food just in case it is needed when cooking and preparing meals (66% do this some, most or all of the time compared to 60% of the total sample).

Leftovers

Leftovers are commonly thrown out by families with children, because:

- They are put into the fridge and then thrown out later (60% do this some, most or all of the time compared to 50% of the total sample),
- Someone in the household didn't eat them (55% compared to 42% of the total sample), and
- They weren't put into the fridge after the meal was served and eaten (38% compared to 27% of the total sample).

Storing food

Households with children are slightly less likely to use storage techniques such as

- Rotating products from the back to the front of the shelf, fridge or freezer so the older foods that need using first are at the front (27% do this most or all of the time compared to 32% of the total sample), or
- Turning fruit and vegetables that are getting old into things like soups, smoothies, jams or chutneys (19% compared to 23% of the total sample).

Expired or perished foods

Households with children are slightly less likely to use food that has perished than the total sample. These respondents are more likely to throw out bread that is mouldy rather than cut off the mouldy parts and use the rest (72% compared to 65% of the total sample).

Motivations

Families with children are motivated to reduce food waste because:

- They value food and don't want to throw it away (85%),
- To save money by not having to buy more food (84%), and
- Wanting to manage their home efficiently (77%).

Willingness to change

The behaviours that respondents from families with children would be willing to change to minimise their food waste include:

- Using up fruit and vegetables before they go off (38% do this and 56% would consider compared to 48% of the total sample), and
- Rotating food from the back to the front of the shelf (34% do this and 56% would consider compared to 54% of the total sample).

These households are more willing than the total sample to:

- Use the freezer more effectively (47% would consider doing compared to 39% of the total sample), and
- Have better communication in the household around meal times (56% do this and 36% would consider doing compared to 33% of the total sample).

Tools

Tools that would help these households minimise their food waste are:

- Recipes or ideas on how to re-use leftovers or leftover ingredients (47%),
- A fridge magnet with information on how long various foods can be stored for (43%), and
- Food storage accessories such as containers, pegs, clips and wraps (40%).
- These households are more likely than the total sample to want posters on portion sizes for 2 year olds, 5 year olds, teenagers and adults in public places (27% compared to 16% of the total sample).

High income households (\$100,000 or more per annum)

High income households, who earn at least \$100,000 per annum, are more commonly high food wasters (39% of households with income of \$100,000 or more per annum) when compared with the total sample. This total group has a median dollar value of \$12.60 of food wasted per week.

Almost four in ten (39%) of high income households are high food wasters. Based on available data this segment is estimated to be over 140,000 households in New Zealand.

Attitudes

High income households are:

- Less likely to agree that they make a conscious effort to reduce their waste as much as possible in everyday life (78% compared to 82% of the total sample), and are
- The group that agrees least that their household is on a very tight budget (32% compared to 60% of the total sample), and are
- Less likely to agree that food waste reduction is an important issue (77% compared to 82% of the total sample).

Main cause of food waste

The main cause of food waste within high income households is leftovers not being eaten or re-used (33%). Leftovers are wasted in high income households due to:

- Leftovers being put in the fridge but plans changed (dinner was eaten out, or another meal was cooked) (69%), or
- They are put in the fridge but forgotten about (50%).

Behaviours

Shopping for food

This household group is least driven by budget (49% never or hardly ever shop to a set budget, compared to 31% of the total sample). They are also:

- Less likely to check what is in the cupboards, fridge or freezer before going food shopping (67% do this most or all of the time compared to 73% of the total sample),
- Less likely to think carefully about how much food they will use (57%, compared to 65% of the total sample), and
- Less likely to be careful about buying only foods that they know will get used (55%, compared to 65% of the total sample).

Cooking and preparing food

High income households are:

- More likely to make meals based on what they feel like, and will buy new ingredients for the meal (26%, compared to 18% of the total sample), and are
- Less likely to look in the cupboard, fridge or freezer and make a meal from ingredients that need using up first (45%, compared to 54% of the total sample)

Leftovers

Leftovers are more commonly thrown out within high income households. They are either:

- Put in the fridge and thrown out later (57% do this some, most or all of the time compared to 49% of the total sample),
- Thrown out straight after the meal (24% compared to 19%), or
- Thrown out from making more than planned (25% compared to 22%).

Storing food

Respondents from high income households are less likely to demonstrate storage behaviours such as:

- Making space in the fridge, freezer or cupboards for items that need using up (66% do this sometimes, most or all of the time compared to 71% of the total sample), and

- Rotating products from the back to the front of the shelf, fridge or freezer so the food that needs to be eaten is at the front (27% do this most or all of the time compared to 32% of the total sample).

Motivations

High income households are generally less receptive to the motivators that would help them minimise food waste within their household. They are less motivated to:

- Reduce food waste through wanting to manage their home efficiently (72% are motivated by this compared to 77% of the total sample),
- To value the food they buy (80% compared to 88% of the total sample), and
- To be influenced to minimise their food waste from their upbringing or the influence of their parents (71% compared to 76% of the total sample).

Willingness to change

High income households are less likely to consider practicing the following behaviours to minimise their household food waste:

- Avoiding buying bulk special deals or buying more because of promotions when it is not necessary (30% would not consider doing compared to 22%),
- Creating a weekly menu plan (28% compared to 27%), and
- Sharing extra food that will not be eaten on time with friends, family or colleagues (26% compared to 18% of the total sample).

Tools

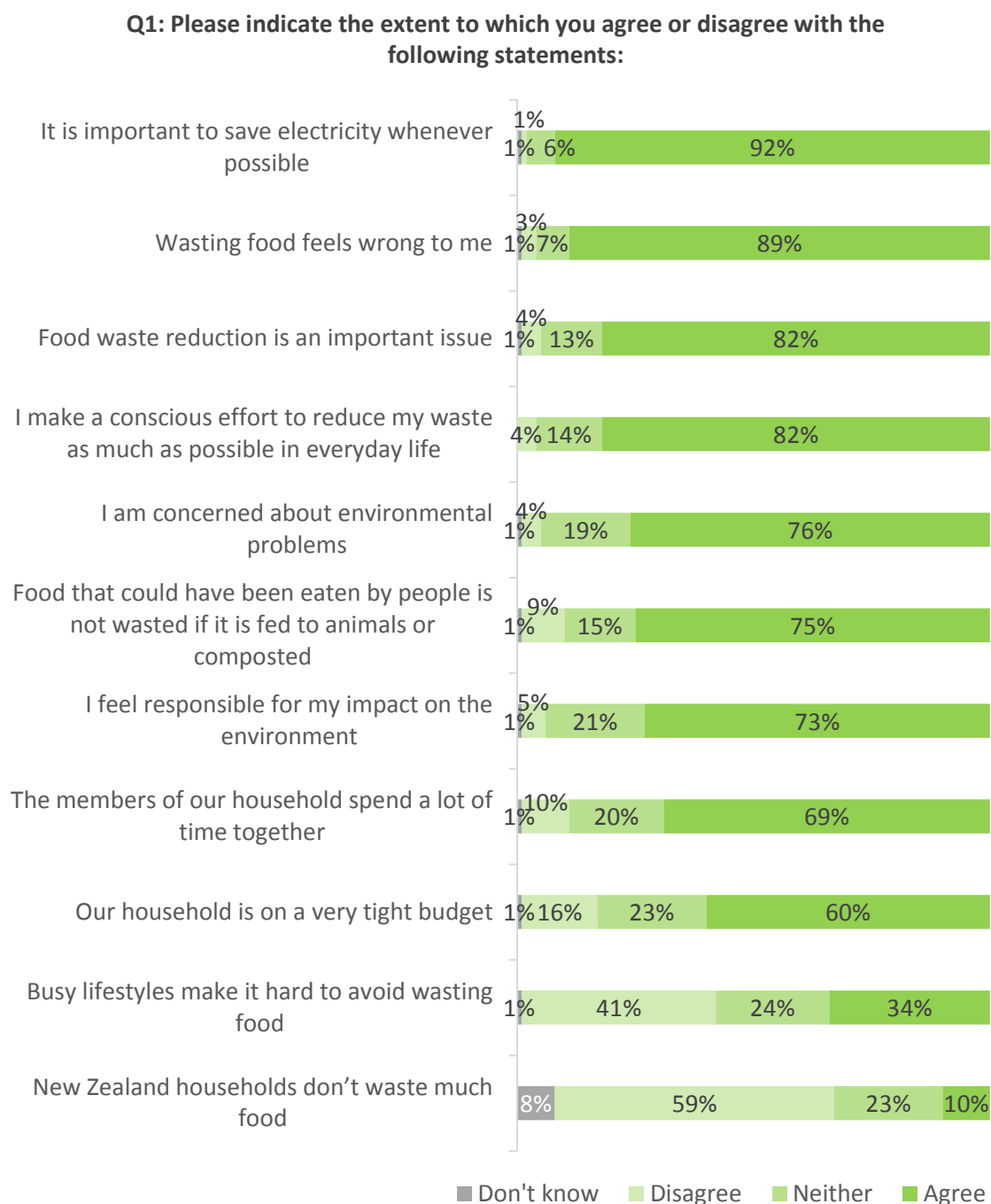
Recipes or ideas on how to re-use leftovers or leftover ingredients is the tool that high income households chose as the most helpful to reducing their household food waste (42%). Other tools that would help them minimise food waste in their household include:

- A fridge magnet with information on how long various foods can be stored in the freezer for (40%), and
- An easy-to-use guide to storing fresh fruit and vegetables (35%).

Results of individual questions

Chart 1: General attitudes

Base: All respondents (n=1,300)



The majority of respondents (82%) believe that food waste reduction is an important issue and that wasting food feels wrong (89%). Also, more respondents (59%) believe that New Zealand households waste food compared with 10% who believed households don't waste much food. Electricity conservation is considered by slightly more respondents (92%) to be an important issue when

compared with food waste prevention. Overall, 82% of respondents make a conscious effort to reduce waste as much as possible which is encouraging for food waste behavioural change campaigns as the general population is likely to pay attention and relate to the messages and activities promoted.

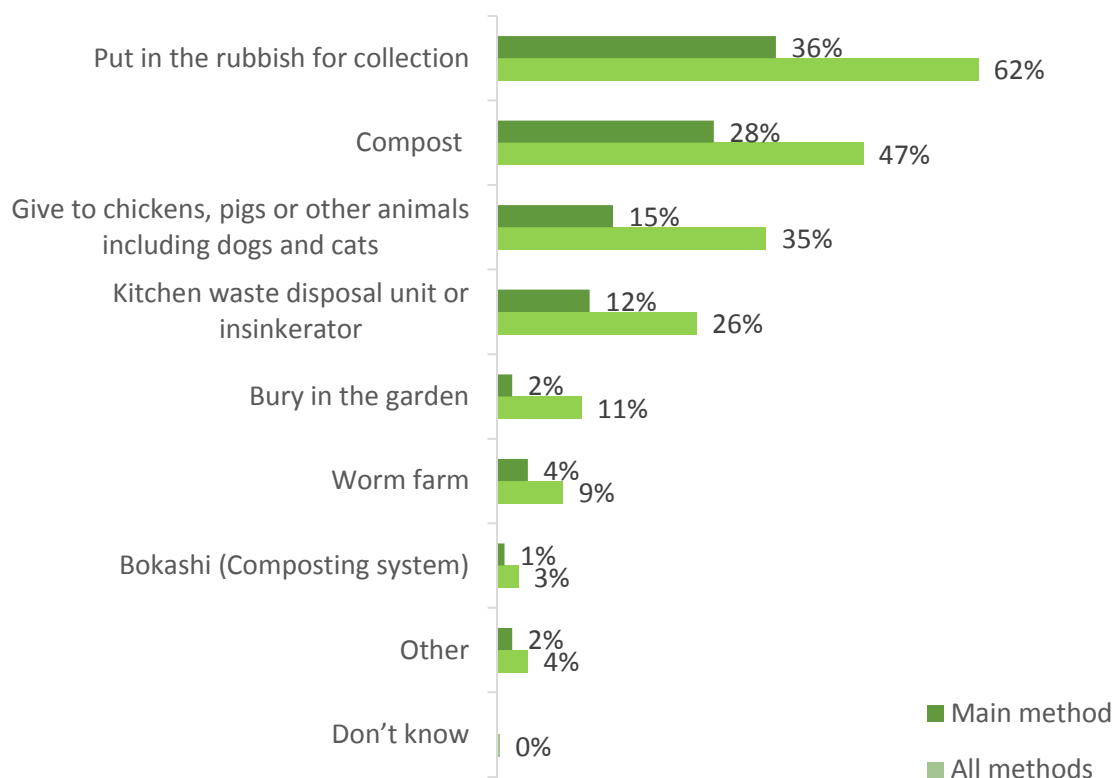
A number of these measures can be used as baseline indicators of attitudes towards food waste to evaluate the effectiveness of behaviour change campaigns in future surveys.

Chart 2: Methods of household food waste disposal

Base: All respondents (n=1,300)

Q2: How do you usually get rid of food waste in your household? Tick all that apply

Q3: And, which of these do you use to get rid of most of your food waste? Pick only one

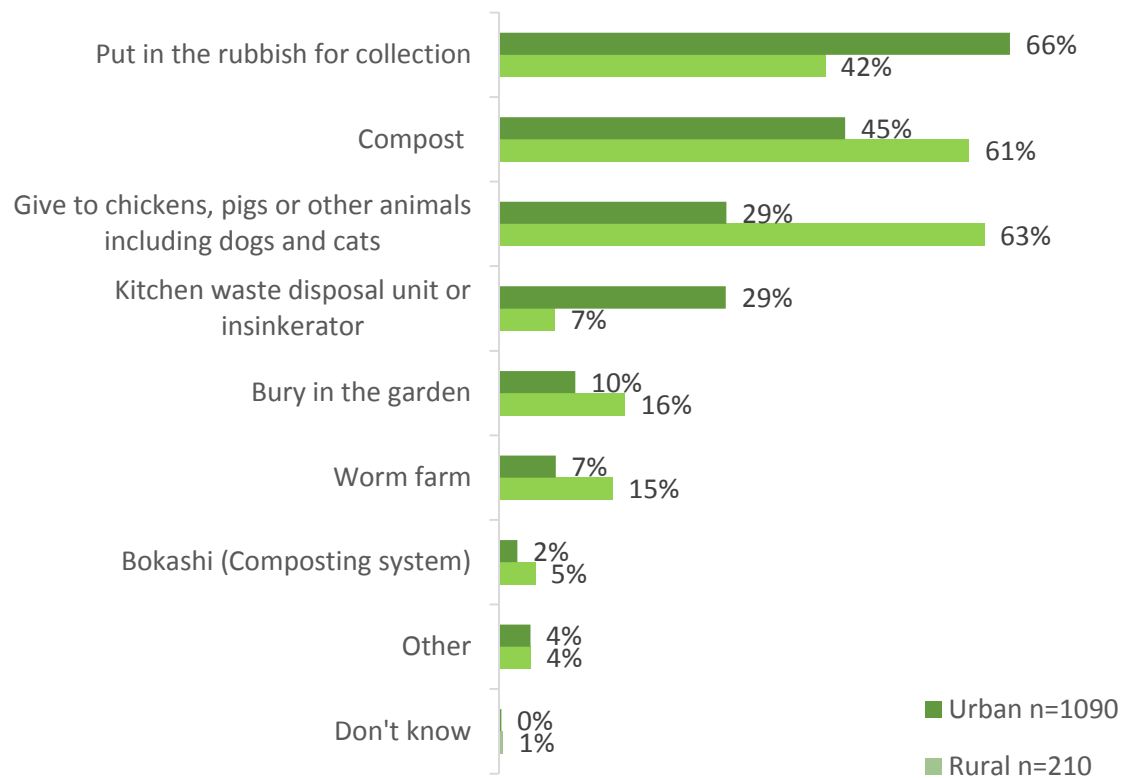


The main method of disposal of food waste is putting it in the rubbish for collection (36% main method) and overall 62% of respondents dispose of their food waste this way. Compost (27% main method) and giving to animals (15% main method) are the next most common ways of disposing of food waste. Other methods mentioned for disposing of food waste are throwing waste over the back fence, throwing waste in the paddock and burning food waste.

Chart 3: Methods of household food waste disposal by rural or urban living

Base: All respondents (n=1,300)

Q2: How do you usually get rid of food waste in your household? Tick all that apply



Respondents who live in urban areas are more likely to:

- Dispose of food waste by putting it in the rubbish for collection (66% compared to 42% rural), and
- Use kitchen waste disposal units or insinkerators (29% compared to 7% rural).

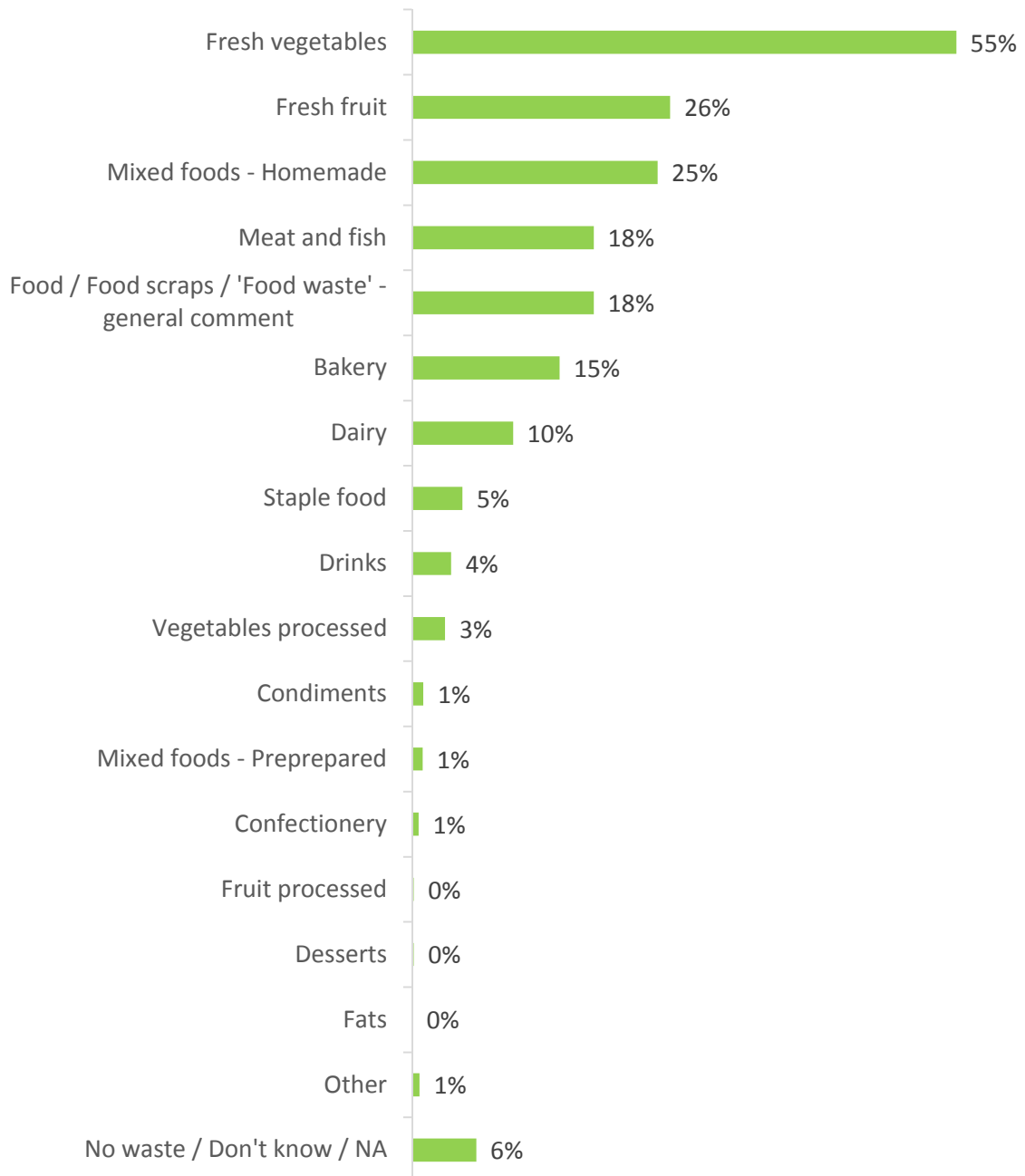
Respondents who live in rural areas are more likely to:

- Dispose of food waste by compost (61% compared to 45% urban), and
- Give to animals (63% compared to 29% urban).

Chart 4.1: Most commonly wasted foods

Base: All respondents (n=1,300)

Q4: What are the most commonly thrown out or wasted foods in your household? Please be as specific as possible.

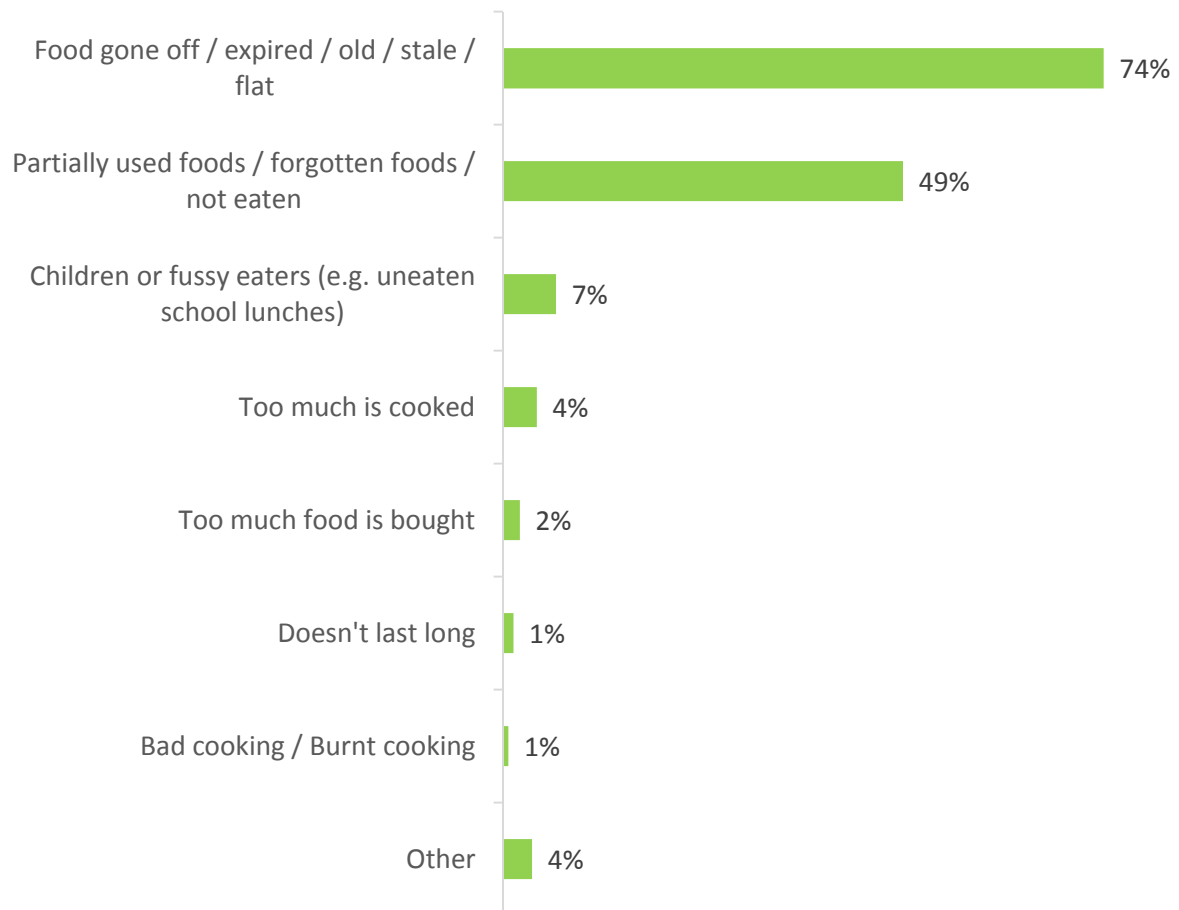


Fresh vegetables (55%) and fruit (26%) are the foods most commonly wasted by New Zealand households. This is followed by homemade mixed foods (25%), which include leftovers.

Chart 4.2: Reasons for waste of most commonly wasted foods

Base: Respondents who mentioned a reason for the food being wasted at Q4 (n=599).

Q4: What are the most commonly thrown out or wasted foods in your household? Please be as specific as possible.



The chart above highlights respondents' reasons for foods being wasted when asked what the most commonly thrown out or wasted foods in their household are. The most common reasons for the food being wasted is because it had gone off, expired, gotten old, stale, or flat (74%), or partially foods, or forgotten foods were not eaten (49%).

Table 1: Amount spent on food per week*Base: All respondents (n=1,300)***Q5: On average, how much money do you or your household spend on food to be eaten at home per week?**

Amount spent on food per week	% of total sample
\$100 or less	31%
\$101 to \$140	20%
\$141 to \$200	26%
\$201 and over	23%
Median dollar value spent on food per week	\$140.00

This study uses the median dollar value as the measure of central tendency (the average) rather than the mean dollar value. This is because the median value is less affected by outliers and skewed data, which is characteristic of this data given that a minority of households tend to spend a large amount on food and waste a lot of money on food that is thrown out. As data becomes more skewed the mean loses its ability to provide the best measure of central tendency because the skewed data drags it away from the typical value.

The median dollar value spent on food per week is \$140.00 per household. As expected this figure is strongly influenced by the number of people in the household ranging from \$80 in single person households to \$200 in households with 5 or more members. However, on a per person basis, households with only 1 or 2 members spend more on food per week.

Table 2.2: Amount spent on food per week by household size*Base: All respondents (n=1,300)***Q6: What percentage of this money spent on food does your household throw away that could have been eaten per week? This also includes any food that was fed to animals or composted.**

	Number in household				
	1	2	3	4	5+
Median dollar value spent on food per week per household	\$80.00	\$120.00	\$140.00	\$180.00	\$200.00

Table 3: Proportion of money spent on food that is wasted per week*Base: All respondents (n=1,300)*

Percentage of money spent on food that is wasted per week	% of total sample
0%-2%	26%
3%-5%	29%
6%-10%	26%
More than 10%	19%
Median percentage of money spent on food that is wasted per week	5%

Almost one fifth of respondents (19%) throw away food worth over 10% of their weekly food spend and almost one half (45%) throw away food worth 6% or more of their weekly food spend.

The age of the respondent, number of people in the household, household income and the type of household have an influence on the proportion of food waste generated in relation to their weekly food spend.

- Younger respondents (aged 16 to 24 years) commonly waste food worth 6% or more of their weekly food spend (70% compared to 45% of the total sample),
- Households with 5 or more household members (66%),
- Households with a household income of \$150,000 or more per year (61%), and
- Families with children (60%).

Table 4.1: Proportion of money spent on food that is wasted per week by age*Base: All respondents (n=1,300)*

Q6: What percentage of this food bought does your household throw away that could have been eaten per week? This also includes any food that was fed to animals or composted.

Age	n	Percentage who throw away food worth 6% or more of their weekly food spend
16 to 24 years	203	70%
25 to 39 years	289	62%
40 to 54 years	361	45%
55 years and over	447	23%
Total sample	1300	45%

Table 4.2: Proportion of money spent on food that is wasted per week by number of people in household

Base: All respondents (n=1,300)

Number of people in household	n	Percentage who throw away food worth 6% or more of their weekly food spend
1	184	28%
2	371	32%
3	282	43%
4	213	62%
5+	247	66%
Total sample	1300	45%

Table 4.3: Proportion of money spent on food that is wasted per week by household income

Base: All respondents (n=1,300)

Household income	n	Percentage who throw away food worth 6% or more of their weekly food spend
Less than \$40,000 per year	344	33%
\$40,000 to \$79,999 per year	391	44%
\$80,000 to \$99,999 per year	296	44%
\$100,000 or more per year	71	55%
Total sample	1300	45%

Table 4.4: Proportion of money spent on food that is wasted per week by household type

Base: All respondents (n=1,300)

Household type	n	Percentage who throw away food worth 6% or more of their weekly food spend
Family only adults (16+)	570	39%
Family with children	397	60%
Shared	148	50%
Single	182	28%
Total sample	1300	45%

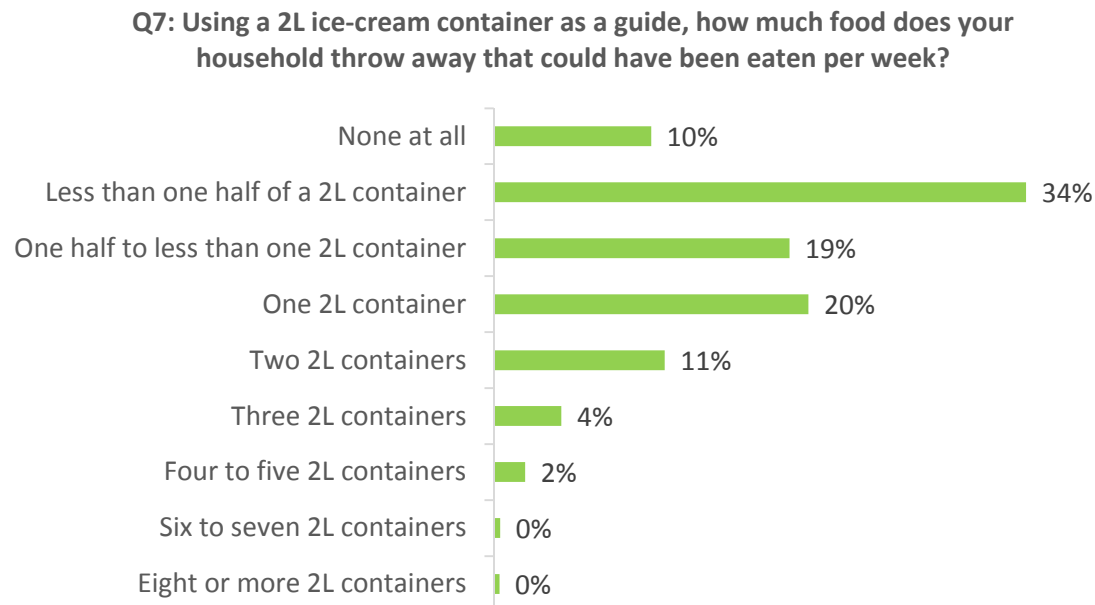
Table 5: Dollar value of food wasted per week*Base: All respondents (n=1,300)*

Dollar value of food wasted per week	% of total sample
\$0 to \$3.00	27%
\$3.01 to \$7.00	22%
\$7.01 to \$16.00	25%
\$16.00 and over	26%
Median dollar value of food wasted per week	\$7.50
Median dollar value of food wasted per year	\$390

The dollar value of food wasted was calculated by combining the amount of money spent on food per week with the percentage of the dollar value of food thrown away per week. The median dollar value of food wasted by New Zealand households was \$7.50 a week, which equates to \$390 a year per household. This translates to \$144 in food wasted per capita per year in New Zealand based on an average of 2.7 people per household. This extrapolates to over \$600 million of food wasted by New Zealand households each year.

Chart 5: Volume of avoidable food wasted per week

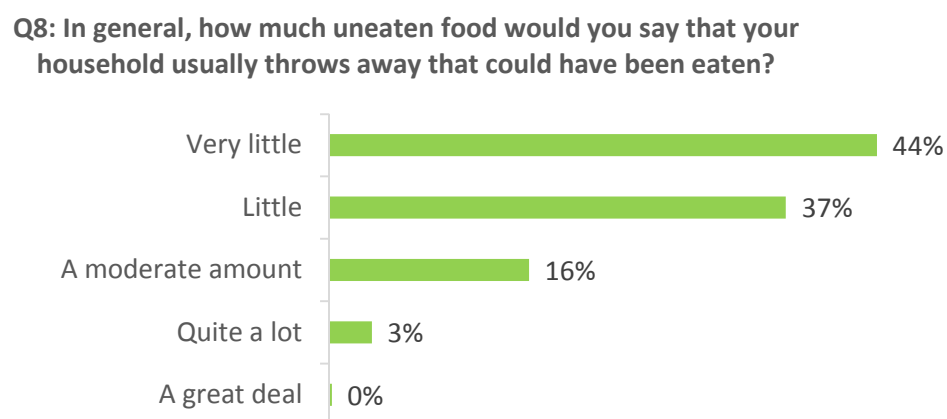
Base: All respondents (n=1,300)



In terms of the volume of food wasted per week, over four in ten respondents (44%) threw away less than 1 litre of food per week. This includes 10% of respondents who wasted no food at all.

Chart 6: Perceptions of household's food waste

Base: Respondents who wasted some volume of food (n=1170)



In general respondents do not view their own food waste behaviour as being wasteful. Of respondents who waste food, over eight in ten respondents (81%) believed that their household wastes little or very little food that could have been eaten.

There is a relationship between food waste behaviour and perceptions. The higher the percentage dollar value spent on food that is wasted the more likely these respondents are to state their food

waste as being a moderate amount or quite a lot when compared to those who waste less percentage of food in dollar terms. However, 52% of respondents who waste more than 10% of their food spend state that they waste little or very little food.

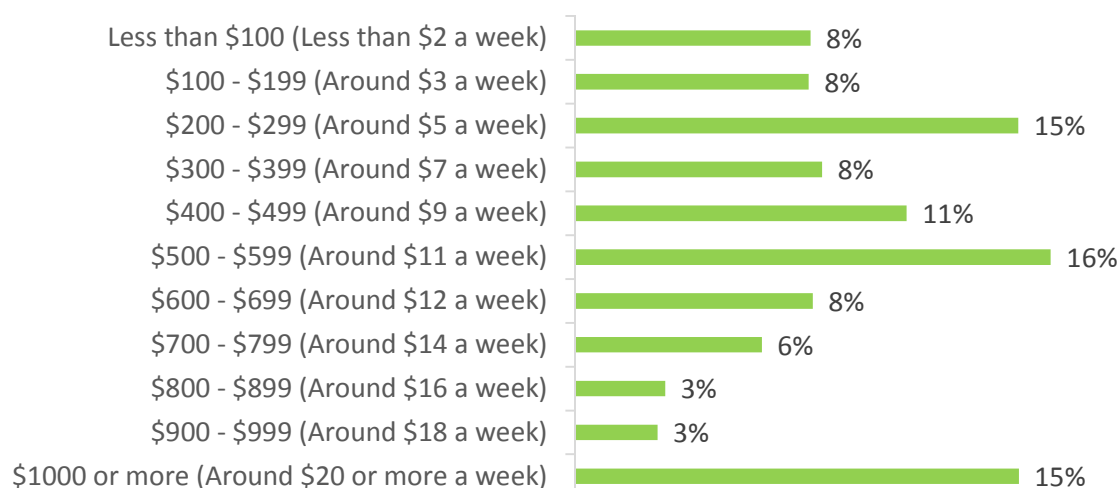
Table 7: Household's actual food waste versus perceptions of household's food waste

Q6 – Percentage of dollar value spent on food that is wasted	Q8 – Perception of food waste					
	n	A great deal	Quite a lot	A moderate amount	Little	Very little
2% or less	233	0%	0%	2%	23%	75%
3%-5%	369	0%	1%	8%	34%	57%
6%-10%	329	0%	3%	22%	46%	29%
More than 10%	238	0%	11%	36%	40%	13%

Chart 7: Perceptions of food wasted by New Zealand households

Base: All respondents (n=1,300)

Q9: Approximately how much would you estimate that the average New Zealand household spends on food that is purchased but never eaten each year?



Respondents are generally unaware of the amount of food wasted in New Zealand each year. This research found that the average New Zealand household wastes almost \$400 per year, and other research suggests this figure could be as much as \$500 per year (Waste Not Consulting, 2009). Therefore, up to four in ten respondents (38%) underestimate the dollar value of food wasted by New Zealand households each year (estimate under \$400 per year).

There is a relationship between food waste behaviour and perceptions of food waste in New Zealand. Those with higher food waste estimate a higher average food waste in New Zealand

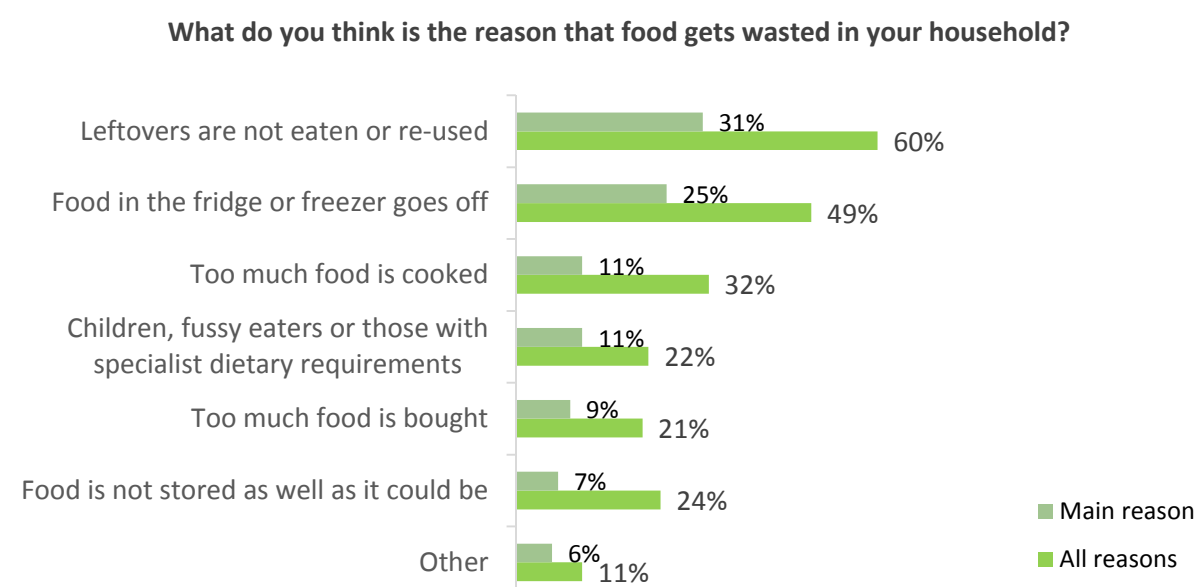
households than those with lower food waste. This suggests that high food wasters view their food waste behaviour as being normal through expectations that other households are wasting just as much, if not more than they are wasting.

Table 8: Household's actual food waste versus perceptions of New Zealand households' food waste

	Q6 – Percentage of dollar value spent on food that is wasted	n	Q9 – Estimate of average NZ household food waste per year		
			Less than \$300	\$300 to \$599	\$600 or more
Q6	0%-2%	331	40%	31%	29%
	3%-5%	383	32%	41%	27%
	6%-10%	332	22%	38%	40%
	More than 10%	253	25%	26%	49%

Chart 8: Reasons for food wastage in households

Base: Respondents who indicated that they have food waste at Q8 (n=1,170)

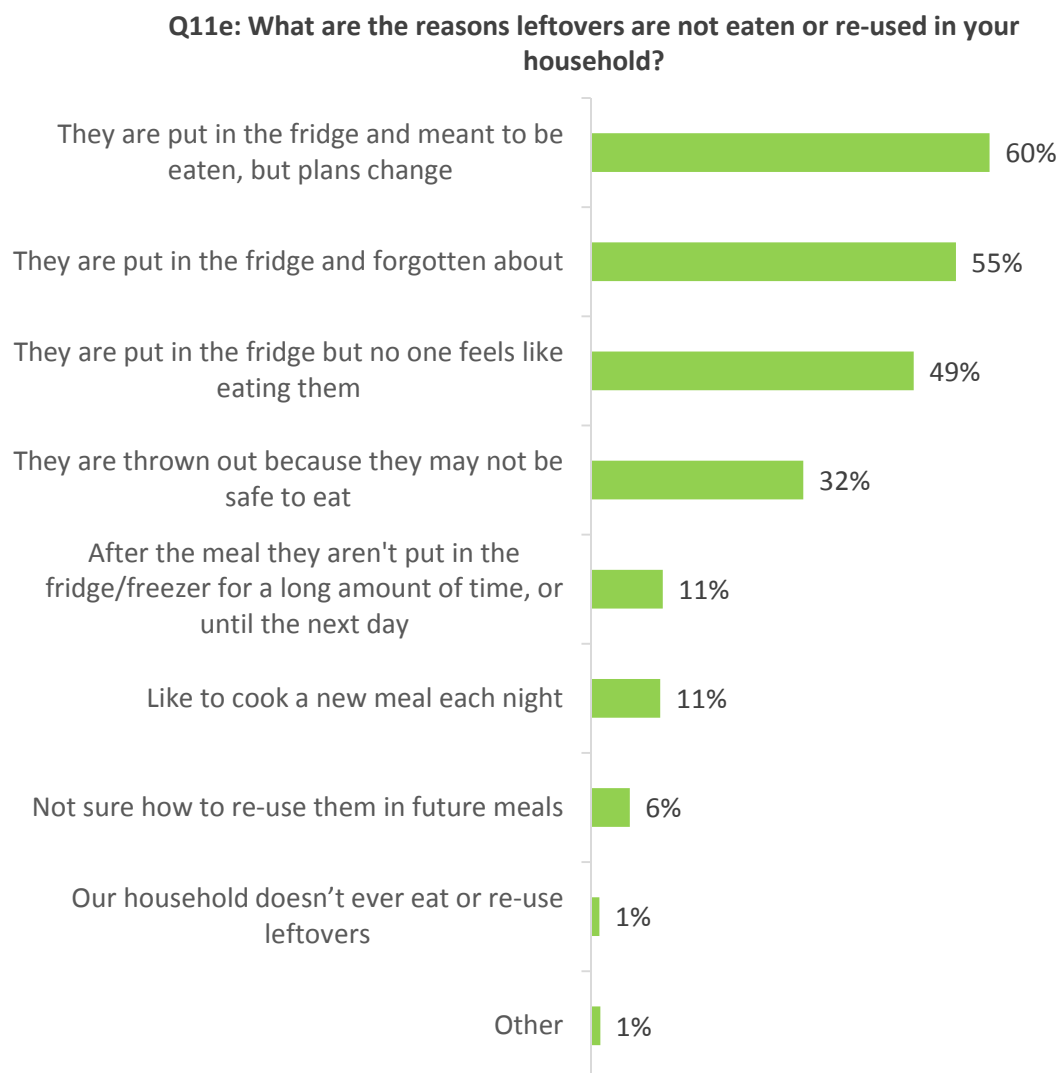


There are various reasons for food waste in New Zealand households. However, the two most commonly mentioned reasons are leftovers are not eaten or re-used (31% main reason and 60% all reasons) and food in the fridge or freezer goes off (25% main reason and 49% all reasons).

The following charts detail the causes of food waste for the main reason given. They are displayed in order of the most to least common main reasons for food waste.

Chart 9.1: Reasons that leftovers are not eaten or re-used

Base: Respondents for which **leftovers are not eaten or re-used** is the main reason that food gets wasted in their household (n=376)

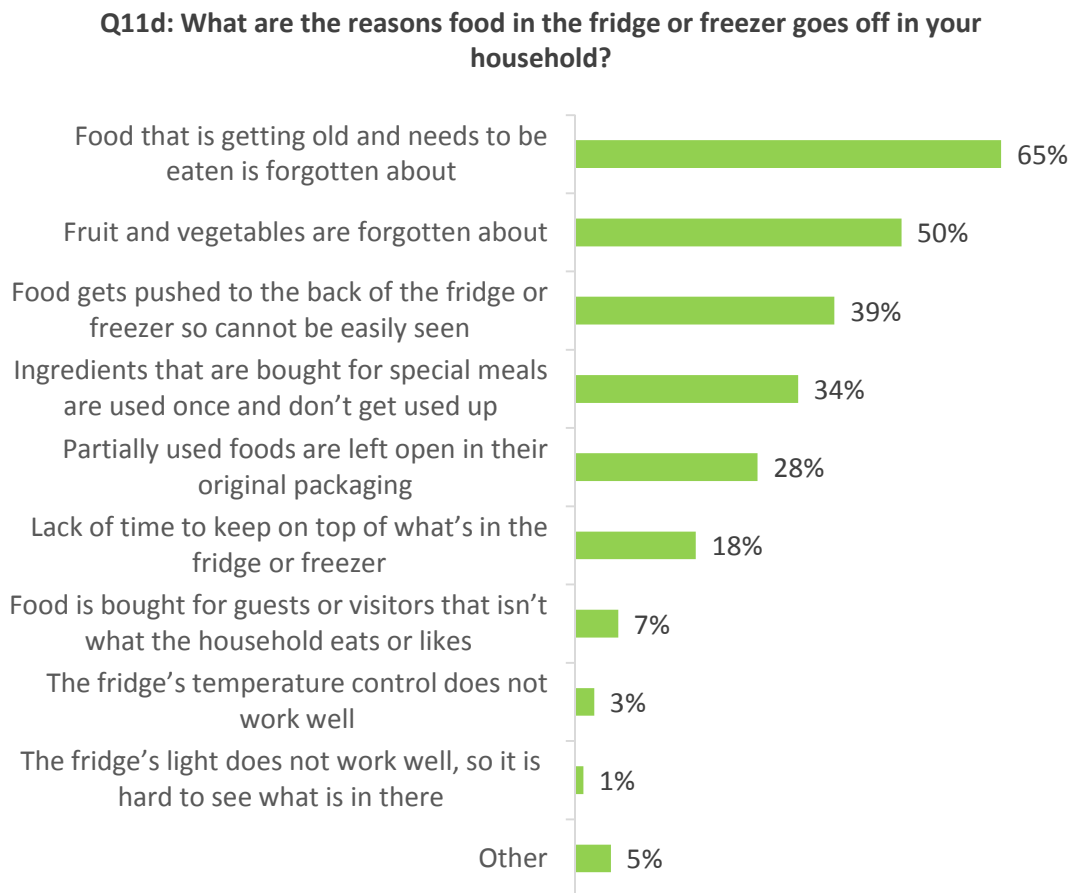


Just over three out of ten respondents (31%) state that the main reason that food gets wasted in their household is due to leftovers that are not eaten or re-used. The most common reason that leftovers are not being eaten or reused is:

- Leftovers are put in the fridge, but are not eaten as plans change (60%),
- Leftovers are put in the fridge and forgotten about (55%),
- Leftovers are put in the fridge but no one feels like eating them (49%), or leftovers are thrown out because they may not be safe to eat (32%).

Chart 9.2: Reasons that food in the fridge or freezer goes off

Base: Respondents for which **food in the fridge or freezer goes off** is the main reason that food gets wasted in their household (n=303)

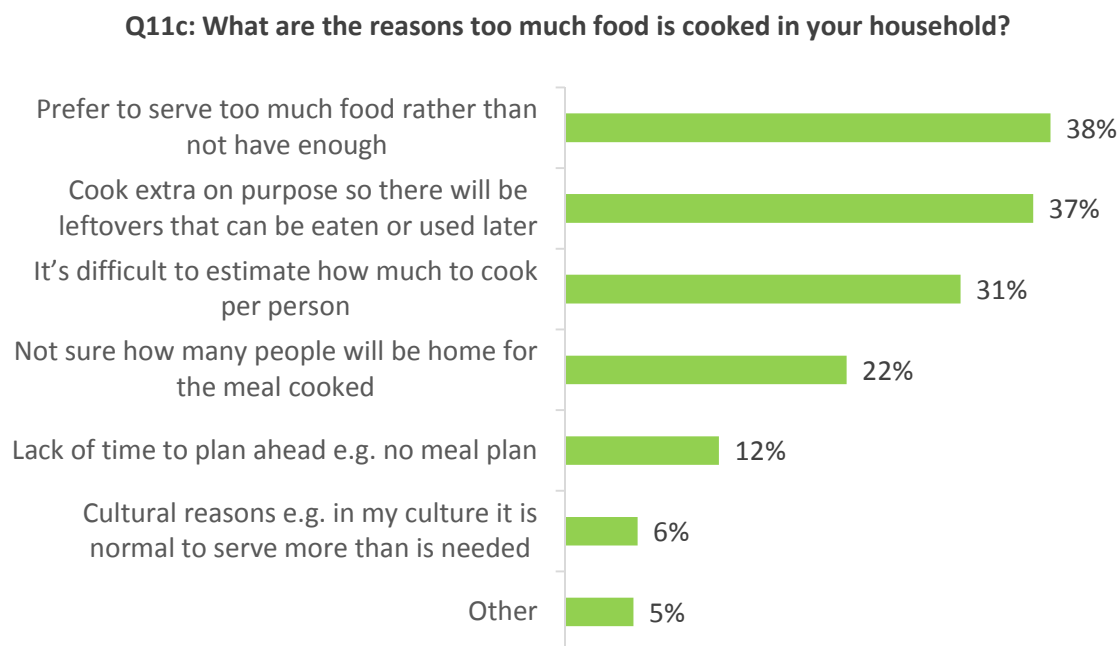


One quarter of respondents (25%) state that the main reason for their food waste is that food in the fridge or freezer goes off. This commonly occurs because:

- Food that is getting old and needs to be eaten is forgotten about (65%),
- Fruit and vegetables are forgotten about (50%),
- Food pushed to the back of the fridge or freezer so cannot be easily seen (39%), and
- Ingredients brought for special meals don't get used up (34%).

Chart 9.3: Reasons that too much food is cooked

Base: Respondents for which **too much food is cooked** is the main reason that food gets wasted in their household (n=140)



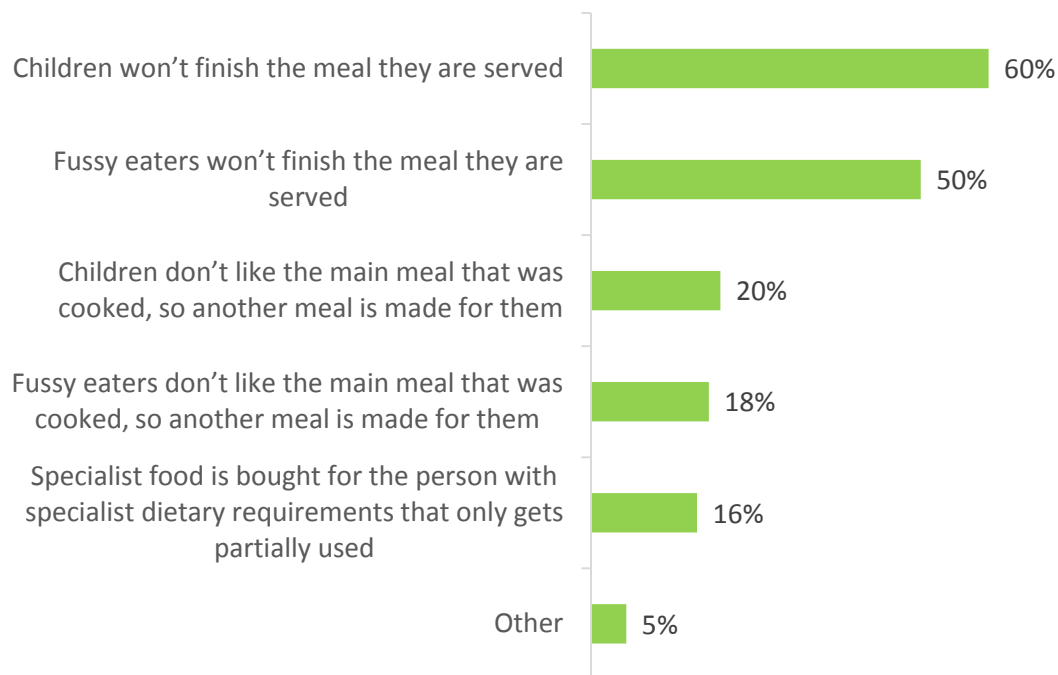
Over one in ten respondents (12%) state that too much food is cooked as their main reason for food waste. There are three main reasons for cooking too much food, these are:

- Preferring to cook too much food rather than not enough (38%),
- Cook extra on purpose so there will be leftovers for later (37%), and
- Difficulty in estimating how much food to cook per person (31%).

Chart 9.4: Reasons children, fussy eaters or those with specialist dietary requirements cause food waste in households

Base: Respondents for which **children, fussy eaters or those with specialist dietary requirements** is the main reason that food gets wasted in their household (n=132)

Q11f: What are the reasons children, fussy eaters or those with specialist dietary requirements cause food waste in your household?



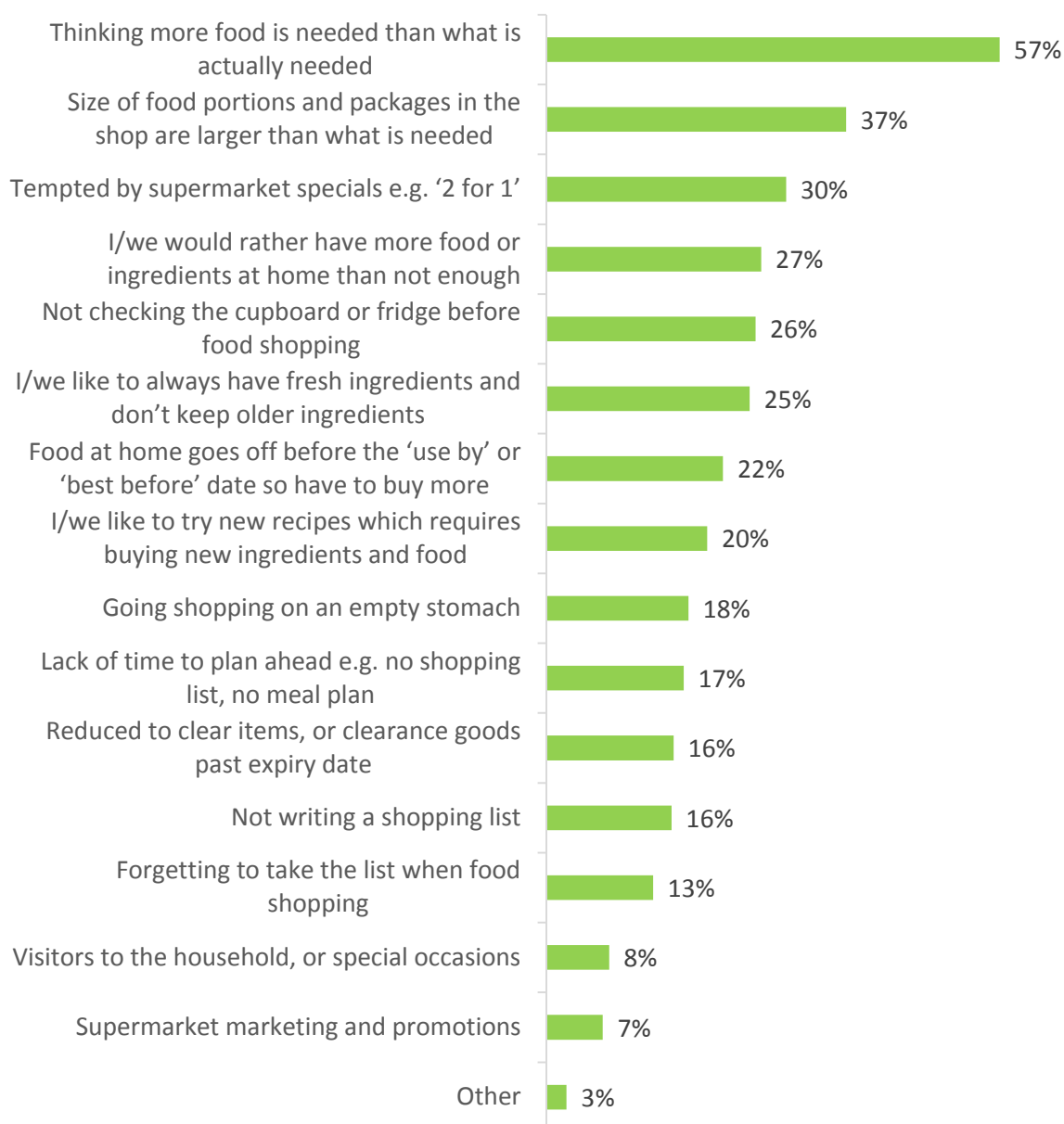
The main reasons for food waste for over one in ten respondents (11%) is due to children, fussy eaters or those with specialist dietary requirements. This is most commonly due to:

- Children not finishing the meal they are served (60%), and
- Fussy eaters not finishing the meal they are served (50%).

Chart 9.5: Reasons that too much food is bought

Base: Respondents for which **too much food is bought** is the main reason that food gets wasted in their household (n=100)

Q11a: What are the reasons too much food is bought in your household?



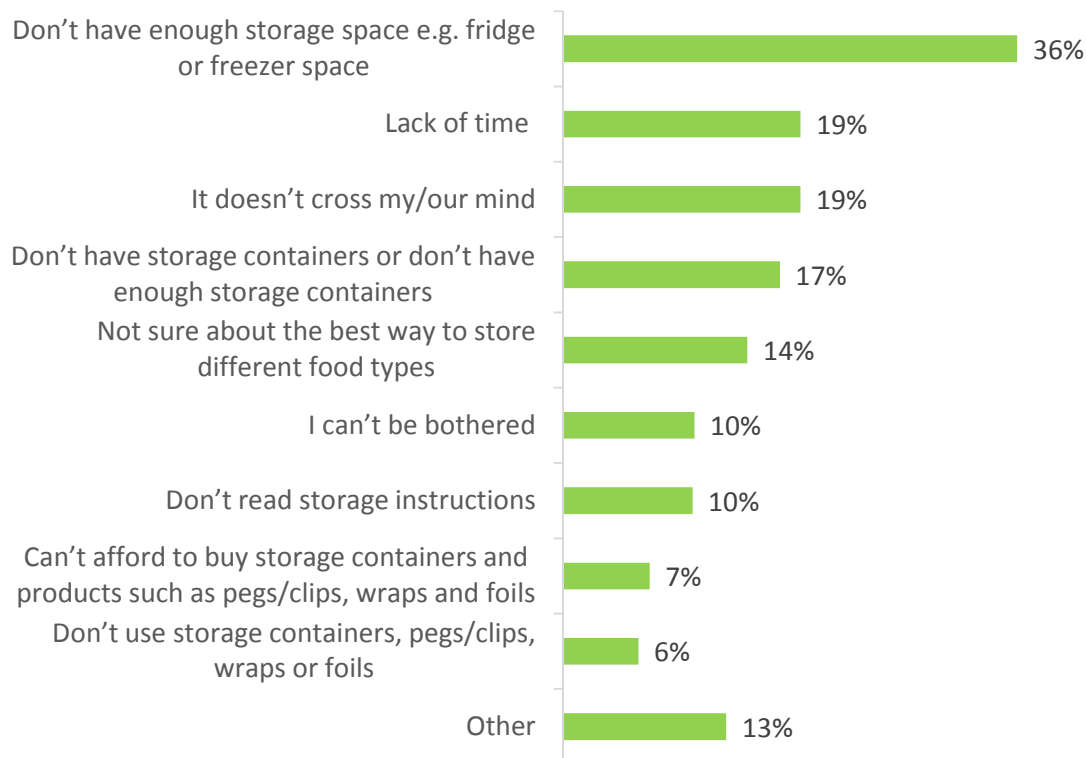
The main reason for food waste for almost one in ten respondents (9%) is that too much food is bought. The most common reason why too much food is bought is:

- Thinking more food is needed is (57%) and,
- It is because of the size of food portions and packages (37%).

Chart 9.6: Reasons that food is not stored as well as it could be

Base: Respondents for which **food is not stored as well as it could be** is the main reason that food gets wasted in their household (n=81)

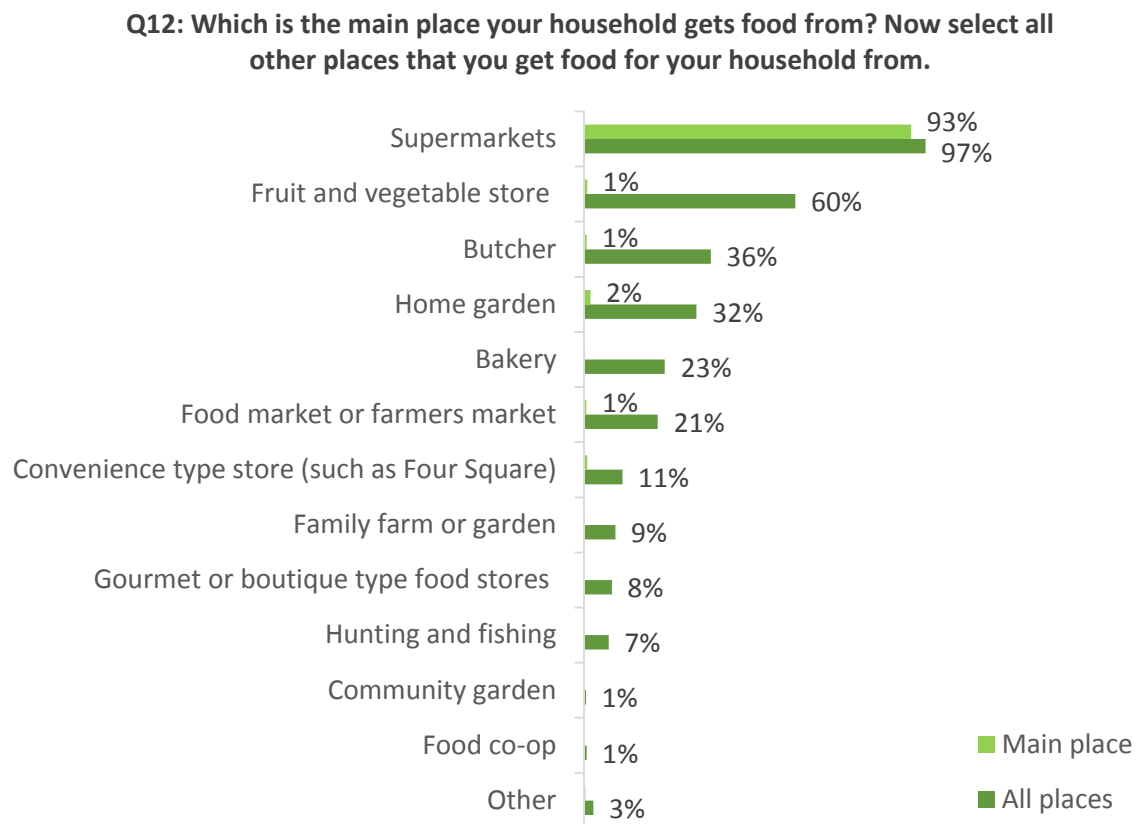
Q11b: What are the reasons food is not stored as well as it could be in your household?



Only 7% of respondents stated their main reason for wasting food as not storing food as well as it could be. The most common reason for not storing food as well as it could be was that they don't have enough storage space (36%).

Chart 10: Sources of food for the household

Base: All respondents (n=1,300)

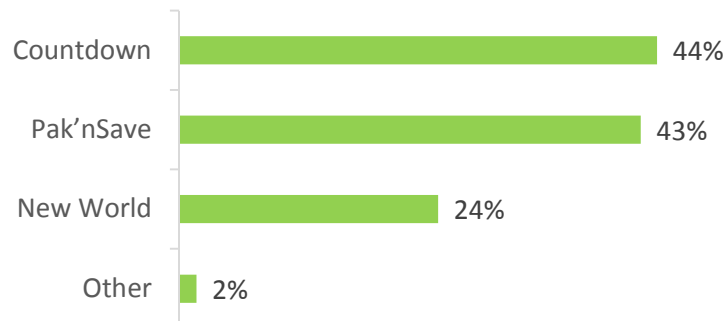


Supermarkets are the main place where respondents get their food from (93% main place). Fruit and Vegetable stores are a common place to get food (60% all places) together with a butcher (36% all places). Almost one third (32%) get food from a home garden.

Chart 11.1: Supermarkets

Base: Respondents for which supermarkets is a source of food for their household (n=1,255)

Q13: Which supermarket does your household mainly buy food from?



Countdown and Pak'nSave are the most used supermarkets for food shopping. High food wasters are slightly more likely to shop at Pak'nSave (46%) than Countdown (40%).

Chart 11.2: Supermarkets by household food wastage groups

Base: Respondents for which supermarkets is a source of food for their household (n=1,255)

Q13: Which supermarket does your household mainly buy food for your household from?

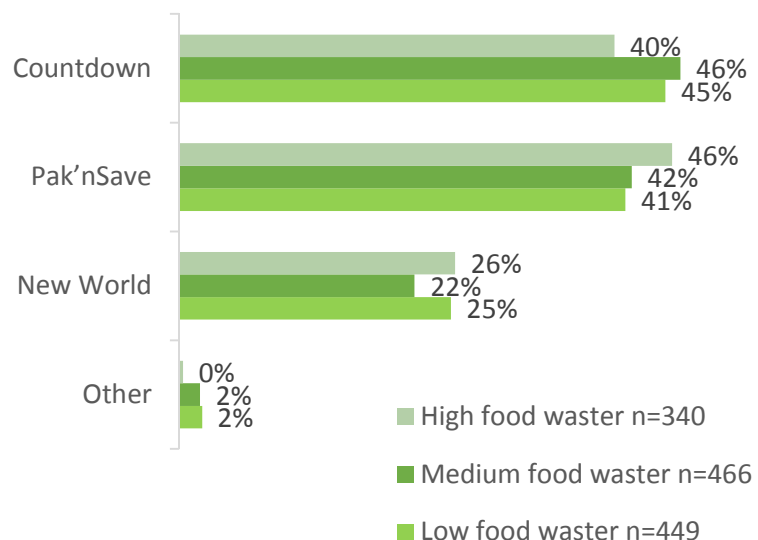
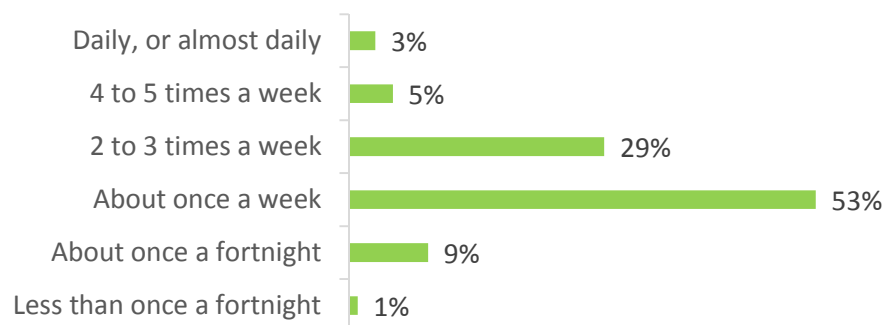


Chart 12: Frequency of shopping for food

Base: Respondents who are responsible for food purchasing for the household from retail stores (n=1,239)

Q14: How often do you go shopping to buy food for your household?



Over one half of respondents (53%) shop for food once a week, while almost three in ten (29%) shop 2 to 3 times a week. High food wasters shop more frequently when compared to low food wasters. Almost one half of high food wasters (47%) shop for food at least two times per week compared with just 29% of low food wasters, and 35% of the total sample.

Table 9: Frequency of shopping for food by household food wastage groups

Base: Respondents who are responsible for food purchasing for the household from retail stores (n=1,239)

Q14: How often do you go shopping to buy food for your household?

	Household food wastage group			Total sample
	Low	Medium	High	
Daily, or almost daily	2%	2%	4%	3%
4 to 5 times a week	4%	5%	4%	5%
2 to 3 times a week	23%	28%	39%	29%
About once a week	59%	52%	47%	53%
About once a fortnight	10%	12%	5%	9%
Less than once a fortnight	2%	1%	1%	1%

Chart 13: Food shopping habits and behaviours

Base: Respondents who are responsible for food purchasing for the household (n=1,251)



The most common behaviours when planning or while food shopping is:

- Check what is in the cupboards, fridge or freezer before doing a food shop (73% most times or always), and
- Using a shopping list (68% most times or always).

The least common behaviour is to plan a weekly menu of meals (53% never or hardly ever).

High food wasters are significantly less likely to do the following while shopping when compared to low food wasters:

- Check the cupboards, fridge or freezer before a food shop,
- Use a shopping list, and
- Stick to a menu plan and shopping lists.

Table 10: Food shopping habits and behaviours by household food wastage groups

Base: Respondents who are responsible for the food purchasing for the household (n=1,251)

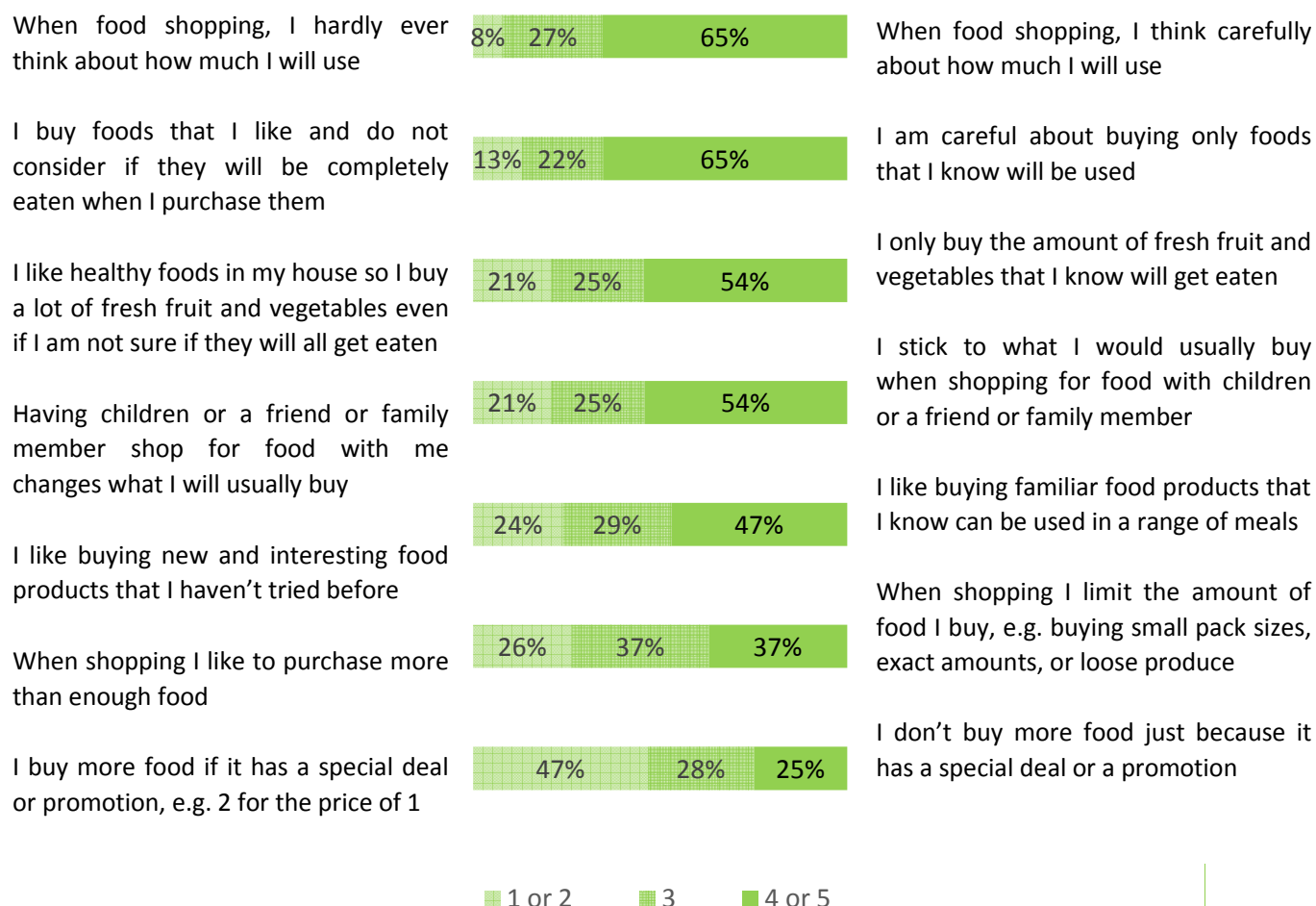
Q15: When you are shopping for food or before you go shopping for food how regularly do you do the following? On a scale of 1 to 5, where 1 is Never, and 5 is Always.

	Total n=1,251	Household food wastage groups		
		High n=338	Medium n=465	Low n=448
Check what is in the cupboards, fridge or freezer before doing a food shop	3.94	3.84	3.92	4.03
Use a shopping list when buying food	3.84	3.67	3.86	3.94
Shop to a set budget	3.14	3.12	3.04	3.26
Stick to menu plans and shopping lists while shopping	2.99	2.86	2.98	3.10
Write a shopping list based on a menu plan	2.73	2.73	2.75	2.72
Plan a weekly menu of meals	2.44	2.43	2.51	2.38

Chart 14: Food shopping habits and behaviours

Base: Respondents who are responsible for food purchasing for the household (n=1,251)

Q16: Thinking about shopping for food, please indicate where you feel that you fit between the two statements. Using the slider tool on a scale of 1 to 5, where a lower score means you associate yourself more with the statement on the left, and a higher score means you associate yourself more with the statement on the right.



There is a significant relationship between all of the above food shopping behaviours and the food waste generated by households. High food wasters are more likely to demonstrate food shopping behaviours expected to cause food waste (those on the left hand side above) than medium or low food wastage groups.

The food shopping behaviours with the most significant relationship on the food waste generated by households included:

- Buying foods that are liked without considering if they would be completely eaten, and
- Buying a lot of fresh fruit and vegetables without considering if they would all get eaten.

Table 11: Food shopping habits and behaviours by household food wastage groups

Base: Respondents who are responsible for the food purchasing for the household (n=1,251)

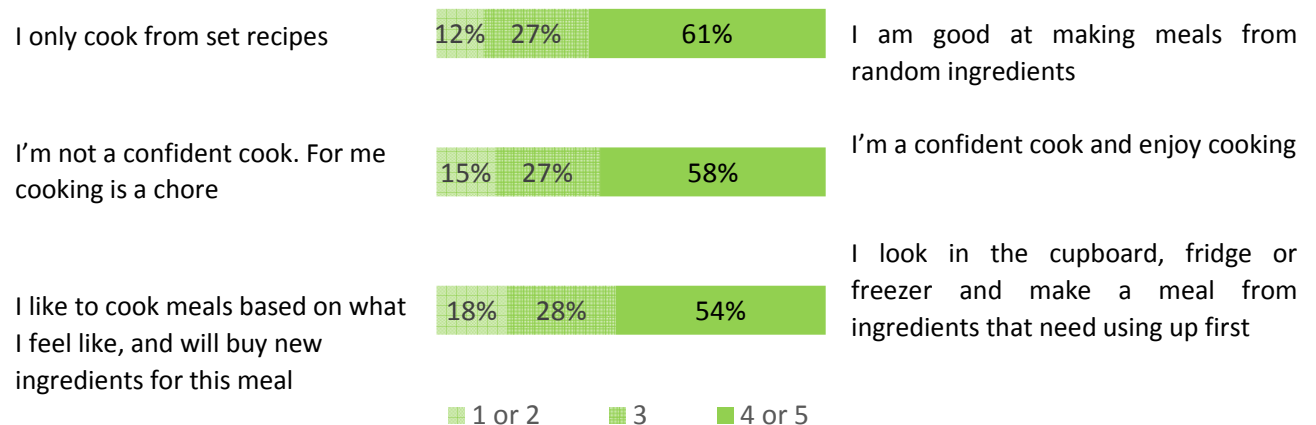
Q16: Thinking about shopping for food, please indicate where you feel that you fit between the two statements. Using the slider tool on a scale of 1 to 5, where a lower score means you associate yourself more with the statement on the left, and a higher score means you associate yourself more with the statement on the right.

	Total n=1,251	Household food wastage groups			
		High n=338	Medium n=465	Low n=448	
	Mean score (on a scale of 1 to 5)				
When food shopping, I hardly ever think about how much I will use	3.83	3.55	3.78	4.10	When food shopping, I think carefully about how much I will use
I buy foods that I like and do not consider if they will be completely eaten when I purchase them	3.80	3.36	3.74	4.19	I am careful about buying only foods that I know will be used
I like healthy foods in my house so I buy a lot of fresh fruit and vegetables even if I am not sure if they will all get eaten	3.55	3.14	3.42	4.00	I only buy the amount of fresh fruit and vegetables that I know will get eaten
Having children or a friend or family member shop for food with me changes what I will usually buy	3.53	3.13	3.51	3.85	I stick to what I would usually buy when shopping for food with children or a friend or family member
I like buying new and interesting food products that I haven't tried before	3.37	3.20	3.27	3.60	I like buying familiar food products that I know can be used in a range of meals
When shopping I like to purchase more than enough food, e.g. buying large pack sizes and pre-packaged produce	3.16	2.92	3.18	3.33	When shopping I limit the amount of food I buy, e.g. buying small pack sizes, exact amounts, or loose produce
I buy more food if it has a special deal or promotion, e.g. 2 for the price of 1, spend more to receive a fuel discount/novelty item	2.72	2.43	2.65	3.01	I don't buy more food just because it has a special deal or a promotion

Chart 15: Cooking and preparing food habits and behaviours

Base: Respondents who are responsible for the cooking and preparing of food for the household (n=1,172)

Q17: Thinking about cooking and preparing food, please indicate where you feel that you fit between the two statements. Using the slider tool on a scale of 1 to 5, where a lower score means you associate yourself more with the statement on the left, and a higher score means you associate yourself more with the statement on the right.



The above behaviours when cooking and preparing food have a significant relationship with the amount of food waste generated. High food wasters are more likely to cook meals based on what they feel like and buy new ingredients for this meal, whereas low food wasters are more likely to cook meals based on ingredients they have at home that need using up first. High food wasters are also more likely to cook from set recipes than the total sample and are not as confident with cooking.

Table 12: Cooking and preparing food habits and behaviours by household food wastage groups

Base: Respondents who are responsible for the cooking and preparing of food for the household (n=1,172)

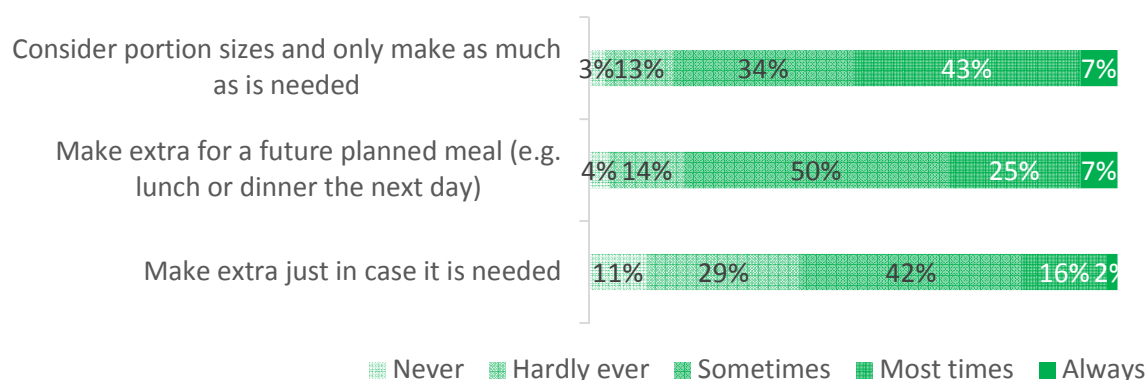
Q17: Thinking about cooking and preparing food, please indicate where you feel that you fit between the two statements presented. Using the slider tool on a scale of 1 to 5, where a lower score means you associate yourself more with the statement on the left, and a higher score means you associate yourself more with the statement on the right.

Score of 1	Total n=1,172	Household food wastage groups			Score of 5
		High n=321	Medium n=436	Low n=414	
	Mean score (on a scale of 1 to 5)				
I only cook from set recipes	3.78	3.59	3.73	3.97	I am good at making meals from random ingredients
I’m not a confident cook. For me cooking is a chore	3.69	3.49	3.71	3.83	I’m a confident cook and enjoy cooking
I like to cook meals based on what I feel like, and will buy new ingredients for this meal	3.53	3.24	3.43	3.85	I look in the cupboard, fridge or freezer and make a meal from ingredients that need using up first

Chart 16: Cooking and preparing habits and behaviours

Base: Respondents who are responsible for the cooking and preparing of food for the household (n=1,172)

Q18: When you are cooking or preparing main meals in your household, how often do you...



Over one half (50%) of respondents consider portion sizes and only make as much as needed most of the time or always.

High food wasters are more likely to make extra just in case it is needed and less likely to consider portion sizes and only make as much as needed, than the total sample.

Table 13: Cooking and preparing food habits and behaviours by household food wastage groups

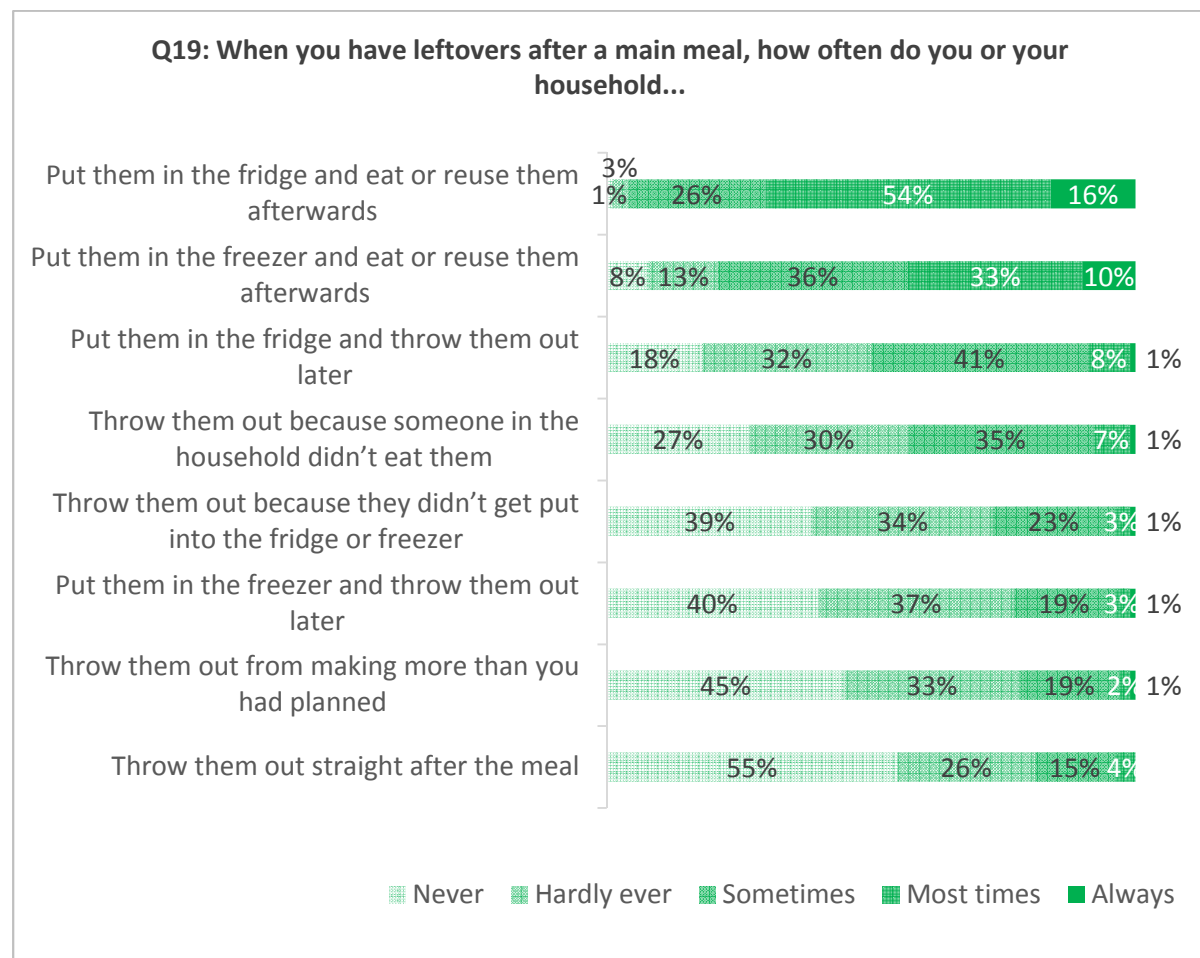
Base: Respondents who are responsible for the cooking and preparing of food for the household (n=1,172)

Q18: When you are cooking or preparing main meals in the household, how often do you... On a scale of 1 to 5, where 1 is Never, and 5 is Always.

	Total n=1,172	Household food wastage groups		
		High n=321	Medium n=436	Low n=414
Consider portion sizes and only make as much as is needed	3.39	3.24	3.34	3.57
Make extra just in case it is needed	2.69	2.84	2.75	2.52
Make extra for a future planned meal (e.g. lunch or dinner the next day)	3.17	3.03	3.19	3.27

Chart 17: Behaviours around leftovers

Base: Respondents who are responsible for the cooking and preparing of food for the household (n=1,172)



When there were leftovers after a main meal, these are most commonly put in the fridge or freezer and reused at a later date. Respondents are least likely to throw leftovers out straight after a meal (81% never or hardly ever) and are most likely to throw out leftovers that are put in the fridge (50% sometimes, most times or always).

The behaviours that are more likely to be demonstrated by high food wasters include:

- Putting leftovers in the fridge and throwing them out later,
- Throwing them out due to someone in the household not eating them, or
- Throwing them out from making more than planned.

Throwing out leftovers from making more than planned could be an issue prevented by correcting portion sizes when cooking and preparing food.

Table 14: Behaviours around leftovers by household food wastage groups

Base: Respondents who are responsible for the cooking and preparing of food for the household (n=1,172)

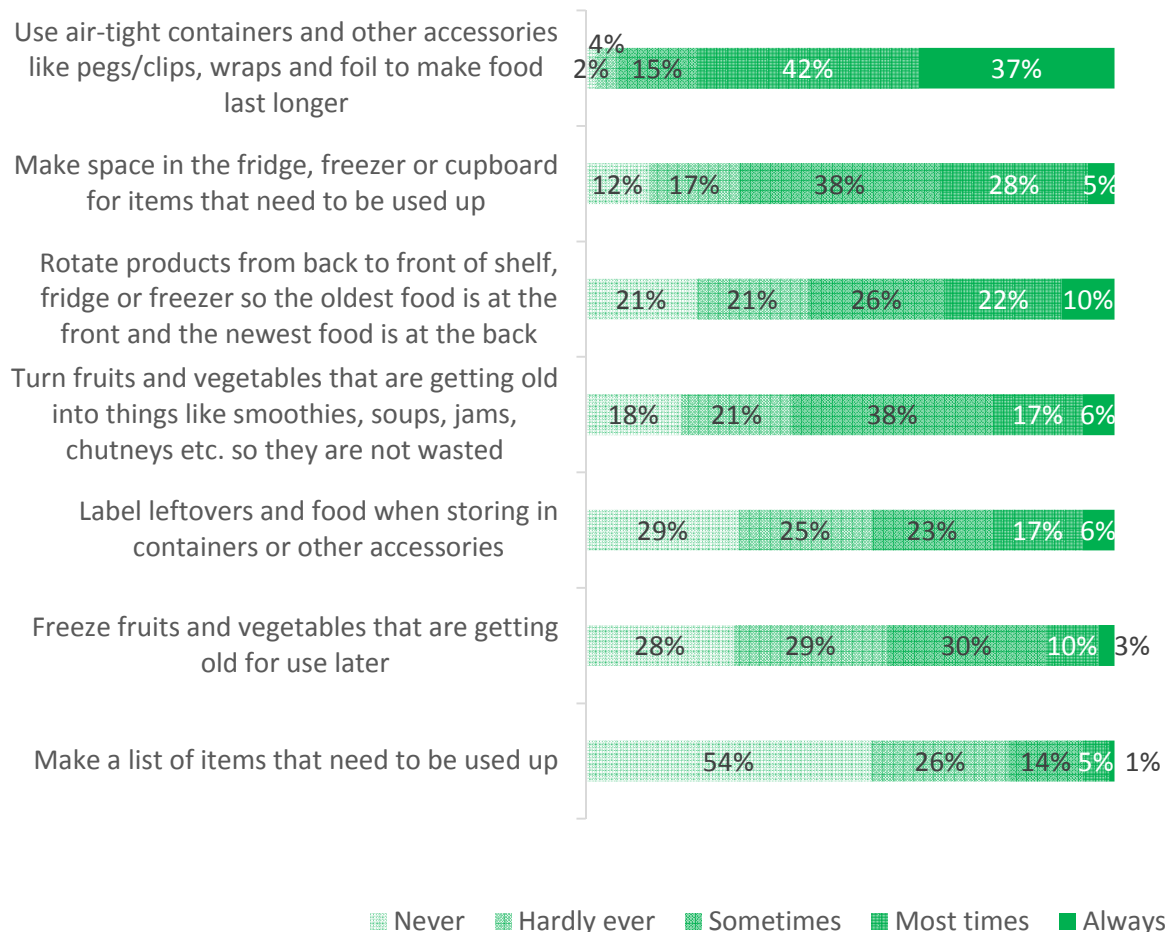
Q19: When you have leftovers after a main meal, how often do you or your household... On a scale of 1 to 5, where 1 is Never, and 5 is Always.

	Total n=1,172	Household food wastage groups		
		High n=321	Medium n=436	Low n=414
Put them in the fridge and eat or reuse them afterwards	3.82	3.57	3.84	4.00
Put them in the freezer and eat or reuse them afterwards	3.24	2.87	3.25	3.52
Put them in the fridge and throw them out later	2.41	2.86	2.49	1.98
Throw them out because someone in the household didn't eat them	2.23	2.70	2.33	1.77
Throw them out because they didn't get put into the fridge or freezer	1.93	2.28	1.97	1.63
Put them in the freezer and throw them out later	1.87	2.10	1.96	1.58
Throw them out from making more than you had planned	1.79	2.18	1.84	1.77
Throw them out straight after the meal	1.68	2.05	1.67	1.41

Chart 18: Storing food

Base: Respondents who are responsible for the storing of food in the household (n=1,154)

Q20: When you are storing food, how often do you...



Using storage accessories such as air-tight containers, pegs, clips, wraps and foils is the most common food storage behaviour found amongst respondents (79% do this most times or always). Respondents are least likely to make a list of items that need to be used up (80% never or hardly ever).

More respondents never or hardly ever:

- Freeze fruits and vegetables that are getting old,
- Label leftovers and food when storing them,
- Turn fruits and vegetables into smoothies, soups, jams, chutneys, and
- Rotate foods from the back to front of the shelf, fridge or freezer.

High food wasters are less likely than the total sample to demonstrate good food waste prevention storage behaviours. The food storage behaviours with the most significant relationship to food waste generated, include:

- Rotating products from the back to the front of the shelf, fridge or freezer to ensure the oldest food is at the front and the newest food is at the back,
- Turning fruits and vegetables that are getting old into things like smoothies, soups or preserves, or
- Freezing fruits and vegetables that are getting old for future use.

Table 15: Storing food by household food wastage groups

Base: Respondents who are responsible for the storing of food in the household (n=1,154)

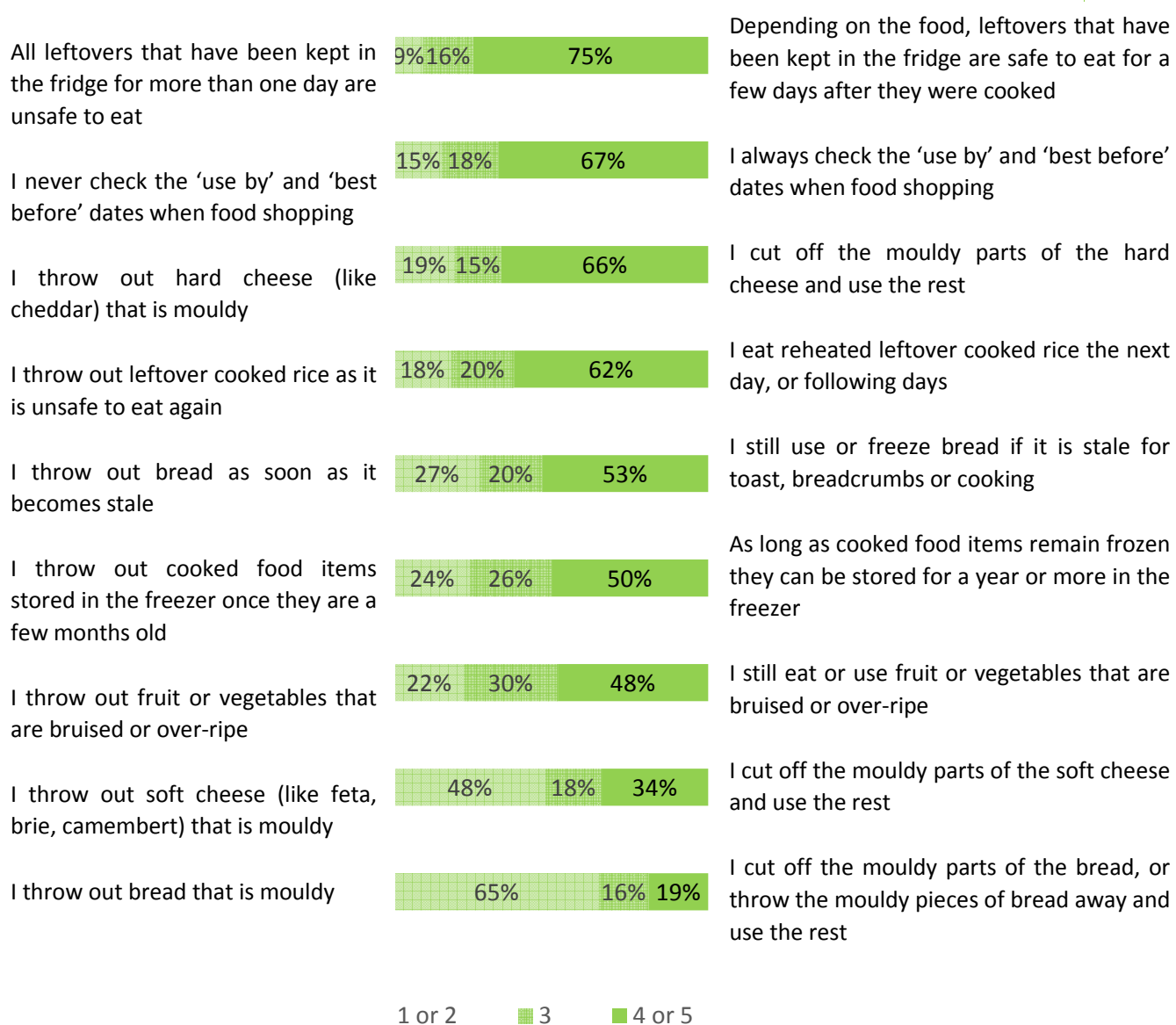
Q20: When you are storing food, how often do you... On a scale of 1 to 5, where 1 is Never, and 5 is Always.

	Total n=1,154	Household food wastage groups		
		High n=317	Medium n=419	Low n=417
Use air-tight containers and other accessories like pegs/clips, wraps and foil to make food last longer	4.10	3.86	4.09	4.28
Make space in the fridge, freezer or cupboard for items that need to be used up	2.97	2.79	2.91	3.18
Rotate products from back to front of shelf, fridge or freezer so the oldest food is at the front and the newest food is at the back	2.77	2.38	2.70	3.16
Turn fruits and vegetables that are getting old into things like smoothies, soups, jams, chutneys etc. so they are not wasted	2.73	2.45	2.62	3.05
Label leftovers and food when storing in containers or other accessories	2.46	2.28	2.38	2.68
Freeze fruits and vegetables that are getting old for use later	2.32	2.02	2.32	2.54
Make a list of items that need to be used up	1.72	1.61	1.64	1.87

Chart 19: Expired or perished foods

Base: All respondents (n=1,300)

Q21: Thinking about your behaviour with food in your household, please indicate where you feel that you fit between the two presented statements. Using the slider tool on a scale of 1 to 5, where a lower score means you associate yourself more with the statement on the left, and a higher score means you associate yourself more with the statement on the right.



Higher food wasters are significantly more likely than the total sample to throw out stale, perished, older, or mouldy foods that are otherwise still edible. The behaviours with the strongest relationship to food waste generated include:

- Throwing out bread as soon as it becomes stale,
- Throwing out fruit or vegetables that are bruised or over-ripe, and
- The perception that all leftovers kept in the fridge for more than one day are unsafe to eat.

Table 16: Expired or perished foods by household food wastage groups

Base: All respondents (n=1,300)

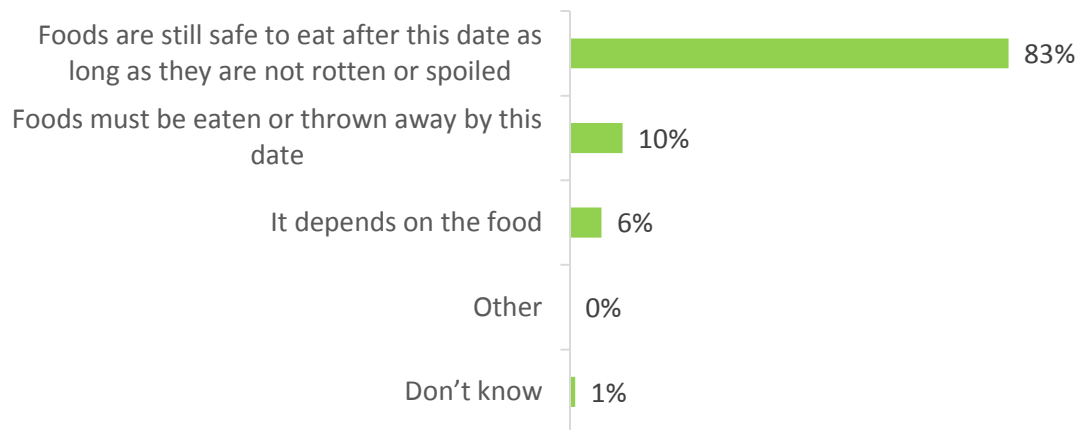
Q21: Thinking about your behaviour with food in your household, please indicate where you feel that you fit between the two presented statements. Using the slider tool on a scale of 1 to 5, where a lower score means you associate yourself more with the statement on the left, and a higher score means you associate yourself more with the statement on the right.

	Total n=1,300	Household food wastage groups			
		High n=355	Medium n=492	Low n=452	
	Mean score (on a scale of 1 to 5)				
All leftovers that have been kept in the fridge for more than one day are unsafe to eat	4.10	3.79	4.09	4.35	Depending on the food, leftovers that have been kept in the fridge are safe to eat for a few days after they were cooked
I never check the 'use by' and 'best before' dates when food shopping	3.81	3.52	3.83	4.02	I always check the 'use by' and 'best before' dates when food shopping
I throw out hard cheese (like cheddar) that is mouldy	3.80	3.46	3.73	4.14	I cut off the mouldy parts of the hard cheese and use the rest
I throw out leftover cooked rice as it is unsafe to eat again	3.75	3.40	3.72	4.06	I eat reheated leftover cooked rice the next day, or following days
I throw out bread as soon as it becomes stale	3.46	3.08	3.32	3.91	I still use or freeze bread if it is stale for toast, breadcrumbs or cooking
I throw out cooked food items stored in the freezer once they are a few months old	3.38	3.08	3.28	3.72	As long as cooked food items remain frozen they can be stored for a year or more in the freezer
I throw out fruit or vegetables that are bruised or over-ripe	3.36	2.99	3.31	3.70	I still eat or use fruit or vegetables that are bruised or over-ripe
I throw out soft cheese (like feta, brie, camembert) that is mouldy	2.70	2.41	2.58	3.07	I cut off the mouldy parts of the soft cheese and use the rest
I throw out bread that is mouldy	2.17	1.96	2.03	2.48	I cut off the mouldy parts of the bread, or throw the mouldy pieces of bread away and use the rest

Chart 20.1: Understanding of best before dates

Base: All respondents (n=1,300)

Q22: What do you understand the term 'best before date' on a food product to mean?



Most respondents had the correct understanding of what the best before means (83%). Low food wasters are slightly more likely to understand the meaning of a best before date (89%) than medium (80%) and high food wasters (81%).

Chart 20.2: Understanding of best before dates by household food wastage groups

Base: All respondents (n=1,300)

Q22: What do you understand the term 'best before date' on a food product to mean?

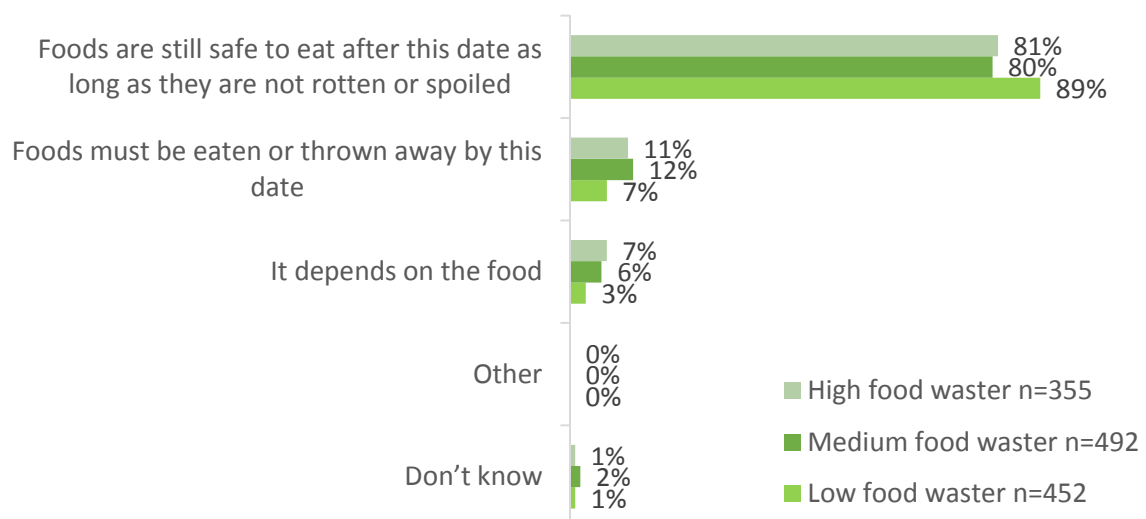
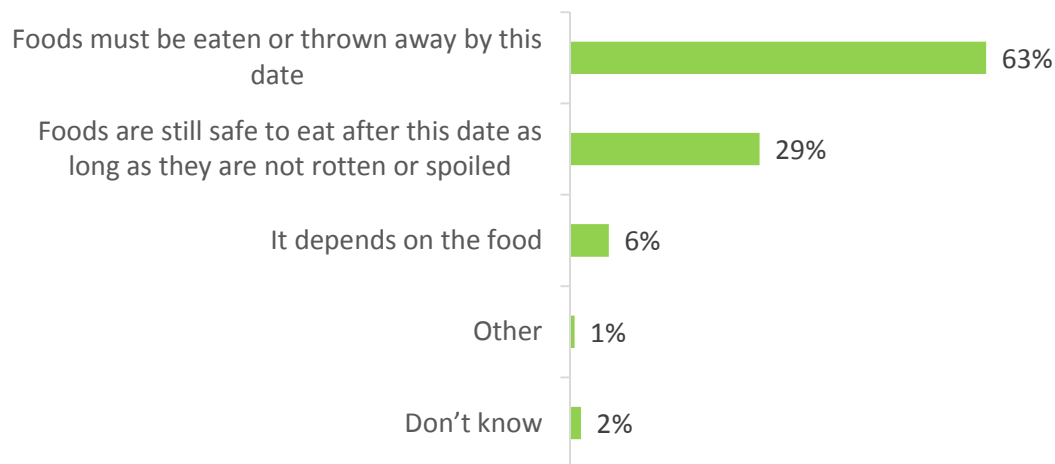


Chart 21.1: Understanding of use by dates

Base: All respondents (n=1,300)

Q23: What do you understand the term 'use by date' on a food product to mean?



Almost two thirds (63%) understand the use by date to be that foods must be eaten or thrown away by this date and three in ten respondents (29%) believe that foods are still safe to eat after this date as long as they are not rotten or spoiled. High food wasters are more likely to strictly follow the use by date of throwing away foods once they are past this date (76%) when compared with low food wasters (55%).

Chart 21.2: Understanding of use by dates by household food wastage groups

Base: All respondents (n=1,300)

Q23: What do you understand the term 'use by date' on a food product to mean?

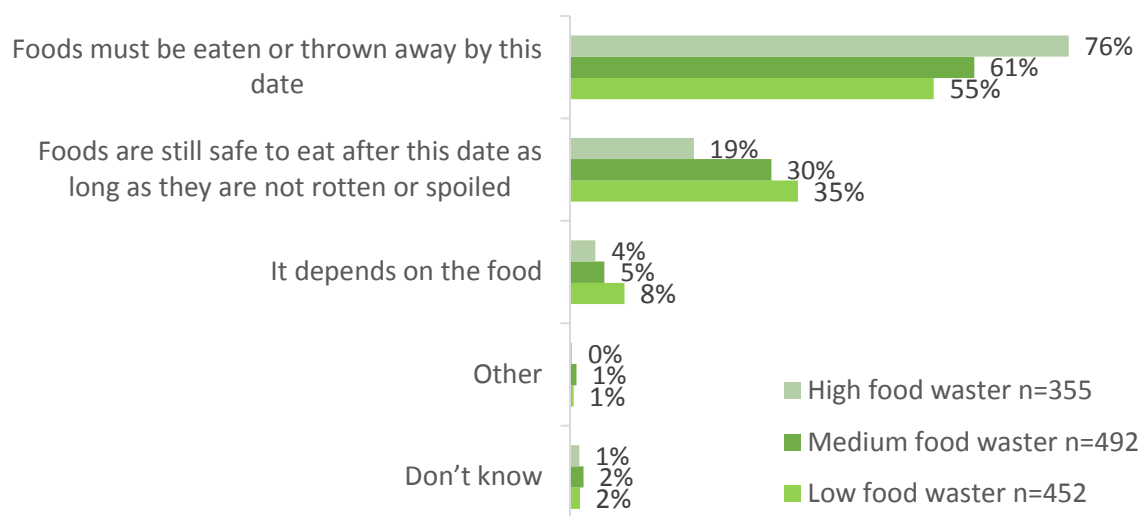
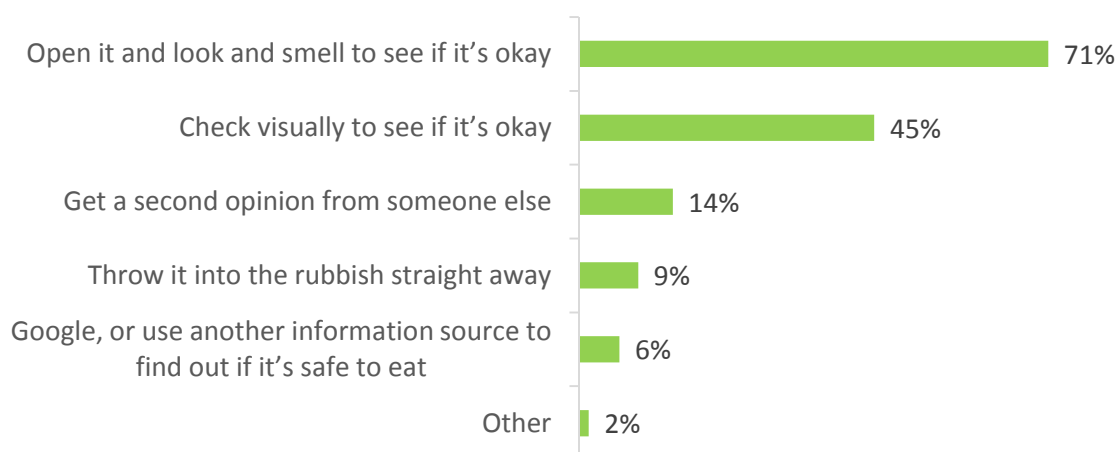


Chart 22: Dealing with expired foods

Base: All respondents (n=1,300)

Q24: If a food product has passed its best before date what do you do?



Respondents generally trust their sensory perceptions when judging whether or not to throw away a food product that has passed its best before date (71%). High food wasters are slightly more likely than low food wasters to throw a food product that had passed its best before date into the rubbish straight away (11% compared to 6%).

Table 17: Dealing with expired foods by household food wastage groups

Base: All respondents (n=1,300)

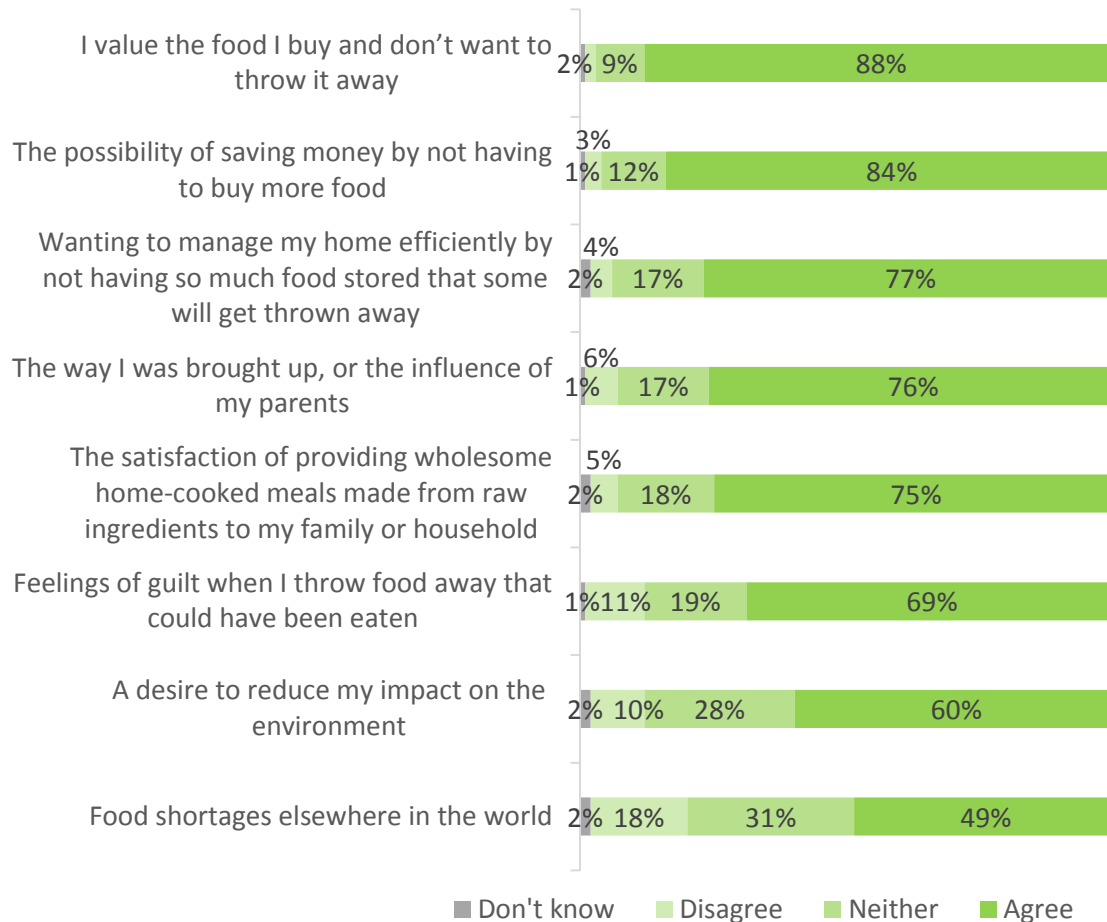
Q24: If a food product has passed its best before date what do you do?

	Total n=1,300	Household food wastage groups		
		High n=355	Medium n=492	Low n=452
Open it and look and smell to see if it's okay	71%	71%	69%	74%
Check visually to see if it's okay	45%	44%	45%	45%
Get a second opinion from someone else	14%	17%	15%	11%
Throw it into the rubbish straight away	9%	11%	10%	6%
Google, or use another information source to find out if it's safe to eat	6%	5%	7%	6%
Other	2%	2%	1%	2%

Chart 23: Motivations to minimise household food waste

Base: All respondents (n=1,300)

Q25: To what extent do the following motivate you to try to minimise the amount of food that your household throws away?



The most common motivators to minimise the amount of food wasted includes the value placed upon food (88%), the possibility of saving money (84%), and wanting to manage their home efficiently so food waste does not occur (77%).

High food wasters are less likely to be motivated by the above factors to minimise their food waste when compared with medium and low food wasters. The motivator with the most significant relationship to the food waste generated is the value placed upon food. Higher food wasters are less likely to state that they value their food and therefore don't want to throw it away when compared with medium and low food wasters, although this is still a key motivator for the these households.

Table 18: Motivations to minimise household food waste by household food wastage groups

Base: All respondents (n=1,300)

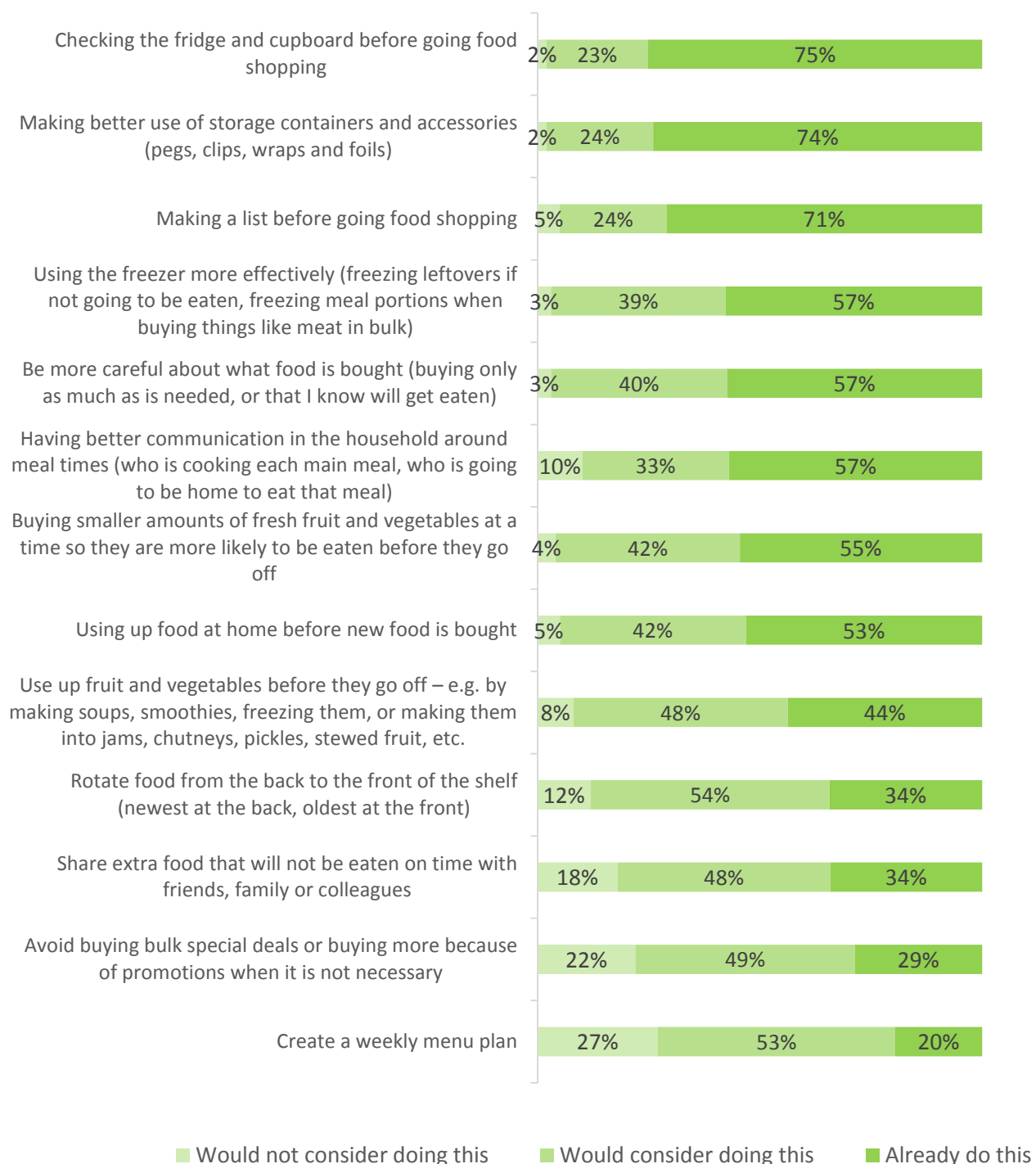
Q25: To what extent do the following motivate you to try to minimise the amount of food that your household throws away? This could be into the rubbish bin, waste disposal units, or compost.

	Total n=1,300	Household food wastage groups		
		High n=355	Medium n=492	Low n=452
I value the food I buy and don't want to throw it away	4.29	4.03	4.29	4.50
The possibility of saving money by not having to buy more food	4.25	4.17	4.22	4.35
Wanting to manage my home efficiently by not having so much food stored that some will get thrown away	4.03	3.84	3.98	4.24
The way I was brought up , or the influence of my parents	4.07	3.83	4.11	4.21
The satisfaction of providing wholesome home-cooked meals made from raw ingredients to my family or household	4.07	3.94	4.09	4.15
Feelings of guilt when I throw food away that could have been eaten	3.85	3.85	3.79	3.91
A desire to reduce my impact on the environment	3.70	3.62	3.75	3.73
Food shortages elsewhere in the world	3.44	3.36	3.46	3.47

Chart 24: Willingness to do activities that minimise household food waste

Base: Respondents who indicated that their household wastes food at Q8 (n=1,170)

Q26: After understanding your habits and behaviours towards food and food waste throughout this survey, can you now please indicate which of the following activities you would be willing to do to minimise food waste in your household?



Over seven in ten respondents are already:

- Checking the fridge and cupboard before going food shopping (75%),
- Making better use of storage containers and accessories (75%), and
- Making a list before going food shopping (71%).

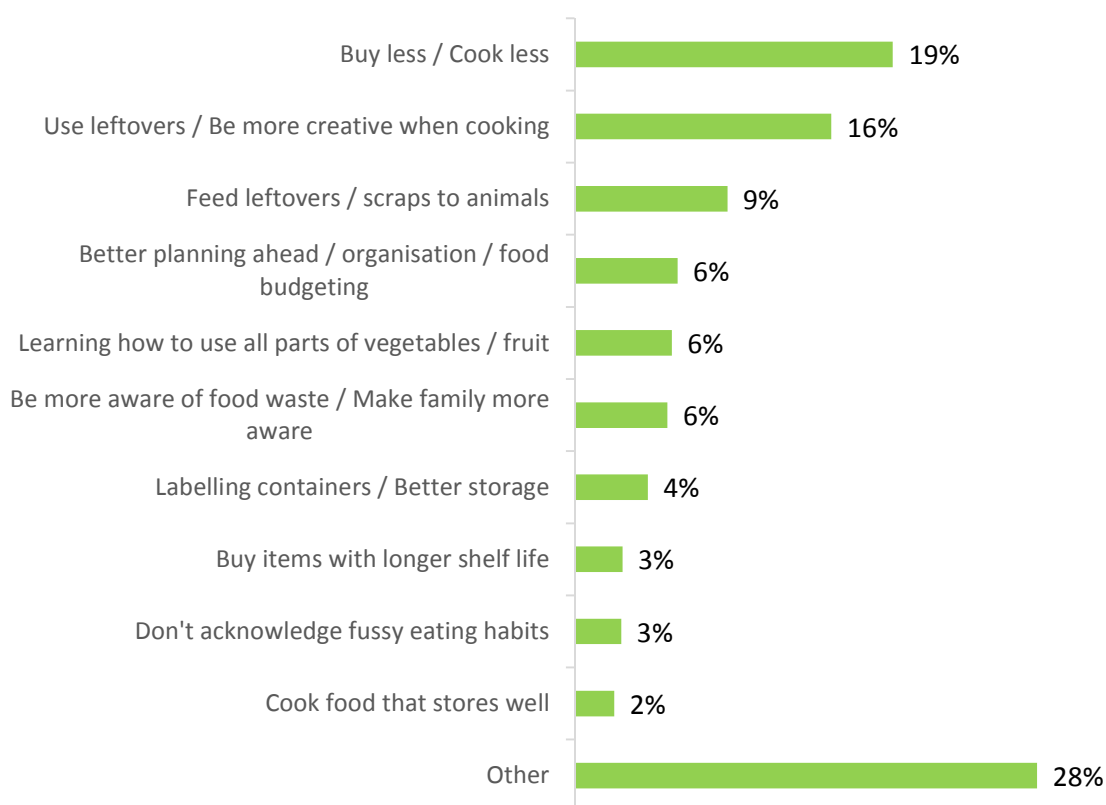
Almost all the remainder of respondents would consider doing these activities to reduce food waste. The activities that respondents are most likely to consider doing are:

- Rotate food from the back to the front of the shelf (newest at the back, oldest at the front) (54%),
- Create a weekly menu plan (53%),
- Avoid buying bulk special deals or buying more because of promotions when it is not necessary (49%)
- Share extra food that will not be eaten on time with friends, family or colleagues (48%), and
- Use up fruit and vegetables before they go off – e.g. by making soups, smoothies, freezing them, or making them into jams, chutneys, pickles, stewed fruit, etc. (48%)

Verbatim comments: Other activities that households are willing to do to minimise their household food waste

Base: Respondents who indicated that they have other activities that they would be willing to do to minimise food waste in their household Q26 (n=74)

Q26: Are there any other activities you would be willing to do to minimise food waste in your household? (ANSWERED YES, activities listed below).

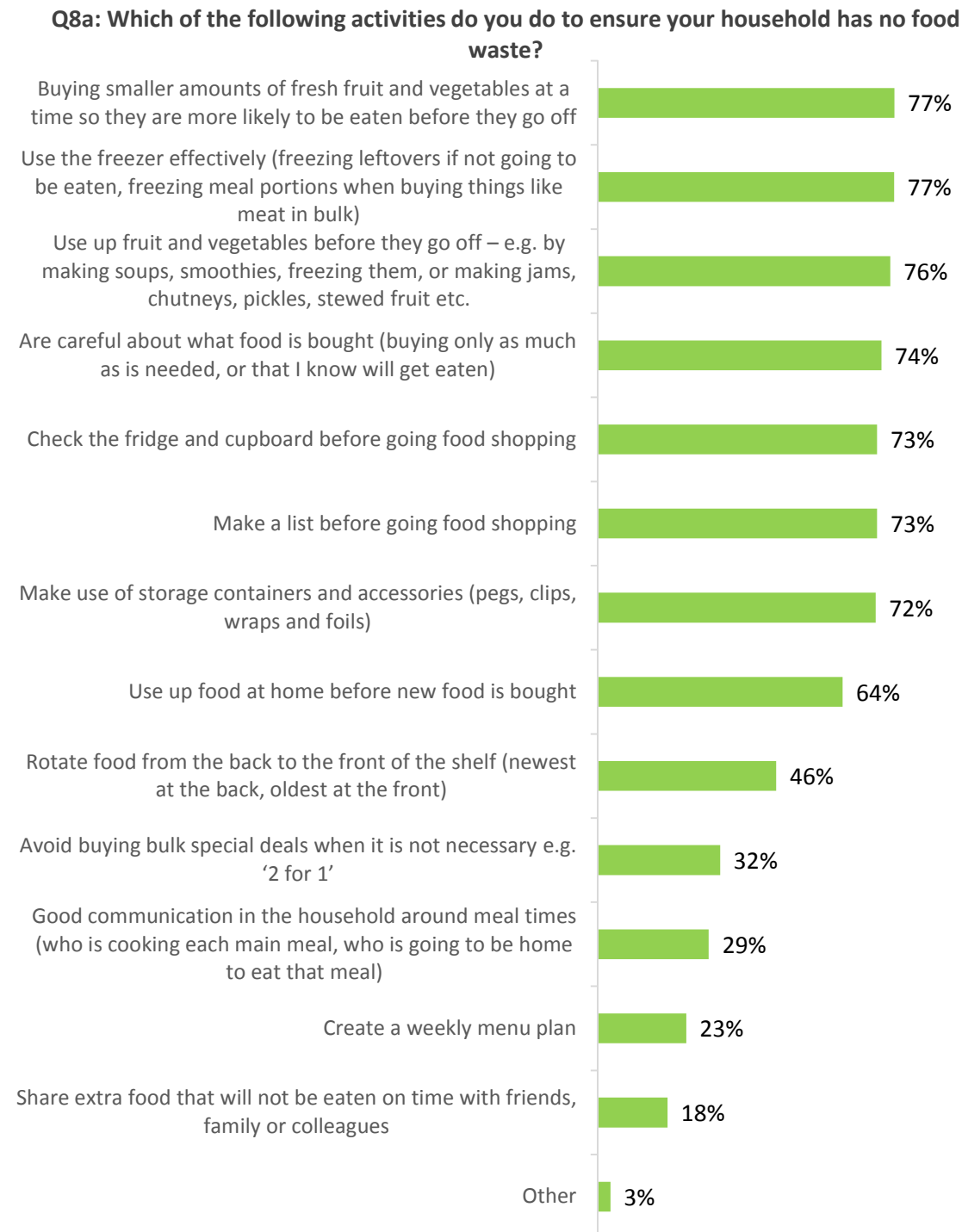


Q26: Are there any other activities you would be willing to do to minimise food waste in your household? ANSWERED 'OTHER'. Responses below.

- *Anything that will help reduce the amount spent in food.*
- *Anything that works and does not take up a lot of time as I have a big family, 5 children and work full time....Therefore I do not have any time to waste.*
- *Buy a new fridge.*
- *Buy own food and cook own meals.*
- *Donate food to charity - aside from canned food we have fruit trees and we can't always use all the fruit they produce.*
- *Don't feed the kids then food will never get wasted :)*
- *Eat more.*
- *Eat seasonal.*
- *Find some way of composting or something with cat food leftovers - it's one of my biggest wastes.*
- *Happy to consider other ideas to reduce waste and money.*
- *Having a council funded compost system.*
- *I am aware that about 20,000 people probably die each day due to malnutrition. I am against "Organic" products as they are less productive per unit area of land and we should be producing as much food as possible because of the above. I believe that nobody has shown that Organic products are superior to conventional farming and are therefore just a fad for the wealthy.*
- *I don't like wasting things especially food.*
- *I would be open to other suggestions.*
- *I would consider drying food but not sure if the amount of electricity it takes is a waste of my power.*
- *Meet and discuss with like-minded people.*
- *Open to new ideas.*
- *Place in containers for a council bin.*
- *Tell my flat mates to ask the flat if anyone wants their food before they throw it away!*
- *Visual guide of the meal planner for others in the house to see.*

Chart 25: Activities of households with no food waste

Base: Respondents who indicated they generally have no food waste at Q8 (n=129)



There are 10% of respondents who state that they generally throw away no food. These households are mindful of food waste prevention when shopping for food, for instance they:

- Buy smaller amounts of fresh fruit and vegetables at a time so they are more likely to be eaten before they go off (77%),

- Are careful about what food is bought, buying only as much as they know will get eaten (74%),
- Check the fridge and cupboards before going food shopping (73%), and
- Make a list before going food shopping (73%).

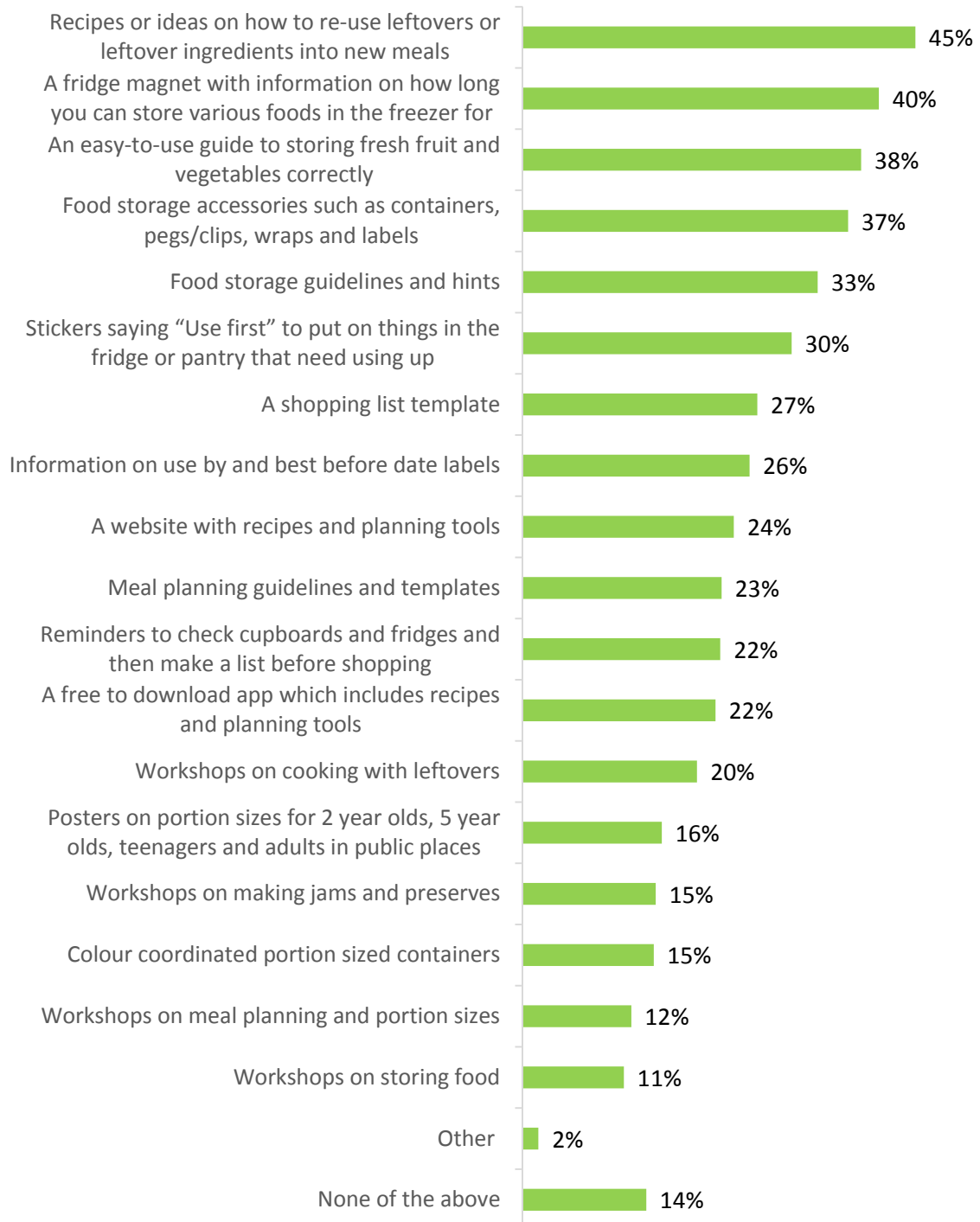
These respondents also demonstrate good food storage practices such as:

- Using the freezer effectively (77%),
- Using storage containers and accessories (72%), and
- Using up fruit and vegetables before they go off by making soups, smoothies, jams, chutney or freezing them (76%).

Chart 26: Tools to aid in minimising household food waste

Base: All respondents (n=1,300)

Q27: Which of these tools do you think would help you or your household to minimise food waste?



Tools that would help New Zealand households minimise food waste include recipes or ideas on how to re-use leftovers or leftover ingredients into new meals (45%), and guidance on how to best store foods, such as fridge magnets with information on how long various foods can be stored in the freezer for (40%), and an easy-to-use guide to storing fresh fruit and vegetables correctly (38%).

Q26: Are there any other activities you would be willing to do to minimise food waste in your household? ANSWERED 'OTHER'. Responses below.

- *Anything that will help reduce the amount spent on food.*
- *Anything that works and does not take up a lot of time as I have a big family, 5 children and work full time....Therefore I do not have any time to waste.*
- *Buy a new fridge.*
- *Buy own food and cook own meals.*
- *Donate food to charity - aside from canned food we have fruit trees and we can't always use all the fruit they produce.*
- *Eat more.*
- *Eat seasonally.*
- *Find some way of composting or something with cat food leftovers - it's one of my biggest wastes.*
- *Happy to consider other ideas to reduce waste and money.*
- *Having a council funded compost system.*
- *I am aware that about 20,000 people probably die each day due to malnutrition. I am against "organic" products as they are less productive per unit area of land and we should be producing as much food as possible because of the above. I believe that nobody has shown that organic products are superior to conventional farming and are therefore just a fad for the wealthy.*
- *I don't like wasting things especially food.*
- *I would be open to other suggestions.*
- *I would consider drying food but not sure if the amount of electricity it takes is a waste of my power.*
- *Meet and discuss with likeminded people.*
- *Open to new ideas.*
- *Place in containers for a council bin.*
- *Tell my flatmates to ask the flat if anyone wants their food before they throw it away.*
- *Visual guide of the meal planner for others in the house to see.*

Appendix: Questionnaire

A. Do you or any members of your immediate family work in the following areas?

Public Relations or Promotions	SCREEN OUT
Mass Media (Newspapers, TV, Radio etc)	SCREEN OUT
Marketing including Market Research	SCREEN OUT
Collection or processing of waste materials	SCREEN OUT
Management role in Food Retail Trade e.g. supermarket	SCREEN OUT
Local government (including council staff and elected representatives)	SCREEN OUT
Management role in Food Service Trade e.g. Chef	SCREEN OUT
None of these	

CONTINUE IF 'NONE OF THESE'

B. Please select your gender:

Male
Female
Other

C. Which of the following age groups are you in:

15 years or under	SCREEN OUT
16 – 19 years	
20 – 24 years	
25 – 29 years	
30 – 34 years	
35 – 39 years	
40 – 44 years	
45 – 49 years	
50 – 54 years	
55 – 59 years	
60 – 64 years	
65 – 69 years	
70 years or older	

D. Which region do you mainly live in?

Northland
Auckland
Waikato
Bay of Plenty
Gisborne
Hawke's Bay
Taranaki
Manawatu / Whanganui
Wellington / Wairarapa
Nelson / Marlborough / Tasman
West Coast
Canterbury
Otago
Southland

- E. Which part of the region do you mainly live in?
 DISPLAY ONLY THOSE OF THE REGION AT QD

CITY COUNCILS

Hamilton City Council	Upper Hutt City Council
Hutt City Council	Wellington City Council
Napier City Council	Christchurch City Council
Palmerston North City Council	Dunedin City Council
Porirua City Council	Invercargill City Council
Tauranga City Council	Nelson City Council

DISTRICT COUNCILS

Ashburton District Council	Queenstown-Lakes District Council
Buller District Council	Rangitikei District Council
Carterton District Council	Rotorua District Council
Central Hawke's Bay District Council	Ruapehu District Council
Central Otago District Council	Selwyn District Council
Chatham Islands Council	South Taranaki District Council
Clutha District Council	South Waikato District Council
Far North District Council	South Wairarapa District Council
Gisborne District Council	Southland District Council
Gore District Council	Stratford District Council
Grey District Council	Tararua District Council
Hastings District Council	Tasman District Council
Hauraki District Council	Taupo District Council
Horowhenua District Council	Thames-Coromandel District Council
Hurunui District Council	Timaru District Council
Kaikoura District Council	Waikato District Council
Kaipara District Council	Waimakariri District Council
Kapiti Coast District Council	Waimate District Council
Kawerau District Council	Waipa District Council
Mackenzie District Council	Wairoa District Council
Manawatu District Council	Waitaki District Council
Marlborough District Council	Waitomo District Council
Masterton District Council	Wanganui District Council
Matamata-Piako District Council	Western Bay of Plenty District Council
New Plymouth District Council	Westland District Council
Opotiki District Council	Whakatane District Council
Otorohanga District Council	Whangarei District Council

F. Is the place where you mainly live best described as a...

City
Town
Small urban settlement
Rural area
Other (Please specify)

G. Which of the following are you mainly responsible, or jointly responsible for in your household?
ROTATE. MULTICODE.

A	Food purchasing for the household
B	Cooking/food preparation
C	Food storage (i.e. of grocery items and leftovers)
D	Cleaning out or organising the fridge
E	Paying the power, or electricity account
F	Power tool equipment purchases
G	Fixing electrical faults in the house
H	Fixing plumbing problems in the house
I	Cleaning the kitchen, and bathrooms
J	Taking out the rubbish, or recycling

CONTINUE IF YES FOR EITHER A OR B

1. Please indicate the extent to which you agree or disagree with the following statements.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
I am concerned about environmental problems	1	2	3	4	5	6
The members of our household spend a lot of time together	1	2	3	4	5	6
I make a conscious effort to reduce my waste as much as possible in everyday life	1	2	3	4	5	6
Our household is on a very tight budget	1	2	3	4	5	6
It is important to save electricity whenever possible	1	2	3	4	5	6
I feel responsible for my impact on the environment	1	2	3	4	5	6
New Zealand households don't waste much food	1	2	3	4	5	6
Busy lifestyles make it hard to avoid wasting food	1	2	3	4	5	6
Wasting food feels wrong to me	1	2	3	4	5	6
Food waste reduction is an important issue	1	2	3	4	5	6
Food that could have been eaten by people is not wasted if it is fed to animals or composted	1	2	3	4	5	6

Please answer the following questions about the household where you have mainly lived over the past 6 months

2. How do you usually get rid of food waste in your household? Please select as many as apply.
By food waste we mean all edible and inedible food that is thrown out in your household, such as fruit and vegetable scraps, meat bones, partially used foods, foods that have passed their use by or best before date, or food thrown away for other reasons.

MULTICODE. ROTATE.

Put in the rubbish for collection
Compost
Bokashi (Composting system)
Bury in the garden
Kitchen waste disposal unit or insinkerator
Worm farm
Give to chickens, pigs or other animals including dogs and cats
Other (Please specify)
Don't know

ASK IF MORE THAN ONE SELECTED AT Q2 ABOVE. PIPE ANSWERS @Q2.

3. And which of these do you use to get rid of **most** of your food waste? SINGLE CODE. ROTATE.

Put in the rubbish for collection
Compost
Bokashi (Composting system)
Bury in the garden
Kitchen waste disposal unit or insinkerator
Worm farm
Give to chickens, pigs or other animals including dogs and cats
Other (Please specify)
Don't know

4. What are the most commonly thrown out or wasted foods in your household? Please be as specific as possible.

For example, food and drink that was edible at some point before being thrown away

--

Please give your best estimate to the following questions.

Based on a normal week within your household...

5. On average, how much money do you or your household spend on food to be eaten at home per week? If you don't shop weekly, please estimate what the amount of money from your food shop (if this is fortnightly, monthly, etc.) would be for one week.

SLIDER TOOL

6. What percentage of this money spent on food does your household throw away that could have been eaten per week? This also includes any food that was fed to animals or composted. **SLIDER TOOL**

For example, food and drink that was edible at some point before being thrown away

7. Using a 2L ice-cream container as a guide, how much food does your household throw away that could have been eaten per week? This also includes any food that was fed to animals or composted. **INCLUDE IMAGE OF 2L ICECREAM CONTAINER**

None at all	SKIP Q8, ask Q8a and Q9, then SKIP TO Q12
Less than half of one 2L container	
One half of a 2L container to less than one 2L container	
One 2L container	
Two 2L containers	
Three 2L containers	
Four to five 2L containers	
Six to seven 2L containers	
Eight or more 2L containers	

ASK ONLY OF THOSE WHO WASTE FOOD @Q7

8. In general, how much uneaten food would you say that your household usually throws away that could have been eaten? This also includes any food that was fed to animals or composted.
For example, food and drink that was edible at some point before being thrown away

A great deal
Quite a lot
A moderate amount
Little
Very little

ASK IF CODE NONE AT ALL @Q7.

- 8a. Which of the following activities do you do to ensure your household has no food waste?
 MULTICODE.

Are careful about what food is bought (buying only as much as is needed, or that I know will get eaten)
Avoid buying bulk special deals when it is not necessary e.g. '2 for 1'
Buying smaller amounts of fresh fruit and vegetables at a time so they are more likely to be eaten before they go off
Make a list before going food shopping
Check the fridge and cupboard before going food shopping
Use up food at home before new food is bought
Create a weekly menu plan
Make use of storage containers and accessories (pegs, clips, wraps and foils)
Rotate food from the back to the front of the shelf (newest at the back, oldest at the front)
Use the freezer effectively (freezing leftovers if not going to be eaten, freezing meal portions when buying things like meat in bulk)
Good communication in the household around meal times (who is cooking each main meal, who is going to be home to eat that meal)
Use up fruit and vegetables before they go off – e.g. by making soups, smoothies, freezing them, or making jams, chutneys, pickles, stewed fruit etc.
Share extra food that will not be eaten on time with friends, family or colleagues
Other (Please specify)

ASK ALL

9. Approximately how much would you estimate that the average New Zealand household spends on food that is purchased but never eaten each year?

Less than \$100 (Less than \$2 a week)
\$100 - \$199 (Around \$3 a week)
\$200 - \$299 (Around \$5 a week)
\$300 - \$399 (Around \$7 a week)
\$400 - \$499 (Around \$9 a week)
\$500 - \$599 (Around \$11 a week)
\$600 - \$699 (Around \$12 a week)
\$700 - \$799 (Around \$14 a week)
\$800 - \$899 (Around \$16 a week)
\$900 - \$999 (Around \$18 a week)
\$1000 or more (Around \$20 or more a week)

ASK ONLY OF THOSE WHO WASTE FOOD @Q7

Please think about why food gets wasted in your household...

- 10a. What do you think is the **main** reason that food gets wasted in your household?
ROTATE. SINGLE CODE.

'Leftovers' includes any uneaten food portions, or ingredients remaining from a previous meal that can be eaten at a later date such as home cooked meals, individual cooked ingredients like pasta, or takeaway meals.

1	Too much food is bought
2	Food is not stored as well as it could be
3	Too much food is cooked
4	Food in the fridge or freezer goes off
5	Leftovers are not eaten or re-used
6	Children, fussy eaters or those with specialist dietary requirements within the household cause food waste
7	Other (Please specify)

- 10b. Are there any other reasons that food gets wasted in your household? ROTATE.
MULTICODE.

'Leftovers' includes any uneaten food portions, or ingredients remaining from a previous meal that can be eaten at a later date such as home cooked meals, individual cooked ingredients like pasta, or takeaway meals.

Too much food is bought
Food is not stored as well as it could be
Too much food is cooked
Food in the fridge or freezer goes off
Leftovers are not eaten or re-used

Children, fussy eaters or those with specialist dietary requirements within the household cause food waste
Other (Please specify)
No other reasons

ASK IF CODE 1 AT Q10a

11a. What are the reasons too much food is bought in your household? MULTICODE.

Not checking the cupboard or fridge before food shopping
Not writing a shopping list
Forgetting to take the list when food shopping
Thinking more food is needed than what is actually needed
Tempted by supermarket specials e.g. '2 for 1'
Lack of time to plan ahead e.g. no shopping list, no meal plan
Size of food portions and packages in the shop are larger than what is needed
I/we like to always have fresh ingredients and don't keep older ingredients
I/we would rather have more food or ingredients at home than not enough
I/we like to try new recipes which requires buying new ingredients and food
Food at home goes off before the 'use by' or 'best before' date so have to buy more
Supermarket marketing and promotions ('Little shop', game cards, fuel voucher discounts, stamp promotions)
Going shopping on an empty stomach
Visitors to the household, or special occasions
Reduced to clear items, or clearance goods past expiry date
Other: Please specify

ASK IF CODE 2 AT Q10a

11b. What are the reasons food is not stored as well as it could be in your household? MULTICODE.

Don't read storage instructions
Don't use storage containers, pegs/clips, wraps or foils
Don't have storage containers or don't have enough storage containers
Not sure about the best way to store different food types
Lack of time
Can't afford to buy storage containers and products such as pegs/clips, wraps and foils
Don't have enough storage space e.g. fridge or freezer space
It doesn't cross my/our mind
I can't be bothered
Other: Please specify

ASK IF CODE 3 AT Q10a

11c. What are the reasons too much food is cooked in your household? MULTICODE.

Prefer to serve too much food rather than not have enough
Not sure how many people will be home for the meal cooked
It's difficult to estimate how much to cook per person
Lack of time to plan ahead e.g. no meal plan
Cultural reasons e.g. in my culture it is normal to serve more than is needed
Cook extra on purpose so there will be leftovers that can be eaten or used later
Other: Please specify

ASK IF CODE 4 AT Q10a

11d. What are the reasons food in the fridge or freezer goes off in your household? MULTICODE.

Lack of time to keep on top of what's in the fridge or freezer
Food that is getting old and needs to be eaten is forgotten about
Food gets pushed to the back of the fridge or freezer so cannot be easily seen
Fruit and vegetables are forgotten about
Partially used foods are left open in their original packaging
Ingredients that are bought for special meals are used once and don't get used up
The fridge's temperature control does not work well
The fridge's light does not work well, so it is hard to see what is in there
Food is bought for guests or visitors that isn't what the household eats or likes
Other: Please specify

ASK IF CODE 5 AT Q10a

11e. What are the reasons leftovers are not eaten or re-used in your household? MULTICODE.

Our household doesn't ever eat or re-use leftovers
After the meal they are not put in the fridge or freezer for a long amount of time, or until the next day
They are thrown out because they may not be safe to eat
They are put in the fridge and forgotten about
They are put in the fridge and meant to be eaten, but plans change (e.g. go out for dinner, cook a different meal)
They are put in the fridge but no one feels like eating them
Not sure how to re-use them in future meals
Like to cook a new meal each night
Other: Please specify

ASK IF CODE 6 AT Q10a

11f. What are the reasons children, fussy eaters or those with specialist dietary requirements cause food waste in your household? MULTICODE.

Children won't finish the meal they are served
Children don't like the main meal that was cooked, so another meal is made for them
Fussy eaters won't finish the meal they are served
Fussy eaters don't like the main meal that was cooked, so another meal is made for them
Specialist food is bought for the person with specialist dietary requirements that only gets partially used
Other: Please specify

ASK IF CODE 7 AT Q10a.

11g. What are the reasons (ANSWER @ 'Other: Specify') causes food waste in your household?

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12. Thinking about how your household sources food... Which is the main place your household gets food from? SINGLE CODE. Now select all other places that you get food for your household from. MULTICODE.

A	Supermarkets	ASK Q13
B	Food market or farmers market	SKIP TO Q14

C	Fruit and vegetable store	SKIP TO Q14
D	Butcher	SKIP TO Q14
E	Bakery	SKIP TO Q14
F	Gourmet or boutique type food stores	SKIP TO Q14
G	Convenience type store (such as Four Square)	SKIP TO Q14
H	Home garden	SKIP TO Q15
I	Hunting and fishing	SKIP TO Q15
J	Family farm or garden	SKIP TO Q15
K	Community garden	SKIP TO Q15
L	Food co-op	SKIP TO Q15
M	Other (Please specify)	SKIP TO Q15

ASK ONLY IF SUPERMARKET SELECTED @ Q12

13. Which supermarket does your household mainly buy food for your household from?
MULTICODE.

New World
Countdown
Pak'nSave
Other (specify)
Don't know

ASK ONLY IF RESPONSIBLE FOR FOOD PURCHASING @QG, AND IF A TO G SELECTED @Q12

14. How often do you go shopping to buy food for your household?

Daily, or almost daily
4 to 5 times a week
2 to 3 times a week
About once a week
About once a fortnight
Less than once a fortnight
Other (Please specify)

ASK ONLY IF RESPONSIBLE FOR FOOD PURCHASING @QG

15. When you are shopping for food or before you go shopping for food how regularly do you do the following? ROTATE.

	Never	Hardly ever	Sometimes	Most times	Always
Check what is in the cupboards, fridge or freezer before doing a food shop	1	2	3	4	5
Plan a weekly menu of meals	1	2	3	4	5
Use a shopping list when buying food	1	2	3	4	5
Write a shopping list based on a menu plan	1	2	3	4	5
Stick to menu plans and shopping lists while shopping	1	2	3	4	5
Shop to a set budget	1	2	3	4	5

ASK ONLY IF RESPONSIBLE FOR FOOD PURCHASING @QG

16. Thinking about shopping for food, please indicate where you feel that you fit between the two statements.

When food shopping, I hardly ever think about how much I will use	1	2	3	4	5	When food shopping, I think carefully about how much I will use
When shopping I like to purchase more than enough food, e.g. buying large pack sizes and pre-packaged produce	1	2	3	4	5	When shopping I limit the amount of food I buy, e.g. buying small pack sizes, exact amounts, or loose produce
I buy foods that I like and do not consider if they will be completely eaten when I purchase them	1	2	3	4	5	I am careful about buying only foods that I know will be used
I buy more food if it has a special deal or promotion, e.g. 2 for the price of 1, spend more to receive a fuel discount/novelty item	1	2	3	4	5	I don't buy more food just because it has a special deal or a promotion
I like healthy foods in my house so I buy a lot of fresh fruit and vegetables even if I am not sure if they will all get eaten	1	2	3	4	5	I only buy the amount of fresh fruit and vegetables that I know will get eaten
Having children or a friend or family member shop for food with me changes what I will usually buy	1	2	3	4	5	I stick to what I would usually buy when shopping for food with children or a friend or family member
I like buying new and interesting food products that I haven't tried before	1	2	3	4	5	I like buying familiar food products that I know can be used in a range of meals

ASK ONLY IF RESPONSIBLE FOR COOKING AND PREPARING @QG

17. Thinking about cooking and preparing food, please indicate where you feel that you fit between the two statements presented.

I only cook from set recipes	1	2	3	4	5	I am good at making meals from random ingredients
I like to cook meals based on what I feel like, and will buy new ingredients for this meal	1	2	3	4	5	I look in the cupboard, fridge or freezer and make a meal from ingredients that need using up first
I'm not a confident cook. For me cooking is a chore	1	2	3	4	5	I'm a confident cook and enjoy cooking

ASK ONLY IF RESPONSIBLE FOR COOKING AND PREPARING @QG

18. When you are cooking or preparing main meals in your household, how often do you...

		Never	Hardly ever	Sometimes	Most of the time	All of the time
1	Consider portion sizes and only make as much as is needed	1	2	3	4	5
2	Make extra for a future planned meal (e.g. lunch or dinner the next day)	1	2	3	4	5
3	Make extra just in case it is needed	1	2	3	4	5

ASK ONLY IF RESPONSIBLE FOR COOKING AND PREPARING @QG

19. When you have leftovers after a main meal, how often do you or your household...

	Never	Hardly ever	Sometimes	Most of the time	All of the time
Put them in the fridge and eat or reuse them afterwards	1	2	3	4	5
Put them in the fridge and throw them out later	1	2	3	4	5
Put them in the freezer and eat or reuse them afterwards	1	2	3	4	5
Put them in the freezer and throw them out later	1	2	3	4	5
Throw them out straight after the meal	1	2	3	4	5
Throw them out because they didn't get put into the fridge or freezer	1	2	3	4	5
Throw them out because someone in the household didn't eat them	1	2	3	4	5
Throw them out from making more than you had planned	1	2	3	4	5

ASK ONLY IF RESPONSIBLE FOR STORING FOOD @QG

20. When you are storing food, how often do you...

	Never	Hardly ever	Some times	Most of the time	All of the time
Use air-tight containers and other accessories like pegs/clips, wraps and foil to make food last longer	1	2	3	4	5
Label leftovers and food when storing in containers or other accessories	1	2	3	4	5
Rotate products from back to front of shelf, fridge or freezer so the oldest food is at the front and the newest food is at the back	1	2	3	4	5
Make a list of items that need to be used up	1	2	3	4	5
Make space in the fridge, freezer or cupboard for items that need to be used up	1	2	3	4	5
Turn fruits and vegetables that are getting old into things like smoothies, soups, jams, chutneys etc. so they are not wasted	1	2	3	4	5
Freeze fruits and vegetables that are getting old for use later	1	2	3	4	5

ASK ALL

21. Thinking about your behaviour with food in your household, please indicate where you feel that you fit between the two statements presented.

I never check the 'use by' and 'best before' dates when food shopping	1	2	3	4	5	I always check the 'use by' and 'best before' dates when food shopping
I throw out fruit or vegetables that are bruised or over-ripe	1	2	3	4	5	I still eat or use fruit or vegetables that are bruised or over-ripe
I throw out hard cheese (like cheddar) that is mouldy	1	2	3	4	5	I cut off the mouldy parts of the hard cheese and use the rest
I throw out bread that is mouldy	1	2	3	4	5	I cut off the mouldy parts of the bread, or throw the mouldy pieces of bread away and use the rest
I throw out soft cheese (like feta, brie, camembert) that is mouldy	1	2	3	4	5	I cut off the mouldy parts of the soft cheese and use the rest

I throw out bread as soon as it becomes stale	1	2	3	4	5	I still use or freeze bread if it is stale for toast, breadcrumbs or cooking
I throw out cooked food items stored in the freezer once they are a few months old	1	2	3	4	5	As long as cooked food items remain frozen they can be stored for a year or more in the freezer
All leftovers that have been kept in the fridge for more than one day are unsafe to eat	1	2	3	4	5	Depending on the food, leftovers that have been kept in the fridge are safe to eat for a few days after they were cooked
I throw out leftover cooked rice as it is unsafe to eat again	1	2	3	4	5	I eat reheated leftover cooked rice the next day, or following days

22. What do you understand the term 'BEST BEFORE DATE' on a food product to mean?
DISPLAY IMAGE. SINGLE CODE.

Foods are still safe to eat after this date as long as they are not rotten or spoiled
Foods must be eaten or thrown away by this date
It depends on the food (Please explain)
Other (Please specify)
Don't know

23. What do you understand the term 'USE BY DATE' on a food product to mean?
DISPLAY IMAGE. SINGLE CODE.

Foods are still safe to eat after this date as long as they are not rotten or spoiled
Foods must be eaten or thrown away by this date
It depends on the food (Please explain)
Other (Please specify)
Don't know

24. If a food product has passed its best before date what do you do? MULTICODE.

Throw it into the rubbish straight away	EXCLUSIVE RESPONSE
Check visually to see if it's okay	
Open it and look and smell to see if it's okay	
Get a second opinion from someone else	
Google, or use another information source to find out if it's safe to eat	
Other (Please specify)	

25. To what extent do the following motivate you to try to minimise the amount of food that your household throws away?

This could be into the rubbish bin, waste disposal units, or compost

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Don't know
A desire to reduce my impact on the environment	1	2	3	4	5	6
Food shortages elsewhere in the world	1	2	3	4	5	6
The possibility of saving money by not having to buy more food	1	2	3	4	5	6

Wanting to manage my home efficiently by not having so much food stored that some will get thrown away	1	2	3	4	5	6
The satisfaction of providing wholesome home-cooked meals made from raw ingredients to my family or household	1	2	3	4	5	6
Feelings of guilt when I throw food away that could have been eaten	1	2	3	4	5	6
The way I was brought up , or the influence of my parents	1	2	3	4	5	6
I value the food I buy and don't want to throw it away	1	2	3	4	5	6

ASK ONLY OF THOSE WHO WASTE FOOD @Q7.

26. After understanding your habits and behaviours towards food and food waste throughout this survey, can you now please indicate which of the following activities you would be willing to do to minimise food waste in your household? ROTATE. MULTICODE.

	Already do this	Would consider doing this	Would not consider doing this
Be more careful about what food is bought (buying only as much as is needed, or that I know will get eaten)	1	2	3
Avoid buying bulk special deals or buying more because of promotions when it is not necessary e.g. '2 for 1', spend more to receive a fuel discount or novelty item	1	2	3
Buying smaller amounts of fresh fruit and vegetables at a time so they are more likely to be eaten before they go off	1	2	3
Making a list before going food shopping	1	2	3
Checking the fridge and cupboard before going food shopping	1	2	3
Using up food at home before new food is bought	1	2	3
Create a weekly menu plan	1	2	3
Making better use of storage containers and accessories (pegs, clips, wraps and foils)	1	2	3
Rotate food from the back to the front of the shelf (newest at the back, oldest at the front)	1	2	3
Using the freezer more effectively (freezing leftovers if not going to be eaten, freezing meal portions when buying things like meat in bulk)	1	2	3
Having better communication in the household around meal times (who is cooking each main meal, who is going to be home to eat that meal)	1	2	3
Use up fruit and vegetables before they go off – e.g. by making soups, smoothies, freezing them, or making them into jams, chutneys, pickles, stewed fruit, etc.	1	2	3
Share extra food that will not be eaten on time with friends, family or colleagues	1	2	3

26a. Are there any other activities you would be willing to do to minimise food waste in your household?

Yes	Please explain
No	

ASK ALL

27. Which of these tools do you think would help you or your household to minimise food waste?

ROTATE. MULTICODE.

A shopping list template
An easy-to-use guide to storing fresh fruit and vegetables correctly
A fridge magnet with information on how long you can store various foods in the freezer for
Recipes or ideas on how to re-use leftovers or leftover ingredients into new meals
Food storage accessories such as containers, pegs/clips, wraps and labels
A free to download app which includes recipes and planning tools
A website with recipes and planning tools
Food storage guidelines and hints
Meal planning guidelines and templates
Workshops on storing food
Workshops on cooking with leftovers
Workshops on meal planning and portion sizes
Workshops on making jams and preserves
Posters on portion sizes for 2 year olds, 5 year olds, teenagers and adults in public places (doctors' waiting rooms, supermarkets, etc.)
Information on use by and best before date labels
Reminders to check cupboards and fridges and then make a list before shopping
Stickers saying "Use first" to put on things in the fridge or pantry that need using up
Colour coordinated portion sized containers
Other (Please specify)
None of the above

DEMOGRAPHICS

i. Which of the following best describes the house where you live?

House on a farm, orchard or lifestyle block
House – standalone / detached with a large section
House – standalone / detached with a small section
Flat/s or unit/s
Apartment complex, three or more storeys
Other (specify)

ii. Which ethnicity/s do you and your household mainly identify with?

NZ European / Pakeha
Maori
Chinese
Indian
Filipino
Korean
Other Asian ethnicity (specify)
European
Samoan
Cook Islander
Tongan
Other Pacific Island ethnicity (specify)
Middle Eastern
Latin American

African
Other (specify)

iii. Which one of the following best describes you?

In paid work (full time or part time – includes being self-employed)
Unemployed
Sickness or domestic purposes benefit
Student
Home duties
Retired
Other (specify)

iv. Which of the following best describes your household?

One-person household
Couple only
Couple with children aged under 16 years
Couple only plus other adults
Couple with children under 16 years plus other adults
One-parent with children under 16 years plus other adults
One-parent with children aged under 16 years
Multiple families with children under 16 years
Multi-person adult household / Flatting
Other (specify)

v. ASK IF CODES 2 TO 9 AT Qiv. Excluding yourself, do you have any people in your household in the following age bands? If yes, please specify how many people.

0 to 6 years
7 to 12 years
13 to 15 years
16 to 19 years
20 to 24 years
25 to 34 years
35 to 44 years
45 to 54 years
55 to 64 years
65 years plus

vi. What is the highest level of education that you have completed?

No formal schooling
Primary school
Some secondary school
Completed secondary school (NCEA, University Entrance)
Tertiary education, trade or technical certificate
University or other tertiary education diploma
University or other tertiary education degree (e.g. Bachelor's degree)
University or other tertiary education post graduate degree (e.g. Honours, Masters, PhD or other doctorate degree)
Other (Please specify)

vii. Which of the following best describes your household's annual income before tax?

Less than \$20,000 per year
\$20,000 to \$39,999 per year
\$40,000 to \$59,999 per year
\$60,000 to \$79,999 per year
\$80,000 to \$99,999 per year
\$100,000 to \$149,999 per year
\$150,000 to \$199,999 per year
\$200,000 - \$399,999 per year
\$400,000 or more per year
Prefer not to say