Material change for a better environment

Scotland

Final report

The food we waste in Scotland

A report of a study that provides, for the first time, reliable information about the nature, amount and origin of food waste produced by Scottish households. The purpose of the report is to assist WRAP, government and government bodies, retailers and the food industry to develop policies, advice, tips and tools to help us all reduce the amount of good food we buy but don't eat.

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WRAP helps individuals, businesses and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change.

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Front cover photograph: Food waste found in household bins in Scotland © WRAP 2008

Key facts

- Scottish households produce 566,000 tonnes of food waste every year. Of this, 341,000 tonnes (60.2%) is collected from people's homes by councils either in their mixed waste or in special food waste collections for recycling, where these are provided.

- The difference – 225,000 tonnes or 39.8% – is disposed of by other means including home composting, feeding to pets and tipping down the sink (sewer).

- Of the 566,000 tonnes of food waste produced, over two-thirds – 389,000 tonnes or 68.8% – could have been avoided if it had been more effectively planned, stored and managed; top tips for managing food better, including recipe ideas for leftovers, are available from the *Love Food Hate Waste* campaign at www.wasteawarelovefood.org.uk

- This avoidable food waste costs Scottish households nearly £1 billion a year at 2008 prices, equivalent to £430 per household. This is slightly more than the £410 previously estimated in WRAP's 'The food we waste' report in 2008 due mainly to rises in food prices.

- The top five foods and drinks – by weight – wasted needlessly (i.e. avoidable food waste) are:
  - milk (31,000 tonnes a year worth £24 million);
  - bread slices (25,000 tonnes a year worth £35 million);
  - carbonated drinks (23,000 tonnes a year worth £21 million);
  - potatoes (excluding processed potatoes such as chips) (19,000 tonnes a year worth £17 million); and
  - pre-prepared meals made up of a mixture of ingredients (shop-bought and takeaway) 14,000 tonnes a year worth £65 million).

- The top five foods and drinks – by cost – wasted needlessly (i.e. avoidable food waste) are:
  - pre-prepared meals made up of a mixture of ingredients (shop-bought and takeaway) (£65 million a year);
  - wines (£37 million a year);
  - bread slices (£35 million a year);
  - yoghurts and yoghurt drinks (£26 million a year); and
  - milk (£24 million a year).

- Looking at the food groups that make up, the top five are:
  - drinks (excluding any added water to squash, tea etc) 70,000 tonnes (18% of the weight) worth £140 million (14% of the cost);
  - fresh vegetables (including salads) 62,000 tonnes (16% of the weight) worth £100 million (10% of the cost);
  - fresh fruit 34,000 tonnes (9% of the weight) worth £70 million (7% of the cost);
  - bakery items 46,000 tonnes (12% of the weight) worth £90 million (9% of the cost); and
  - meat and fish 20,000 tonnes (5% of the weight) worth £130 million (13% of the cost).

- Of all the avoidable food waste, half (195,000 tonnes) is thrown away because it is not used in time (e.g. before the food date expires) or is no longer wanted. The top five food groups thrown away for this reason are:
  - bakery items – 38,000 tonnes worth £73 million a year;
  - fresh vegetables (and salads) – 38,000 tonnes worth £67 million a year;
  - dairy items (including milk) – 32,000 tonnes worth £65 million a year;
  - fresh fruit – 28,000 tonnes worth £54 million a year; and
  - meat and fish – 14,000 tonnes worth £98 million a year.

- Of all the avoidable food waste disposed of via council-collected services (i.e. residual bin or separate food waste container), one-seventh (32,000 tonnes) is in full packets that are unopened/unused. Of the 32,000 tonnes, fresh vegetables and salads account for one-fifth (6000 tonnes). More than one-eighth (13.5%) by weight and just under one-sixth (16.2%) by cost of the food and drink waste thrown away in full packs is 'in-date' (i.e. the food date has not expired on the day of waste collection).

- Of all the avoidable food waste disposed of via council-collected services (i.e. residual bin or separate food waste container), more than half (54% or 117,000 tonnes) is thrown away whole and untouched. This includes items not normally purchased separately (e.g. one slice of bread). The top five food groups thrown away whole are:
  - bakery items – 32,000 tonnes worth £58 million a year,
  - fresh vegetables (including salads) – 30,000 tonnes worth £48 million a year,
  - fresh fruit – 23,000 tonnes worth £45 million a year,
  - meat and fish – 10,000 tonnes worth £73 million a year,
  - dairy items (including milk) – 7000 tonnes worth £22 million a year

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1 Background and methodology

1.1 Introduction

WRAP (Waste & Resources Action Programme) helps individuals, businesses and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change. Established as a not-for-profit company in 2000, WRAP is backed by government funding from all four governments of the UK. More information on WRAP's work in general can be found at www.wrap.org.uk and in Scotland in particular at www.wrapscotland.org.uk

The reduction and recycling of food waste produced by people in their own homes is a major strategic priority for the Scottish Government and for WRAP. The activity to reduce the amount of food waste produced by households has produced a number of work streams. Since 2004, WRAP has run a home composting programme working with local authority partners to provide heavily discounted compost bins to households in England and Scotland; all Scottish authorities are partners. At the same time an organics programme was launched to develop the commercial composting market, initially to enable more green waste to be processed but latterly also to encourage the centralised treatment of food waste. In parallel, WRAP's Retail Programme has worked to develop the Courtauld Commitment, to which 40 retailers and brand owners have now signed up; this commits them to working in a range of ways to reduce both post-consumer packaging and post-consumer food waste. WRAP has a target to reduce UK consumer food waste by 250,000 tonnes by April 2011[1], saving households over £600 million and reducing carbon dioxide (CO_2) equivalent emissions by over 1 million tonnes. As part of this programme WRAP Scotland will work in partnership with Waste Aware Scotland to reduce food waste by 25,000 tonnes, saving Scottish consumers over £60 million and reducing CO_2 equivalent emissions by 112,000 tonnes. In addition, Waste Aware Scotland and Remade Scotland have launched and evaluated trials of food waste collections from households in a number of Scotland's local authorities, and Waste Aware Scotland runs the *Love Food Hate Waste* campaign in Scotland, in partnership with WRAP (see http://www.wasteawarelovefood.org.uk/).

When WRAP started working on food waste in 2004 there was very limited information about the amounts and types of food waste produced. Good information on the types and quantities of food waste, along with reasons why the waste is produced, is crucial in working with the food industry on reducing household food waste and for the development and targeting of the consumer-facing *Love Food Hate Waste* campaign, which was launched in November 2007. To address the knowledge gap, WRAP launched a major research programme in 2007 in England and Wales, believed to be the first of its kind in the world, to quantify the nature, scale, origin and causes of post-consumer food waste. This research involved doorstep interviews amongst more than 2100 householders regarding their views on and experience of food waste-related issues; several weeks later their ordinary 'residual' waste and any separately collected food waste was collected for physical analysis to determine the amount and types of food put out for council collection[2].

Fieldwork could not be carried out in Scotland at the time of the first study. This meant that information for Scotland in 'The food we waste' was limited to top-line findings which, although useful, had limited applications for food waste policy and for the *Love Food Hate Waste* campaign. Following the success of this ground-breaking study, the Scottish Government therefore asked WRAP to undertake a similar detailed piece of work in Scotland.

[1] *For more details on the impact of WRAP's work on household food waste see http://www.wrap.org.uk/wrap_corporate/news/consumers_save_300.html*

[2] *During the doorstep interviews, informed consent was obtained with householders signing a declaration that they understood the nature of the research programme and had given their consent to take part.*

The current research is the most detailed and comprehensive study of Scottish household food waste. While this piece of research has been carried out, WRAP has also commissioned a number of other studies that will help to shed further light on the issue of food waste in both Scotland and the rest of the UK:

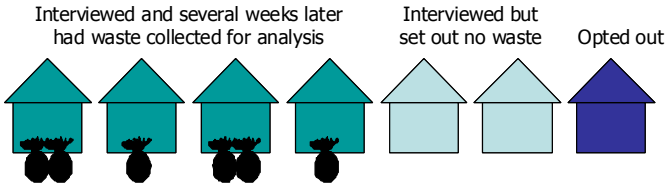
- Municipal waste in Scotland – compositional analysis of mixed waste streams that make up municipal waste (e.g. household, civic amenity sites, trade, street litter). The study will amongst other things provide another estimate of food waste in the mixed waste stream. The work is being undertaken by Wastework Ltd and is due to be completed in December 2009.
- Hospitality waste in the UK – survey and compositional audit of food, drink and packaging waste generated from certain sectors within the hospitality industry including hotels, pubs, and restaurants. The work is being undertaken by Enviros Consulting Ltd.
- Retail supply chain waste in the UK – data collection (questionnaire and compositional audit) of waste (including food and drink) in grocery distribution, retail and food manufacturing.

WRAP will also be updating their estimates of household food and drink waste in the UK with information from a range of sources, including *The Food We Waste* research, Down the Drain and a Review of Municipal Waste Composition for the Department for environment, food and rural affairs (Defra). This allows research reporting after the original release of The Food We Waste to be incorporated into estimates. This report is due to be released later in 2009.

1.2 Research methodology

The research was designed not only to quantify the amounts and types of food waste being produced in Scotland but also to understand links between the amounts and types of food waste that households produce and household attitudes, socio-demographics and disposal options. The study therefore consisted of two linked elements – a household questionnaire and a physical analysis of the contents of household bins. The current report presents findings from the physical analysis only. Further information on the household survey, and how the survey results link with what households throw away will be available in Autumn 2009.

Figure 1 Depiction of the research method



The local authorities used in the study were selected to cover a representative range of regions, types of waste receptacle, frequency of collection and availability of separate food waste collections. The local authorities provided details of their waste collection rounds and within each local authority at least two areas were selected for the research. Selection was based on economic and social factors to ensure a statistically valid sample for Scotland as a whole. Table 1 details the local authorities that were included in the research.

Table 1 Details of the selected local authorities

Local authority	Waste collection schemes				Key characteristics		
	Residual waste	Garden waste	Food waste	Recyclables	Density[3]	SIMD share[4]	Key socio-demographics[5]
Dundee	Weekly wheeled bins	Fortnightly	No	Fortnightly	23.77	5.4%	More single occupants. Fewer families. Age similar. Fewer detached properties.
Perth & Kinross	Fortnightly wheeled bins	Fortnightly combined with food	Yes	Fortnightly	0.27	0.9%	Household size similar. More shared households of unrelated adults. Slightly older. More detached properties.
Aberdeenshire	Fortnightly wheeled bins	None	No	Fortnightly	0.37	0.6%	Larger households (4+ people). More families. More middle-aged households and detached/ semi-detached properties.
Falkirk	Fortnightly wheeled bins	Fortnightly brown bin	No	Fortnightly	5.03	1.9%	Slightly more 3-4 person households. Slightly more families. Age similar. More terraced properties.
Aberdeen City	Weekly wheeled bins	Fortnightly brown bin	No	Weekly	11.14	2.8%	More single occupants. More younger adults. More rented properties.
Renfrewshire	Weekly sacks and wheeled bins	Fortnightly brown bin	No	Weekly	6.5	3.7%	Very similar demographics to Scotland as a whole.
Glasgow	Flats and tenement sample only				33.9	33.8	More single occupants. Fewer all-adult families. Younger. Twice as many flats.

The study commenced in September 2008. Prior to research fieldwork, approximately 11,000 households within the selected areas were delivered a letter that provided information about the research objectives. This included the fact that their waste would be collected and taken away for analysis and contact details in case of queries. A free phone number was used to enable householders who did not wish to take part in the research to opt out at any time. From approximately 11,000 households that received the letter, 305 households opted out of the study at this stage.

After a period of at least two weeks had elapsed from delivery of the letter, a team of interviewers from Exodus Research visited the area. Households that had not opted out were eligible for interview on a random basis by the on-street interviewing team. Tenements and flats were excluded from this part of the research and were covered in a separate exercise (see Section 1.4 for more details). The interview was conducted with a person within the household with responsibility for food shopping and covered their perceptions on a range of issues regarding household waste, focusing on food waste. The nature of the research and the fact that it included the householder's waste being taken away for analysis was again fully explained and, on completion of the interview, each householder was asked to provide signed consent to taking part in the compositional analysis. A copy of the questionnaire used can be seen in Appendix E. The household interviews were conducted between 22 September and 11 October 2008.

In total, 1558 householders were interviewed and several weeks later the waste from 1169 of them was collected. The target sample for the compositional analysis was 1056 so significantly more households were

[3] *Population density – 100 persons per square km (source www.statistics.gov.uk).*

[4] *The local authority's share (as a percentage) of the 15% most deprived data zones in Scotland (source www.scotland.gov.uk/Topics/Statistics/Browse/Social-Welfare) (SIMD = Scottish Index of Multiple Deprivation)*

[5] *Key socio-demographics of the local authority when compared to those of Scotland as a whole.*

interviewed than required to allow for further opt outs following interview, logistical problems with collection and non-presentation of waste. A further 6 households opted out following the doorstep interview stage, bringing the total number prior to waste collection to 311. The use of an op-out was an unusual approach – most waste analysis studies do not warn householders that their waste will be analysed due to the likelihood that they will change their behaviour, for example by recycling more than normal or withholding 'embarrassing' items. To counter this, a minimum of four weeks was left between the interview and the waste being collected to enable any temporary behaviour changes to return to normal. The use of an opt out may have introduced unknown bias in the sample population but warning people in advance and allowing opt-outs was deemed necessary in order to avoid potential concerns from residents regarding identity theft.

Details of the households that had been interviewed and had provided written consent were then forwarded to the waste analysis contractor, WastesWork, so that the residual waste and separate food waste (if the household was provided with such a service) could be collected and analysed. All waste was bagged at the kerbside and given a unique identifying code. It was then taken to a sort site, often a local authority municipal waste site. The waste analysis was conducted between 14 October and 12 November 2008. A total of 1169 households' residual and food waste was analysed.

Figure 2 Collecting and bagging household waste

During the food analysis stage, the team of sorters would go through the residual and food waste containers and extract any items of food that had been thrown away, including inedible food waste such as peelings, bones and cores. The food was categorised into one of 14 food groups (e.g. 'meat and fish'; see Appendix A, Table A1). After the sort process, a further categorisation of the 'mixed meals and snacks' group items was undertaken by Exodus analysts with respect to items being homemade or pre-prepared (i.e. store-bought or from a takeaway outlet) using the information provided on the sort sheets. Food was weighed without any associated packaging. The information for each food item was entered onto a recording sheet (see Appendix A, Table A3) and returned to Exodus Research. After analysis and recording, the waste was disposed of securely and sensitively with the assistance of the local authority contractor [6].

Desk-based analysts at Exodus then quality assured the data by checking each individual item against its description to validate the information provided by the sorters. Each entry was then assigned a food type code (see Appendix A, Table A4) and 'avoidability' rating. The avoidability rating involved defining the food as one of the following:

[6] *Food waste was composted as usual where local authorities offered the household a separate food waste collection service.*

- *avoidable food waste* – the food has been thrown away because it is no longer wanted or has been allowed to go past its best (examples include an apple or half a pack of cheese);
- *possibly avoidable food waste* – food that some people will eat and others will not, or that can be eaten when prepared in one way but not in another (examples include bread crusts and potato skins); and
- *unavoidable food waste* – this arises from food preparation and includes foods such as meat bones and hard vegetable or fruit peelings (e.g. melon rind); it also includes used teabags and coffee grinds.

In order to determine the cost of a food item, Exodus Research conducted a phase of desk research that reviewed all key food items and identified, through main retailer websites, prices for a premium, regular and low-cost range as at August 2008. If the particular brand for a food waste item was not recorded during the waste analysis, the cost of the food was calculated to be an average of the three ranges. The cost was allocated to each item of waste according to the weight in grams. Information on and examples of the costing process can be found in Appendix C.

It is of interest to understand the extent to which foods that could have been consumed (i.e. avoidable waste) are disposed of because they were bought and then no longer needed/used, or because too much had been cooked or prepared. Therefore each item was assigned a category ('too much cooked or prepared' or 'not used in time') based on the description provided at the time of the waste sort. More information on this can be found in Appendix A, Table A2.

Table 2 below provides information on the 95% confidence intervals that relate to the weight and cost of the observed food waste collected. For example, the average household in Scotland disposed of 95kg of food in the council residual bin and/or separate container which could have been avoided if it had been better managed or stored. We can be 95% confident that the true average weight of avoidable food waste which would have been obtained had everyone in Scotland had their council-collected waste analysed lies between 90kg and 100kg per year.

Table 2 Confidence intervals for annual food waste weights and costs

Type of waste collected by councils	Observed mean	95% confidence interval	
		Lowest expected result	Highest expected result
Average kg per household per year			
Food waste	145	135	150
Avoidable food waste	95	90	100
Average £ per household per year			
Food waste	£380	£360	£400
Avoidable food waste	£280	£260	£300

Analysis from the *The Food We Waste* study illustrated a strong correlation between the amount of food wasted and the confidence level. The more occurrences of a food type in the compositional analysis, the higher the confidence in the estimated value. If more than 150 instances of the food type were found in the survey the approximate 95% confidence interval for that food type is less than 30% of the estimate (e.g. 100 tonnes +/- 30 tonnes). Further, we calculated that 150 instances of a food type correspond to approximately 1800 tonnes of this food waste annually in Scotland. The 1800 tonnes figure was then applied as a simple cut-off in an attempt to control for food types with a relatively low frequency of occurrence.

Individual food types that were estimated to occur below 1800 tonnes was rolled up into the "other" category for a particular food group. For example, fresh brussel sprouts was estimated at 800 tonnes per year. So this was

combined with all other fresh vegetable and salad waste occurring below 1800 tonnes and classified as "other fresh vegetable and salad waste". For most food types, the vast majority of the waste is collected by Local Authorities, rather than disposed of via the sewer, home composting or fed to animals. For this reason, the criteria for including or excluding food types has been developed based on local-authority collected food waste.

For food groups found at relatively low occurrences e.g. desserts, confectionary and snacks, the majority of individual food types used in the original classification were below the 1800 tonnes threshold. It was decided to combine these observations into a separate "other food group" chapter (Chapter 15) and not report at the individual food type level.

1.3 Representativeness of the sample

The profile of the households included in the research is important because it determines the extent to which results can be generalised to all households in Scotland. The households were selected to provide a good cross-section of Scotland with respect to key demographics, location and waste collection type, frequency and receptacles. This was to enable statistically valid interpretation of the findings and, in particular, to enable the results to be extrapolated to represent the larger population, weighting where necessary.

The respondents who were interviewed and subsequently had their waste analysed were selected on a random basis. The profiles of participating households are shown in more detail in Appendix D. There are several ways in which the profile of the respondents does not fully represent the national profile of Scotland. The significant ones are:

- number of occupants and household composition, with smaller households being under-represented – this is because more than one-third of properties in Scotland are socially owned flats consisting of a small number of occupants who are likely to be unrelated;
- employment status, with unemployed, long-term sick and student households being under-represented – again, this is most likely to be due to the impact of the number of flatted properties included; and
- type of property, with shared-entrance flats being absent altogether for methodological and analytical reasons (see Section 1.4 regarding the approach taken for flats).

To take account of the shortcomings of the achieved sample, all calculations of food waste have been based on calculating individual estimates for households of different sizes (see Section 1.5 below). Household size has been deemed to be the most useful factor to use in this way because it takes account, to some extent, of the lack of flat-dwellers in the sample as these households tend to be smaller[7].

1.4 The waste generated by households living in flats

In addition to the compositional analysis of food waste put out for collection by householders, a separate study was undertaken to understand the perceptions of those in flatted properties and tenements without a separate entrance. This project was logistically and analytically more difficult than that undertaken on non-flat properties for the following reasons:

- cross-contamination of waste at household level – it is not possible to determine whether waste belongs to a particular address;
- collecting the waste requires greater support from the local authority with respect to vehicles and sort sites as the volumes are larger than those collected from individual households;

[7] *'The food we waste' (p.198) showed that household size, rather than any other demographic variable, is the most influential factor determining the amount of food waste generated.*

- analysis of food waste from a collective block of households with different backgrounds and demographics is challenging as it is not possible to draw explicit links between food waste and the profile and perceptions of the individuals living within the block; and
- obtaining consent from inhabitants within a block of flats is time-consuming and not always possible.

Given these methodological difficulties the results of the flats study are not included in the current report. Further information on this part of the study can be obtained from WRAP.

1.5 Calculating the weight and cost of food waste

This study calculates the weight and cost of all food waste and avoidable food waste disposed of via the residual bin and/or separate food waste container for the average household, and also for each type of household according to its composition (single, mixed adults, families with children) and size (one-person to six-persons). The household size variable was selected because it was proven to be a key discriminator for food waste in the previous *The food we waste* study in England and Wales. Household data was taken from General Register Office for Scotland (GROS) mid-year estimates for 2007. GROS 2007 data identifies households of one person, two persons and three-plus persons, so for households of 3 persons or more 2001 census data was used. Adjustments were applied for the frequency of waste collection where necessary.

As part of WRAP's work leading up to the publication of *The food we waste*, in 2007 WRAP conducted a kitchen diary research exercise of approximately 280 UK households. This work gathered information on incidences of food waste in the home. Households were asked to record the type and amounts of waste, and the reasons and method of disposal. This included recording food waste disposed of via the normal bin, home composting and feeding to pets. The findings of this work were incorporated into *The food we waste* report in 2008. Further details of the methodology and results for the diary exercise can be found in *The food we waste*. WRAP has also conducted a separate research exercise[8] looking at the amount of food and drink disposed of via the sewer (sink, toilet or drain) by approximately 300 households in England, Scotland and Wales. That research provides a better estimate of the weight and cost of food and drink waste disposed of via the sewer.

In the current study, the results from the compositional analysis of council collected waste (normal bin and separate food waste container) were used alongside the previous sewer and kitchen diary research to estimate food and drink waste disposed of via all methods in Scotland. The weight and cost of duplicated items such as teabags have been removed from this analysis. The data from the compositional analysis and the sewer data are separately factored to represent Scotland according to household size. The proportions of each food group disposed of via council collections and via the sewer are taken from the respective studies. As no information on the proportion of different types of waste thrown away via home composting and feeding animals is available, the proportions from the council-collected waste were applied. Throughout the report food and drink waste data is usually presented as the proportion disposed of via council collections (residual bin and separate food waste container where available) and all disposal methods.

In several chapters, mini pie-charts have been used to depict the importance of the sub-category of food being discussed in relation to the total amount of food waste. These should be read carefully to avoid misinterpretation. The estimated weights and costs of food and drink waste are calculated using the observed proportions of waste from the different studies; rounding anomalies may occur, particularly where such estimates are presented at lower levels of rounding.

[8] *For further information, see the WRAP report 'Down the drain' (publication expected Autumn 2009).*

1.6 Report overview

This report provides information on the weight and cost of wasted food and drink disposed of via council collections (residual bins and separate food waste containers if applicable) and all other methods combined (local authority, home composting, feeding animals and sewer disposal). The report structure is described below:

- Overview for Scotland (Chapter 2): this focuses on the total weight and cost of all food and drink waste and avoidable food and drink waste from Scottish households that is collected by councils, and then analyses it by all methods of disposal. Section 2.7 provides a comparison of the estimates for food waste from the current study with the previous Scottish estimates in the original *The food we waste* report. The chapter concludes by describing the top 40 avoidable wasted items, in terms of both weight and cost.

- Food group overview (Chapter 3): this focuses firstly on total food waste and avoidable waste for key food groups (e.g bakery, dairy) that are collected by councils and by all other methods of disposal. The chapter then goes on to look at food preparation state at the point of disposal and an estimate of the avoidable food waste disposed of in full packs 'in-date' and 'out-of-date'.

- Detailed analysis by food group type (Chapters 4-14): These chapters present total and avoidable food waste for 11 food groups. Individual chapters are presented in order of contribution to overall food waste estimates (tonnes), with the highest first. Pie charts are used at the start of each chapter to show the contribution of a given food group to both overall and avoidable food waste. Also presented in each chapter is the food preparation state at the point of disposal and an estimate of food waste disposed of 'in-date' and 'out-of-date'.

- Other food groups (Chapter 15): this chapter combines 4 individual food groups that were found at relatively low occurrences during the study.

- Analysis of five-a-day portion equivalents (Chapter 16): this examines the number of potential five-a-day portions of fruit and vegetables that are thrown away by households in Scotland.

There are also six Appendices which provide more details on the categorisation, terminology and costing of food waste, the profiles of participating households, a copy of the questionnaire used during household interviews prior to waste collection and a list of the signatories to the Courtauld Commitment.

2 Weight and cost of food waste in Scotland

2.1 Introduction

This chapter provides information on the financial cost and weight of the different types of food disposed of by householders in Scotland. The estimates are shown for the amount of food waste collected by local authorities in Scotland and then for all methods of disposal. For each category estimates for all food and drink waste and avoidable food and drink waste are given, since avoidable waste is seen as the priority for waste reduction and is the focus of the *Love Food Hate Waste* campaign in Scotland. Weights have been converted from grams to kilograms and then rounded to the nearest 100 tonnes for national estimates, whilst annual costs have been rounded to the nearest £10 million. For household estimates, weights are rounded to the nearest 5kg and £10 per year. Therefore rounding anomalies may occur.

Where food and drink were disposed of in a container or packaging, the associated weight is excluded from the analysis. Estimates for the food waste for Scotland as a whole are calculated using the average weights and costs associated with households of different sizes and then weighted up for the proportion of households of each size in Scotland according to the 2007 mid-year estimates (source www.gro-scotland.gov.uk).

2.2 How much food do households throw away via council-collected services?

This section includes all food waste produced by Scottish households, including that which is unavoidable (e.g. peelings, bones and cores) or possibly avoidable (e.g. bread crusts). The estimated weights and costs are calculated by (a) using the average weight and cost for each household based on the food and drink waste data arising from the compositional analysis and then (b) weighting the data up to the overall number of households of each size in Scotland. This approach will allow for the impact of flats, which have smaller occupancy rates. In this section the analysis is for food waste collected by local authorities via the residual waste and separate food waste collections only.

2.2.1 Estimated weight of all food waste collected by local authorities

Table 3 Weight of all food and drink waste collected from households in Scotland via local authority residual and food waste collections

Household size	Weight (tonnes) of all food and drink waste collected per year	Weight (tonnes) collected per year	
		Food (including milk)	Drink
One person	86,700	79,800	7000
Two people	104,000	94,300	9800
Three people	64,300	59,300	5000
Four people	58,400	54,500	3800
Five people	20,400	19,300	1100
Six or more people	6700	6300	400
Total	*340,500*	*313,500*	*27,100*

It can be seen in the above table that the total weight of food and drink waste collected by local authorities via the residual and separate food waste collections is estimated to be 340,500 tonnes per year. Local authorities use 'kg per household' as a means of monitoring their schemes. The equivalent figures are an average of 145kg per household per year or 2.8kg per household per week, assuming a 52-week collection schedule.

Table 4 Average weight of all food and drink waste collected from households in Scotland via local authority residual and food waste collections

	Average weight (kg) of all food and drink waste collected per year	Average weight (kg) collected per year	
		Food (including milk)	Drink
Average household	145	135	10

2.2.2 Estimated cost of all food waste collected by local authorities

Table 5 Cost of all food and drink waste collected from households in Scotland via local authority residual and food waste collections

Household size	Cost (£M) of all food and drink waste collected per year	Cost (£M) collected per year	
		Food (including milk)	Drink
One person	£200	£190	£10
Two people	£280	£260	£20
Three people	£170	£160	£10
Four people	£150	£140	£10
Five people	£50	£50	£0
Six or more people	£20	£20	£0
Total	*£870*	*£820*	*£50*

It can be seen in the above table that the total cost of food and drink waste collected by local authorities via the regular and separate food waste collections is estimated to be £870 million per year. The equivalent per household figures are an average of £380 per year or £7.2 per household per week, assuming a 52-week collection schedule.

Table 6 Average cost of all food and drink waste collected from households in Scotland via local authority residual and food waste collections

	Average cost (£) of all food and drink waste collected per year	Average cost (£) collected per year	
		Food (including milk)	Drink
Average household	£380	£360	£20

2.3 How much avoidable food waste do households throw away via council-collected services?

This section includes only food waste produced by Scottish households that is avoidable, i.e. food and drink that could have been consumed if it had been better stored or managed. It excludes items that cannot be eaten (e.g. teabags) and items that some people choose not to eat (e.g. potato skins). The estimated weights and costs are calculated by (a) using the average weight and cost, for each household size, of the food and drink waste arising from the compositional analysis and then (b) weighting the data up to the overall number of households of each size in Scotland. This approach will allow for the impact of flats, which have smaller occupancy rates. In this section the analysis is for food waste collected by local authorities via the residual waste and separate food waste collections only.

2.3.1 Estimated weight of avoidable food waste collected by local authorities

Table 7 Weight of avoidable food and drink waste collected from households in Scotland via local authority residual and food waste collections

Household size	Weight (tonnes) of avoidable food and drink waste collected per year	Weight (tonnes) collected per year	
		Food (including milk)	Drink
One person	51,600	50,900	700
Two people	61,100	59,600	1500
Three people	45,800	44,100	1700
Four people	40,100	38,900	1200
Five people	12,800	12,600	200
Six or more people	3700	3600	100
Total	*215,100*	*209,700*	*5400*

It can be seen in the above table that the total weight of avoidable food and drink waste collected by local authorities via the regular and separate food waste collections is estimated to be 215,100 tonnes per year. Local authorities use 'kg per household' as a means of monitoring their schemes. The equivalent figures are an average of 95kg per household per year or 1.8kg per household per week, assuming a 52-week collection schedule.

Table 8 Average weight of avoidable food and drink waste collected from households in Scotland via local authority residual and food waste collections

	Average weight (kg) of avoidable food and drink waste collected per year	Average weight (kg) collected per year	
		Food (including milk)	Drink
Average household	95	90	<5

2.3.2 Estimated cost of avoidable food waste collected by local authorities

Table 9 Cost of avoidable food and drink waste collected from households in Scotland via local authority residual and food waste collections

Household size	Cost (£M) of avoidable food and drink waste collected per year	Cost (£M) collected per year	
		Food (including milk)	Drink
One person	£140	£140	<£10
Two people	£200	£190	<£10
Three people	£130	£130	<£10
Four people	£120	£110	<£10
Five people	£40	£30	<£10
Six or more people	£10	£10	<£10
Total	*£640*	*£630*	*£10*

The above table shows that the total cost of avoidable food and drink waste collected by local authorities via the residual and separate food waste collections is estimated to be £640 million per year. The equivalent per household figures are an average of £280 per year or £5.3 per household per week, assuming a 52-week collection schedule.

Table 10 Average cost of avoidable food and drink waste collected from households in Scotland via local authority residual and food waste collections

	Average cost (£) of avoidable food and drink waste collected per year	Average cost (£) collected per year	
		Food (including milk)	Drink
Average household	£280	£270	<£10

2.4 How much food do households throw away via all methods of disposal?

This section includes all food and drink waste produced by Scottish households, including that which is unavoidable such as peelings, bones and cores. This analysis is for food and drink waste collected by local authorities via the residual waste and separate food waste collections and that disposed of via other methods such as home composting, feeding to pets or disposal via the sink or drain. The amount of food and drink waste disposed of via the sewer is obtained from the diary exercise undertaken by WRAP to measure the amount of food and drink disposed of via the sink, toilet or drain by households in the United Kingdom. Estimates for the amount of food and drink disposed of via home composting, feeding animals and so on were provided by WRAP; more information on the approach taken can be found in Section 1.5.

2.4.1 Estimated weight of all food waste produced by households in Scotland

Table 11 Weight of all food and drink waste produced by households in Scotland

Household size	Weight (tonnes) of all food and drink waste per year	Weight (tonnes) per year	
		Food (including milk)	Drink
One person	147,100	125,600	21,500
Two people	179,300	142,400	36,900
Three or more people	235,900	195,600	40,300
Total	*565,900*	*466,300*	*99,600*

It can be seen in the above table that the total weight of household food and drink waste via all methods of disposal is estimated to be 565,900 tonnes per year. Just over eight-tenths (82.4%) of this waste is made up of food with the rest being drinks. The equivalent per household figures are an average of 245kg per year or 4.7kg per household per week, assuming a 52-week collection schedule.

Table 12 Average weight of all food and drink waste produced by households in Scotland

	Average weight (kg) of all food and drink waste per year	Average weight (kg) per year	
		Food (including milk)	Drink
Average household	245	200	45

2.4.2 Estimated cost of all food waste produced by households in Scotland

Table 13 Cost of all food and drink waste produced by households in Scotland

Household size	Cost (£M) of all food and drink waste per year	Cost (£M) per year	
		Food (including milk)	Drink
One person	£340	£290	£50
Two people	£450	£370	£80
Three or more people	£550	£480	£70
Total	*£1360*	*£1160*	*£200*

It can be seen in the above table that the total cost of food and drink waste produced by households in Scotland is estimated to be £1360 million per year. More than eight-tenths (85.3%) of this waste is made up of food with the remainder being drinks. The equivalent per household figures are an average of £590 per year or £11.3 per household per week, assuming a 52-week collection schedule.

Table 14 Average cost of all food and drink waste produced by households in Scotland

	Average cost (£) of all food and drink waste per year	Average cost (£) per year	
		Food (including milk)	Drink
Average household	£590	£500	£90

2.5 How much avoidable food waste do households throw away via all methods of disposal?

This section includes only food waste produced by Scottish households that is avoidable, i.e. food and drink that could have been consumed if it had been better stored or managed. It excludes items that cannot be eaten (e.g. teabags) and items that some people choose not to eat (e.g. apple skins). The estimated weights and costs are calculated by (a) using the average weight and cost, for each household size, of the food and drink waste arising from the compositional analysis and then (b) weighting the data up to the overall number of households of each size in Scotland. This approach will allow for the impact of flats, which have smaller occupancy rates. In this section the analysis is for food and drink waste disposed of by all methods (council collection, via the sewer, home composting, feeding animals etc); further information on the approach taken can be found in Section 1.5.

2.5.1 Estimated weight of avoidable food waste produced by households in Scotland

Table 15 Weight of avoidable food and drink waste produced by households in Scotland

Household size	Weight (tonnes) of avoidable food and drink waste per year	Weight (tonnes) per year	
		Food (including milk)	Drink
One person	95,900	84,100	11,900
Two people	120,400	94,600	25,800
Three or more people	171,900	139,600	32,300
Total	*389,300*	*319,000*	*70,300*

It can be seen in the above table that the total weight of avoidable food and drink waste produced by Scottish households is estimated to be 389,300 tonnes per year. Just over eight-tenths (81.9%) of this waste is food items with the remainder made up of drinks. The equivalent per household figures are an average of 170kg per year or 3.2kg per household per week, assuming a 52-week collection schedule.

Table 16 Average weight of avoidable food and drink waste produced by households in Scotland

	Average weight (kg) of avoidable food and drink waste per year	Average weight (kg) per year	
		Food (including milk)	Drink
Average household	170	140	30

2.5.2 *Estimated cost of avoidable food waste produced by households in Scotland*

Table 17 Cost of avoidable food and drink waste produced by households in Scotland

Household size	Cost (£M) of avoidable food and drink waste per year	Cost (£M) per year	
		Food (including milk)	Drink
One person	£240	£210	£20
Two people	£320	£270	£50
Three or more people	£430	£370	£60
Total	*£1000*	*£860*	*£140*

It can be seen in the above table that the total cost of avoidable food and drink waste produced by Scottish households is estimated to be £1000 million per year. More than eight-tenths (86.3%) of this avoidable waste is made up of food items and the remainder is drinks. The equivalent per household figures are an average of £430 per year or £8.2 per household per week, assuming a 52-week collection schedule.

Table 18 Average cost of avoidable food and drink waste produced by households in Scotland

	Average cost (£) of avoidable food and drink waste per year	Average cost (£) per year	
		Food (including milk)	Drink
Average household	£430	£370	£60

2.6 How much food do different types of household throw away?

The previous sections presented the weight and cost of food and drink waste and avoidable food and drink waste produced by households of different sizes. The following section looks at the average food and drink waste generated by households of different composition (single occupancy, mixed adults, families with children) via all methods of disposal (council collection, home composting, disposal via the sewer and feeding to animals), for both total food and drink waste, and that which is avoidable.

2.6.1 *The average weight and cost of all food and drink waste by household composition*

The following tables provide estimates of the average annual weight and cost of food and drink waste produced by households of different composition. Weights are rounded to the nearest 5kg and costs to the nearest £10. On average families with children produce more food waste when compared to single occupancy or mixed adults households. This is likely a reflection of the tendency for families with children to live in larger households.

Table 19 Estimated average weight (kg per year) of food and drink waste from households of different types

	Single occupancy	Mixed adults	Families with children
Average household	*190*	*250*	*310*

Table 20 Estimated average cost (£ per year) of food and drink waste from households of different types

	Single occupancy	Mixed adults	Families with children
Average household	*£430*	*£620*	*£720*

2.6.2 The average weight and cost of avoidable food and drink waste by household composition

Avoidable food waste is made up of food items that could have been eaten if they had been managed or stored better. The food may not have been fit for consumption at the time of disposal because it had gone mouldy or had been spoilt, or it may have been thrown away because it was no longer wanted. Avoidable food waste excludes items that could not have been eaten (e.g. bones) or items that some people choose not to eat (e.g. vegetable peelings or bread crusts).

The following tables provide estimates of the average annual weight and cost of avoidable food and drink waste produced by households of different composition. Weights are rounded to the nearest 5kg and costs to the nearest £10. Families with children on average produce the largest amounts of avoidable waste, as highlighted in 2.6.1 this is likely a reflection of the tendency for families with children to live in larger households.

Table 21 Estimated average weight (kg per year) of avoidable food and drink waste from households of different types

Household size	Single occupancy	Mixed adults	Families with children
Average household	*120*	*170*	*225*

Table 22 Estimated average cost (£ per year) of avoidable food and drink waste from households of different types

Household size	Single occupancy	Mixed adults	Families with children
Average household	*£310*	*£450*	*£550*

2.7 How the current weights and costs compare to the original estimates

The original food waste compositional study conducted in England and Wales[9] used the observed council-collected weights and costs of average households to estimate the weights and costs of food waste in Scotland. The current study, which uses data from households in Scotland, provides estimates as follows:

Table 23 Original and current estimates of household food and drink waste in Scotland via all methods of disposal

	All food waste – weight		All food waste – cost	
	Original	**Current**	**Original**	**Current**
National estimate	587,000 tonnes	566,000 tonnes	£1263 million	£1360 million
Average per Scottish household	270kg	245kg	£580	£590

Table 24 Original and current estimates of avoidable household food and drink waste in Scotland via all methods of disposal

	Avoidable food waste – weight		Avoidable food waste – cost	
	Original	**Current**	**Original**	**Current**
National estimate	357,000 tonnes	389,000 tonnes	£889 million	£1000 million
Average per Scottish Household	160kg	170kg	£410	£430

[9] *'The food we waste' WRAP 2008*

Given the natural variability associated with this type of survey the differences between the two studies are suggested to be relatively minor. A number of factors may account for the differences between the two studies:

- The original study was based on data from English and Welsh households' council-collected waste, with a factor to gross up to all methods of waste disposal. This meant that the amount of drink waste would have been under-reported as most liquid waste is disposed of via the sewer. The current study uses more up to date household data for waste from three different sources: council-collected, disposed of via the sewer, and home composting and feeding animals (see Section 1.5 for further information).

- National data on households in the original study was calculated using 2001 Census data. The current study uses the latest available information from the mid-2007 estimates.

- The calculation of food waste in the original study used food prices from summer 2007, whereas the current study used prices as of August 2008. A comparison of the prices from the two respective studies suggests food prices have on average increased by 11%, which is comparable with a Office of National Statistics estimate of 10.5% for the same period[10]. Please see section 1.2 for how food prices were calculated and Appendix C for more detailed examples of food prices.

2.8 The top 40 wasted foods that could have been consumed

The following tables list the top 40 types of food and drink making up avoidable food waste, in terms of estimated annual weight (Table 25) and cost (Table 26) for all households in Scotland. Avoidable food waste is made up of food items that could have been eaten if they had been managed or stored better. The food may not have been fit for consumption at the time of disposal because it had gone mouldy or had been spoilt, or it may have been thrown away because it was no longer wanted. Avoidable food waste excludes items that could not have been eaten (e.g. bones) or items that some people choose not to eat (e.g. vegetable peelings or bread crusts). The tables incorporate items that are thrown away whole and those that have been partially used or consumed.

2.8.1 The top 40 avoidable food wastes by weight

The following table lists the top 40 foods thrown away by Scottish households in terms of weight, by all methods of disposal. It includes both items that are thrown away whole and items that have been partially consumed. The most commonly disposed of food and drink that could have been consumed (i.e. avoidable waste) in terms of weight is milk followed by slices of bread, carbonated drinks and fresh potatoes.

[10] Based on consumer price index of food, alcohol, beverages and tobacco between August 2007 and August 2008 (updated 10th June 2009)

Table 25 Estimated weight of the top 40 items making up avoidable food waste

	Type of avoidable waste	% of avoidable waste	Method of disposal		Total tonnes per year
			Collected by council	Other methods	
1	Milk	8.0%	2060	29,140	31,200
2	Bread slices	6.5%	21,130	4160	25,290
3	Carbonated drinks	5.9%	2140	20,950	23,090
4	Potatoes	4.9%	15,760	3180	18,940
5	Pre-prepared mixed meals[11]	3.6%	11,080	3010	14,090
6	Fruit juice	3.4%	1010	12,260	13,270
7	Homemade mixed meals	3.3%	10,410	2570	12,980
8	Yoghurts/yoghurt drinks	2.5%	5520	4170	9690
9	Apples	2.5%	7940	1,650	9590
10	Mixed vegetables	2.0%	6480	1,240	7720
11	Processed potatoes	1.8%	5260	1,820	7080
12	Bananas	1.8%	5730	1,100	6830
13	Bread rolls/baguettes	1.7%	5630	1,080	6710
14	Pork/ham/ bacon	1.7%	5620	1,080	6700
15	Poultry	1.6%	5120	1,000	6120
16	Lager/beer/cider	1.5%	0	5,970	5970
17	Breakfast cereal	1.5%	1340	4,580	5920
18	Water[12]	1.4%	900	4,510	5410
19	Tea/teabags	1.2%	50	4,590	4640
20	Pre-prepared soups	1.1%	600	3,750	4350
21	Squash	1.1%	240	4,060	4300
22	Cook-in sauces	1.1%	390	3,860	4250
23	Oranges	1.1%	3550	680	4230
24	Carrots	1.0%	3370	700	4070
25	Wine	1.0%	0	3,760	3760
26	Pasta	0.9%	2160	1,250	3410
27	Rice	0.9%	1860	1,540	3400
28	Tomatoes	0.9%	2790	580	3370
29	Cheese	0.8%	2560	630	3190
30	Cabbages	0.8%	2590	530	3120
31	Lettuces	0.8%	2530	510	3040
32	Milkshakes/drinks	0.8%	270	2,670	2940
33	Cakes	0.7%	2350	500	2850
34	Homemade soups	0.7%	100	2,490	2590
35	Cream	0.6%	590	1,840	2430
36	Grapes	0.6%	2010	390	2400
37	Coleslaw and houmous	0.6%	1880	380	2260
38	Turnips/swedes	0.6%	1880	360	2240
39	Coffee	0.6%	30	2,190	2220
40	World breads	0.6%	1840	350	2190

2.8.2 The top 40 avoidable food wastes by cost

The following table lists the top 40 foods thrown away by Scottish households in terms of cost, by all methods of disposal. It includes both items that are thrown away whole and items that have been partially consumed. The most commonly disposed of food and drink that could have been consumed (i.e. avoidable waste) in terms of cost are pre-prepared mixed meals followed by homemade meals and poultry.

[11] This category is the collective weight of pre-prepared meals that are meat/fish, pasta, vegetable and rice-based, and those that could not be classified (i.e. unidentified type).

[12] Refers to purchased bottled water

Table 26 Estimated cost of the top 40 items making up avoidable food waste

	Type of avoidable waste	% of avoidable waste	Method of disposal		Total cost £M per year
			Collected by council	Other methods	
1	All pre-prepared mixed meals[13]	6.5%	£51.1	£14.1	£65.2
2	Homemade mixed meals	5.3%	£42.4	£10.9	£53.3
3	Poultry	4.4%	£36.3	£7.1	£43.4
4	Pork/ham/ bacon	4.0%	£33.1	£6.5	£39.6
5	Wine	3.7%	£0.0	£37.2	£37.2
6	Bread slices	3.5%	£28.8	£5.8	£34.6
7	Yoghurts/yoghurt drinks	2.6%	£15.3	£10.7	£26.0
8	Milk	2.4%	£1.6	£22.5	£24.1
9	Cheese	2.3%	£18.7	£4.7	£23.4
10	Carbonated drinks	2.2%	£3.5	£18.1	£21.6
11	Potatoes	1.8%	£14.5	£3.0	£17.5
12	Breakfast cereal	1.6%	£4.3	£12.1	£16.4
13	Bread rolls/baguettes	1.6%	£13.2	£2.5	£15.7
14	Fruit juice	1.6%	£1.6	£14.0	£15.6
15	Apples	1.5%	£12.1	£2.5	£14.6
16	Pre-prepared pizzas	1.3%	£10.4	£2.1	£12.5
17	Cakes	1.2%	£9.5	£2.0	£11.5
18	Cook-in sauces	1.1%	£1.2	£10.0	£11.2
19	Lager/beer/cider	1.1%	£0.0	£10.8	£10.8
20	Coffee	1.1%	£0.4	£10.2	£10.6
21	Mixed vegetables	1.0%	£8.4	£1.7	£10.1
22	Mixed salads	1.0%	£7.8	£1.7	£9.5
23	Rice	0.8%	£6.1	£2.3	£8.4
24	Tomatoes	0.8%	£6.6	£1.3	£7.9
25	Egg	0.8%	£4.9	£2.9	£7.8
26	Grapes	0.8%	£6.4	£1.3	£7.7
27	Pre-prepared soups	0.8%	£1.6	£6.0	£7.6
28	Processed potatoes	0.8%	£5.8	£1.8	£7.6
29	Peppers	0.7%	£5.9	£1.1	£7.0
30	Bananas	0.7%	£5.9	£1.1	£7.0
31	Biscuits/crackers	0.7%	£5.7	£1.3	£7.0
32	Tea/teabags	0.7%	£0.2	£6.5	£6.7
33	World breads	0.7%	£5.6	£1.1	£6.7
34	Cream	0.7%	£2.1	£4.6	£6.7
35	Oranges	0.6%	£5.2	£1.0	£6.2
36	Pasta	0.6%	£4.4	£1.8	£6.2
37	Coleslaw and houmous	0.6%	£4.9	£1.0	£5.9
38	Squash	0.6%	£0.3	£5.4	£5.7
39	Milkshakes/drinks	0.5%	£0.5	£4.4	£4.9
40	Cabbages	0.5%	£3.9	£0.8	£4.7

2.9 Summary of chapter

- Households in Scotland dispose of 565,900 tonnes of food and drink waste each year, of which more than two-thirds (68.8% or 389,300 tonnes) could have been avoided. Avoidable food and drink waste is that which could have been avoided if it had been stored or managed better. It does not include food and drink that could not have been eaten (i.e. unavoidable food waste) such as meat bones and teabags, or foods that some people choose not to eat (i.e. possibly avoidable food waste) such as soft vegetable peelings or bread crusts.

[13] *This category is the collective cost of pre-prepared meals that are meat/fish, pasta, vegetable and rice–based, and those that could not be classified (i.e. unidentified type).*

- Households in Scotland dispose of £1.36 billion of food and drink each year of which nearly three-quarters (73.5% or £1 billion) could have been avoided.

- The average household within Scotland throws away around 245kg of food and drink each year (4.7kg per household per week) of which 170kg (3.2kg per household per week) or nearly seven-tenths (68.8%) could have been avoided. There are differences between the different types of households:
  - the average family with children throws away 310kg of food and drink of which 225kg (72.5%) could have been avoided; and
  - single-occupancy households throw away 190kg of food and drink of which 120kg (65.2%) could have been avoided.

- The average household in Scotland throws away £590 of food and drink each year and nearly three-quarters (73.5% or £430 per year) of this could have been avoided. There are differences between the different types of households:
  - the average family with children throws away £720 of food and drink of which £550 (76.4%) could have been avoided; and
  - single-occupancy households throw away £430 of food and drink of which £310 (70.3%) could have been avoided.

- In terms of weight, the top five avoidable food and drink types thrown away, in order, are:
  1. milk (31,000 tonnes a year);
  2. bread slices (25,000 tonnes a year);
  3. carbonated drinks (23,000 tonnes a year);
  4. fresh potatoes (19,000 tonnes a year); and
  5. pre-prepared meals (all varieties) (14,000 tonnes).

- In terms of cost, the top five avoidable food and drink types thrown away, in order, are:
  1. pre-prepared meals (all varieties) £65 million);
  2. homemade meals (all varieties) (£53 million);
  3. poultry (£43 million);
  4. pork, ham and bacon (£39 million); and
  5. wine (£37 million).

3 Key characteristics of food waste in Scotland

3.1 Introduction

This chapter looks at the key characteristics of food waste produced by Scottish households. It provides cost and weight information for all food and drink waste (by main food groups) but focuses on avoidable waste, i.e. food that could have been eaten if it had not been allowed to go mouldy or spoilt, or if it had not been left over on a plate at the end of a meal, for example. Avoidable food waste excludes items that could not have been consumed, such as used teabags or meat bones, and waste that some people choose not to eat, such as potato or carrot peelings and bread crusts. Section 1.2 provides further information on definitions of avoidability.

The chapter covers:

- the type of food by main food group category (bakery, dairy etc) – examples of the types of food included within each category are provided in Appendix A, Table A1;
- the preparation state at point of disposal, i.e. if the food was purchased and thrown away unused ('not used in time') or if it had been cooked or prepared but not consumed ('too much cooked or prepared') – examples are provided in Appendix A, Table A2;
- the extent to which avoidable food items are thrown away in the council residual bin or separate food container whole and unused/unopened – in this section the number of items is also reported; and
- an estimate of the avoidable food waste disposed of 'in-date' and 'out-of-date' – this analysis is only conducted on items disposed of in packaging that had a food date.

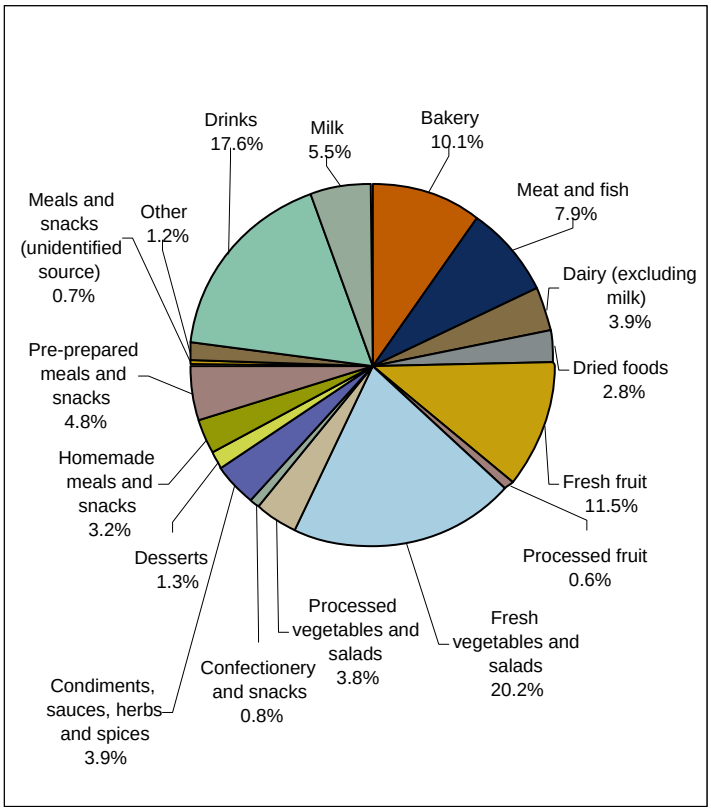
In each case the data arising from the compositional analysis of food and drink waste collected by the participating local authorities has been grossed up to provide an estimation of the weight and cost of food waste for all Scottish households each year using the 2007 mid-year estimates (source www.gro-scotland.gov.uk).

Unless otherwise indicated, weights are rounded to the nearest 100 tonnes for high-level figures and 10 tonnes for more detailed figures, while costs are rounded to the nearest £1 million at the top level and the nearest £0.1 million for more detailed results; this means that rounding anomalies may occur. The charts illustrate the weights and costs of waste via all methods of disposal. In order to keep charts and tables legible, items that occur only in small amounts are aggregated into a 'other' category.

3.2 What types of food and drink waste do households in Scotland throw away?

3.2.1 Types of food and drink waste by weight

Figure 3 How different types of food and drink make up total food waste weight



Of the food and drink waste generated, more than one-fifth (20.2%) by weight is made up of fresh vegetables and salads. More than one-sixth (17.6%) consists of drink and more than one-tenth (11.5%) is fresh fruit. Overall, fruit, vegetables and salads (fresh and processed) make up more than one-third (36.1%) of the weight of all food and drink waste disposed of via all methods by households in Scotland.

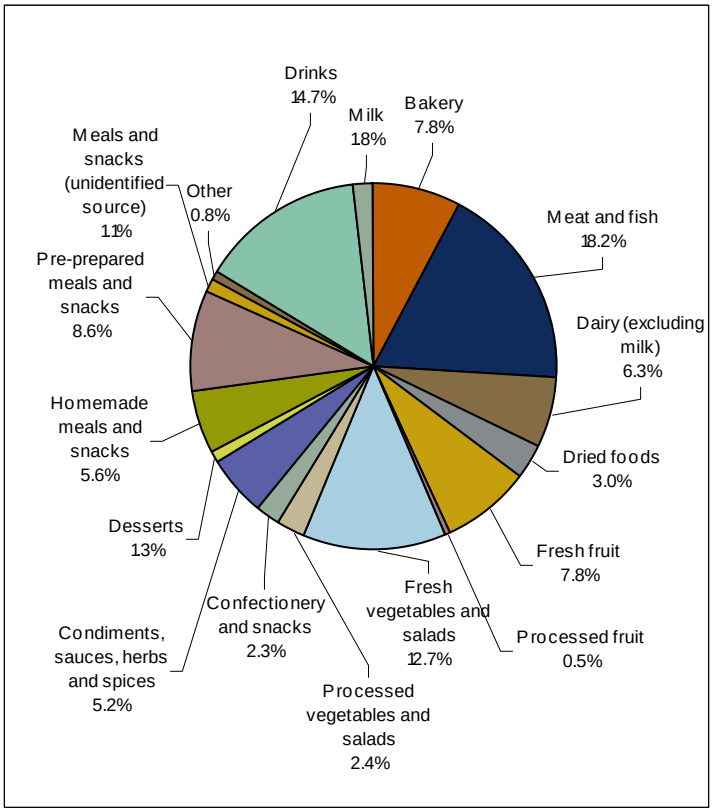
The table below gives the estimated annual weight of each food group making up food and drink waste in Scotland. The proportions provided relate to the weight of all food and drink waste by all methods of disposal.

Table 27 The proportions and estimated annual weight of food and drink waste from households in Scotland

Food group	Proportion of weight by all methods of disposal	Weight (tonnes)	
		Council collected	Total
Fresh vegetables and salads	20.2%	95,000	114,200
Drinks	17.6%	27,100	99,600
Fresh fruit	11.5%	54,100	65,100
Bakery	10.1%	47,300	57,400
Meat and fish	7.9%	30,000	44,500
Milk	5.5%	2100	31,200
Pre-prepared meals and snacks	4.8%	19,100	27,400
Condiments, sauces, herbs and spices	3.9%	6300	22,200
Dairy (excluding milk)	3.9%	13,900	22,100
Processed vegetables and salads	3.8%	9700	21,700
Homemade meals and snacks	3.2%	12,700	18,300
Dried foods	2.8%	8000	15,900
Desserts	1.3%	2200	7300
Other	1.2%	5600	7000
Confectionery and snacks	0.8%	3900	4600
Meals and snacks (unidentified source)	0.7%	2800	4000
Processed fruit	0.6%	1000	3600
Total	*100%*	*340,500*	*565,900*

3.2.2 Types of food and drink waste by cost

Figure 4 How different types of food and drink make up total food waste cost



Of the food and drink waste generated, nearly one-fifth (18.2%) by cost is made up of meat and fish. A further one-seventh (14.7%) consists of drinks and one-eighth (12.7%) consists of fresh vegetables and salads. Overall, fruit, vegetables and salads (fresh and processed) make up nearly a quarter (23.3%) of the cost of all food and drink waste disposed of by all methods by households in Scotland. The table below gives the estimated annual cost of each food group making up food and drink waste in Scotland. The proportions provided relate to the cost of all food and drink waste by all methods of disposal.

Table 28 The proportions and estimated annual cost of food and drink waste from households in Scotland

Food group	Proportion of cost by all methods of disposal	Cost (£M)	
		Council collected	Total
Meat and fish	18.2%	£174	£247
Drinks	14.7%	£46	£200
Fresh vegetables and salads	12.7%	£143	£172
Pre-prepared meals and snacks	8.6%	£89	£117
Bakery	7.8%	£87	£105
Fresh fruit	7.8%	£87	£106
Dairy (excluding milk)	6.3%	£59	£85
Homemade meals and snacks	5.6%	£57	£75
Condiments, sauces, herbs and spices	5.2%	£29	£70
Dried foods	3.0%	£22	£40
Processed vegetables and salads	2.4%	£16	£32
Confectionery and snacks	2.3%	£26	£32
Milk	1.8%	£2	£24
Desserts	1.3%	£7	£17
Meals and snacks (unidentified source)	1.1%	£11	£15
Other	0.8%	£8	£11
Processed fruit	0.5%	£3	£7
Total	*100%*	*£868*	*£1356*

3.3 What types of food and drink waste could have been avoided by households in Scotland?

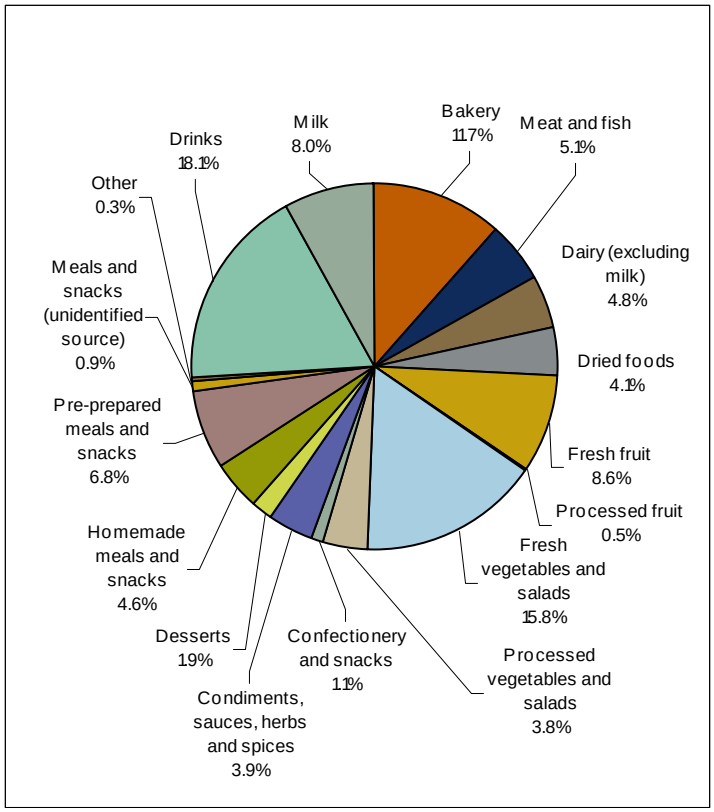
Avoidable food and drink waste is food that could have been eaten if it had not been allowed to go mouldy or spoilt, or if it had not been left over on a plate at the end of a meal, for example. Avoidable food waste excludes items that could not have been consumed, such as used teabags or meat bones, and waste that some people choose not to eat, such as potato or carrot peelings or bread crusts. The following table provides information on the proportion of food and drink waste that is avoidable and thrown away by Scottish households via all methods of disposal. Overall, more than two-thirds (68.8%) of the weight and nearly three-quarters (73.5%) of the cost of all food and drink waste in Scotland could have been avoided.

Table 29 The proportion of food and drink that is avoidable waste from households in Scotland

	All food and drink	Food (including milk)	Drink
Proportion of all weight that is avoidable	68.8%	68.4%	70.6%
Proportion of all cost that is avoidable	73.5%	74.4%	68.4%

3.3.1 Types of avoidable food and drink waste by weight

Figure 5 How different types of food and drink make up avoidable food waste weight



The above chart illustrates that, of the avoidable food and drink waste generated, less than one-fifth (18.1%) by weight is made up of drinks and more than one-seventh (15.8%) is made up of fresh vegetables and salads. More than one-tenth (11.7%) of the weight consists of bakery items. Overall, fruit, vegetables and salads (fresh and processed) make up nearly three-tenths (28.7%) of the weight of avoidable food and drink waste.

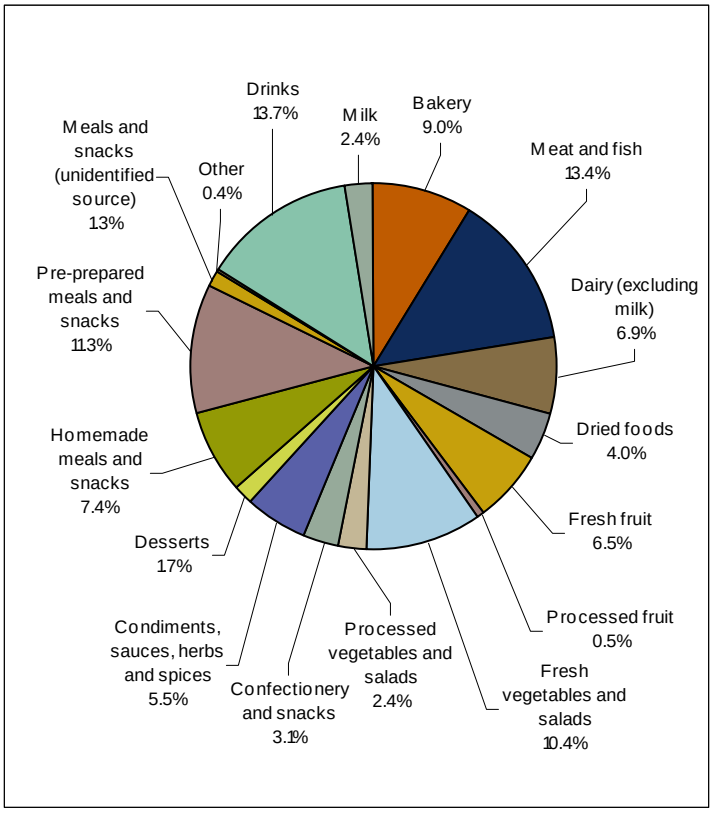
The table below gives the estimated annual weight of each food group making up avoidable food and drink waste in Scotland. The proportions provided relate to the weight of all food and drink waste by all methods of disposal.

Table 30 The proportions and estimated annual weight of avoidable food and drink waste from households in Scotland

Avoidable food waste group	Proportion of weight by all methods of disposal	Weight (tonnes)	
		Council collected	Total
Drink	18.1%	5400	70,300
Fresh vegetables and salads	15.8%	51,300	61,600
Bakery	11.7%	37,600	45,600
Fresh fruit	8.6%	27,700	33,500
Milk	8.0%	2100	31,200
Pre-prepared meals and snacks	6.8%	18,200	26,400
Meat and fish	5.1%	16,400	20,000
Dairy (excluding milk)	4.8%	10,600	18,700
Homemade meals and snacks	4.6%	12,400	17,900
Dried foods	4.1%	8000	15,900
Condiments, sauces, herbs and spices	3.9%	6100	15,200
Processed vegetables and salads	3.8%	9500	14,800
Desserts	1.9%	2200	7300
Confectionery and snacks	1.1%	3600	4300
Meals and snacks (unidentified source)	0.9%	2500	3600
Processed fruit	0.5%	900	1800
Other	0.3%	600	1000
Total	*100%*	*215,100*	*389,300*

3.3.2 Types of avoidable food and drink waste by cost

Figure 6 How different types of food and drink make up avoidable food waste cost



The above chart illustrates that, of the avoidable food and drink waste generated, nearly one-seventh by cost is made up by drinks (13.7%) and by meat and fish (13.4%). More than one-tenth consists of pre-prepared meals and snacks (11.3%) and vegetables and salads (10.4%). Overall, fruit, vegetables and salads (fresh and processed) make up one-fifth (19.8%) of the cost of avoidable food and drink waste. The table below gives the estimated annual cost of each food group making up avoidable food and drink waste in Scotland. The proportions provided relate to the weight of all food and drink waste by all methods of disposal.

Table 31 The proportions and estimated annual cost of avoidable food and drink waste from households in Scotland

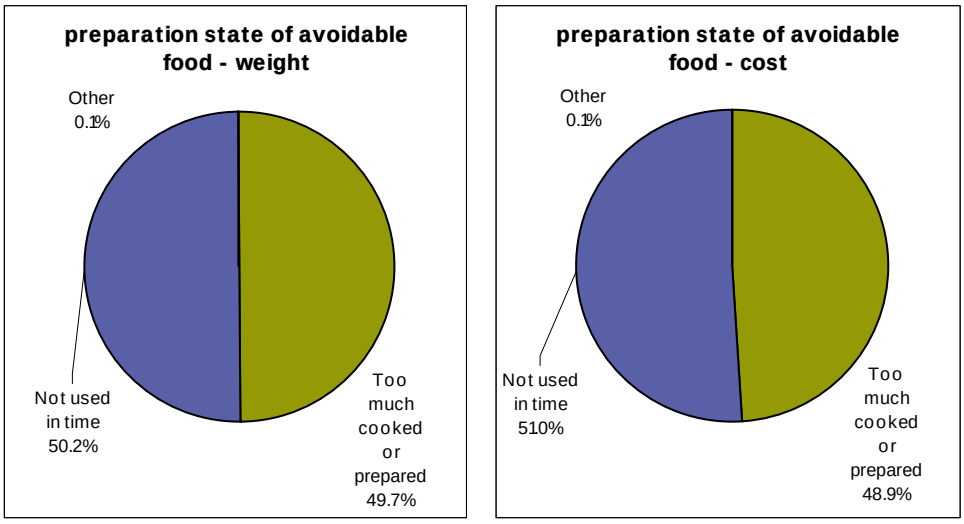
Avoidable food waste group	Proportion of cost by all methods of disposal	Cost (£M)	
		Council collected	Total
Drink	13.7%	£11	£137
Meat and fish	13.4%	£110	£133
Pre-prepared meals and snacks	11.3%	£86	£113
Fresh vegetables and salads	10.4%	£86	£104
Bakery	9.0%	£74	£90
Homemade meals and snacks	7.4%	£56	£74
Dairy (excluding milk)	6.9%	£44	£69
Fresh fruit	6.5%	£53	£65
Condiments, sauces, herbs and spices	5.5%	£28	£55
Dried foods	4.0%	£22	£40
Confectionery and snacks	3.1%	£26	£31
Processed vegetables and salads	2.4%	£16	£24
Milk	2.4%	£2	£24
Desserts	1.7%	£7	£17
Meals and snacks (unidentified source)	1.3%	£10	£13
Processed fruit	0.5%	£3	£5
Other	0.4%	£2	£4
Total	*100%*	*£637*	*£997*

3.4 In what food preparation state is avoidable food and drink waste thrown away?

The preparation state of the avoidable food waste was determined by the research analysts based on the information provided by the waste analysts. Where adequate information was available, food waste items that could have been consumed if they had been better managed or stored (i.e. avoidable waste) were assigned to one of two categories: 'too much cooked or prepared' for items that had been cooked or prepared in the home but had not been consumed; and 'not used in time' for items purchased but then not used or no longer wanted. More information on food preparation state and examples are provided in Appendix A, Tables A2a and A2b.

3.4.1 The amount of avoidable food and drink waste thrown away because too much is cooked or prepared or because it is not used in time

Figures 7 and 8 How different preparation states make up avoidable food and drink waste



The above charts illustrate that, of the avoidable food and drink waste generated, in terms of weight, half (50.2%) is food and drink that is not used in time – either it is no longer wanted or it is no longer suitable for consumption (e.g. it has been allowed to go past its best). Slightly less than half (49.7%) by weight is made up of items thrown away because too much is cooked or prepared. A similar picture emerges in terms of cost, with just over half (51.0%) not being used in time and nearly half (48.9%) of the avoidable food and drink waste cost consisting of items cooked or prepared in too great a quantity to be fully consumed. The following tables give the proportions, annual weight (Table 32) and annual cost (Table 33) of food and drink waste in Scotland by food preparation state.

Table 32 The proportions and estimated annual weight of avoidable food and drink waste from households in Scotland by food preparation state

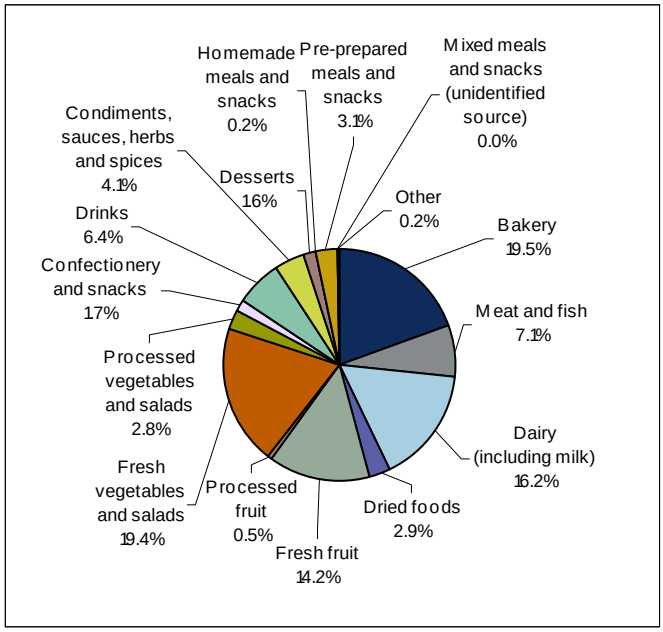
Food preparation state	% of avoidable food waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	50.2%	141,010	195,490
Too much cooked or prepared	49.7%	73,920	193,580
Other	0.1%	160	220
Total	*100%*	*215,090*	*389,290*

Table 33 The proportions and estimated annual cost of avoidable food and drink waste from households in Scotland by food preparation state

Food preparation state	% of avoidable food waste cost	Cost (£M)	
		Council collected	Total
Not used in time	51.0%	£393.7	£508.5
Too much cooked or prepared	48.9%	£243.0	£487.9
Other	0.1%	£0.7	£0.9
Total	*100%*	*£637.4*	*£997.3*

3.4.2 Which types of food and drink are thrown away because they are not used in time?

Figure 9 The proportions of different avoidable food and drink waste not used in time by weight



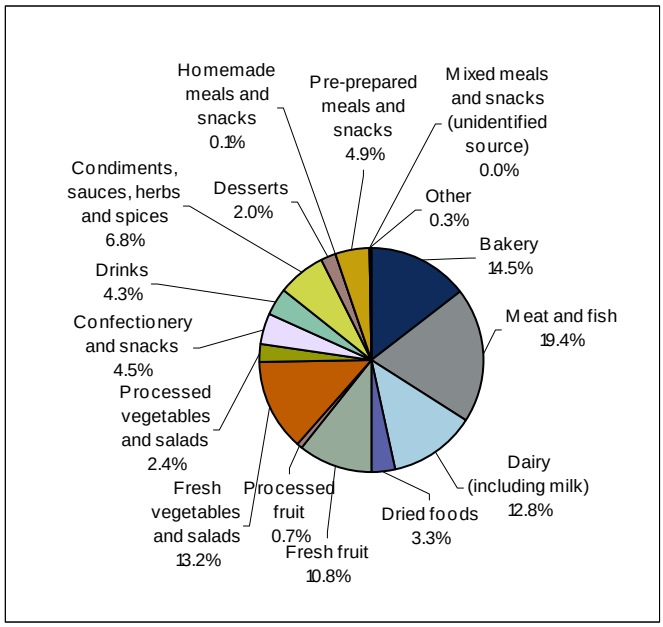
The above chart illustrates that, of the food and drink thrown away because they are not used in time or are no longer wanted, almost one-fifth by weight consists of bakery items (19.5%) and of fresh vegetables and salads (19.4%). A further one-sixth (16.2%) consists of dairy items including milk. Overall, fruit and vegetables (both fresh and processed) account for more than one-third (37.0%) of the weight of avoidable food waste not used in time. The following table details the annual weight of food thrown away because it is not used in time or is no longer wanted.

Table 34 The proportions and annual weight of avoidable food and drink waste not used in time

Type of food not used in time	% of avoidable food waste weight	Weight (tonnes)	
		Council collected	Total
Bakery	19.5%	31,940	38,130
Fresh vegetables and salads	19.4%	31,860	38,000
Dairy (including milk)	16.2%	11,530	31,600
Fresh fruit	14.2%	23,270	27,810
Meat and fish	7.1%	11,710	13,960
Drinks	6.4%	5420	12,580
Condiments, sauces, herbs and spices	4.1%	5500	7970
Pre-prepared meals and snacks	3.1%	4640	5970
Dried foods	2.9%	4790	5710
Processed vegetables and salads	2.8%	4630	5530
Confectionery and snacks	1.7%	2820	3360
Desserts	1.6%	1750	3110
Processed fruit	0.5%	890	1060
Other	0.2%	260	340
Homemade meals and snacks	0.2%	0	290
Mixed meals and snacks (unidentified source)	<0.1%	0	60
Total	*100%*	*141,010*	*195,480*

The chart below illustrates that, of the avoidable food and drink thrown away because they are not used in time or are no longer wanted, nearly one-fifth (19.4%) by cost consists of meat and fish. A further one-seventh (14.5%) is made up of bakery and a slightly lower proportion (13.2%) is made up of fresh vegetables and salads. Overall, fruit and vegetables (both fresh and processed) account for more than a quarter (27.2%) of the cost of avoidable food waste not used in time or no longer wanted.

Figure 10 The proportions of different avoidable food and drink waste not used in time by cost



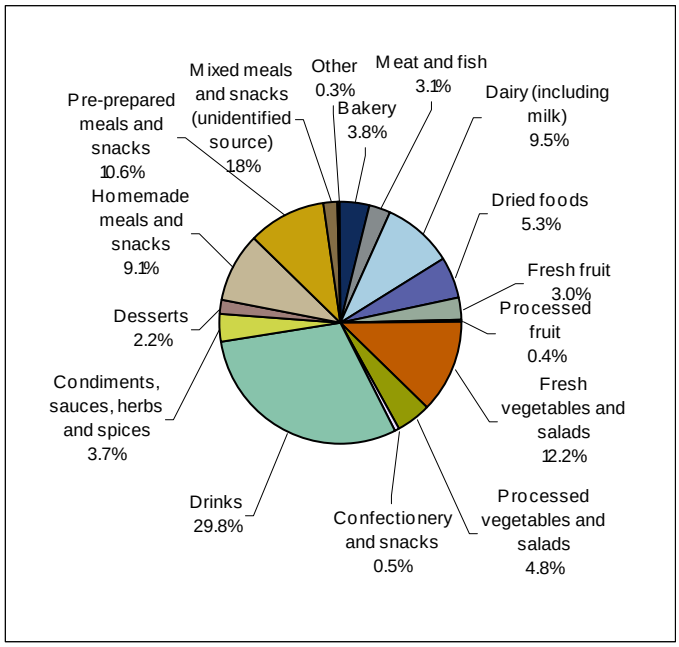
The table below details the annual cost of food thrown away because it is not used in time.

Table 35 The proportions and annual cost of avoidable food and drink waste not used in time

Type of food not used in time	% of avoidable food waste cost	Cost (£M)	
		Council collected	Total
Meat and fish	19.4%	£82.5	£98.7
Bakery	14.5%	£61.5	£73.6
Fresh vegetables and salads	13.2%	£56.3	£67.3
Dairy (including milk)	12.8%	£37.7	£65.2
Fresh fruit	10.8%	£45.2	£54.8
Condiments, sauces, herbs and spices	6.8%	£26.2	£34.4
Pre-prepared meals and snacks	4.9%	£20.1	£24.7
Confectionery and snacks	4.5%	£19.1	£22.8
Drinks	4.3%	£10.6	£21.6
Dried foods	3.3%	£14.1	£16.9
Processed vegetables and salads	2.4%	£10.3	£12.4
Desserts	2.0%	£5.8	£10.3
Processed fruit	0.7%	£3.1	£3.7
Other	0.3%	£1.2	£1.5
Homemade meals and snacks	0.1%	£0.0	£0.4
Mixed meals and snacks (unidentified source)	<0.1%	£0.0	£0.1
Total	*100%*	*£393.7*	*£508.5*

3.4.3 Which types of food and drink are thrown away because too much is cooked or prepared?

Figure 11 The proportions of different avoidable food and drink waste disposed of because too much is cooked or prepared, by weight



The above chart illustrates that, of the avoidable food and drink waste thrown away because too much has been cooked or prepared, three-tenths (29.8%) by weight consists of drinks[14]. A further one-eighth (12.2%) consists of fresh vegetables and salads and one-tenth (10.6%) is pre-prepared meals and snacks. Overall, fruit and vegetables (both fresh and processed) account for one-fifth (20.4%) of the weight of avoidable food waste where too much is cooked or prepared. The following table details the annual weight of food thrown away because too much has been cooked or prepared.

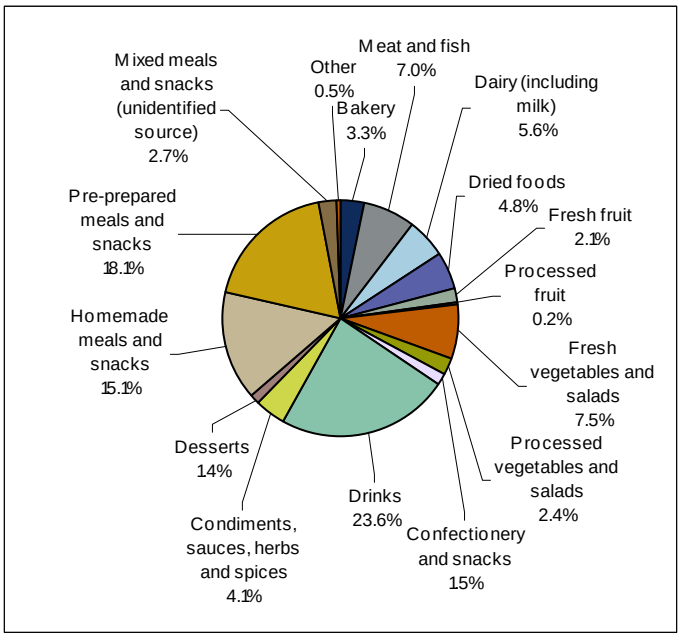
[14] For drink waste our definition of 'prepared/cooked too much' relates to items that are made up in the home like a cup of tea/coffee or glass of squash or poured glass of fruit juice. Estimates were not made for council collections.

Table 36 The proportions and annual weight of avoidable food and drink waste disposed of because too much is cooked or prepared

Type of food where too much is cooked or prepared	% of avoidable food waste weight	Weight (tonnes)	
		Council collected	Total
Drinks	29.8%	0	57,690
Fresh vegetables and salads	12.2%	19,370	23,550
Pre-prepared meals and snacks	10.6%	13,580	20,480
Dairy (including milk)	9.5%	1160	18,320
Homemade meals and snacks	9.1%	12,350	17,620
Dried foods	5.3%	3200	10,230
Processed vegetables and salads	4.8%	4860	9280
Bakery	3.8%	5650	7430
Condiments, sauces, herbs and spices	3.7%	570	7170
Meat and fish	3.1%	4640	6020
Fresh fruit	3.0%	4450	5720
Desserts	2.2%	450	4180
Mixed meals and snacks (unidentified source)	1.8%	2510	3580
Confectionery and snacks	0.5%	750	910
Processed fruit	0.4%	50	770
Other	0.3%	340	640
Total	*100%*	*73,930*	*193,590*

The chart below illustrates that, of the avoidable food and drink waste thrown away because too much has been cooked or prepared, nearly a quarter by cost consists of drinks (23.6%) and nearly one-fifth is made up of pre-prepared meals and snacks (18.1%). Overall, fruit and vegetables (both fresh and processed) account for one-eighth (12.2%) of the cost of avoidable food waste where too much is cooked or prepared.

Figure 12 The proportions of avoidable food and drink waste disposed of because too much is cooked or prepared, by cost



The table below details the annual cost of avoidable food waste thrown away because too much has been cooked or prepared.

Table 37 The proportions and annual cost of avoidable food and drink waste disposed of because too much is cooked or prepared

Type of food where too much is cooked or prepared	% of avoidable food waste cost	Cost (£M)	
		Council collected	Total
Drinks	23.6%	£0.0	£115.0
Pre-prepared meals and snacks	18.1%	£65.7	£88.4
Homemade meals and snacks	15.1%	£56.3	£73.9
Fresh vegetables and salads	7.5%	£29.7	£36.4
Meat and fish	7.0%	£26.9	£34.3
Dairy (including milk)	5.6%	£8.2	£27.4
Dried foods	4.8%	£8.2	£23.3
Condiments, sauces, herbs and spices	4.1%	£2.3	£20.2
Bakery	3.3%	£12.7	£16.2
Mixed meals and snacks (unidentified source)	2.7%	£10.2	£13.3
Processed vegetables and salads	2.4%	£5.6	£11.8
Fresh fruit	2.1%	£8.1	£10.1
Confectionery and snacks	1.5%	£6.2	£7.4
Desserts	1.4%	£1.7	£6.9
Other	0.5%	£1.1	£2.2
Processed fruit	0.2%	£0.2	£1.0
Total	*100%*	*£243.0*	*£487.9*

3.5 How much of the avoidable food and drink waste is thrown away whole or unused?

This section provides information on the cost and weight of the avoidable food waste items that were disposed of whole and those that were unused or unopened. 'Avoidable food waste' is defined as food that could have been eaten if it had not been allowed to go mouldy or spoilt, or if it had not been left over on a plate at the end of a meal, for example. Avoidable food waste excludes items that could not have been consumed, such as used teabags or meat bones, and waste that some people choose not to eat, such as potato or carrot peelings and bread crusts.

This analysis looks at the unused food waste in two ways: firstly it examines the amount of food thrown away in full packets where the contents are still intact – clearly this analysis will only cover foods disposed of in their packaging and will exclude items where the packaging has been removed but is still intact. The weight of the associated packaging is excluded from the analysis. The analysis then moves on to look at items thrown away whole as individual units within a pack or as individual items of foods (whether purchased in a pack or not) which are not eaten at all, such as an uneaten apple, two rolls in an original pack of four, a rasher of bacon or a full pot of yoghurt. This analysis covers items disposed of in packaging and items thrown away loose. It includes items that may not necessarily have been bought as an individual item (e.g. a whole grape which was originally purchased within a bunch).

This section only considers items of avoidable food waste thrown away by Scottish householders for collection by their local council – either within the residual bin or in the separate food waste container.

3.5.1 Which types of food and drink waste are thrown away in full packets?

Of all the avoidable food waste collected by the council, one-seventh (14.9%) by weight is disposed of in unused or unopened packets. The estimated number of full packs of food thrown away each year by Scottish households is more than 120 million, weighing 32,000 tonnes and costing £115 million. The most commonly thrown away full

packs are dairy items (25 million thrown away each year). By weight, fresh vegetables and salads make up the greatest proportion with more than 6000 tonnes of full packs of fresh vegetables and salads disposed of each year. Full packets of unused meat and fish account for the greatest cost at an estimated £28 million per year. The following table estimates the number, proportion, weight and cost of the different types of food thrown away each year by Scottish households unused and in full packets.

Table 38 The number, proportions, weight and cost of food and drink thrown away in full packets each year in Scotland

Food group thrown away for council collection in full packet	Number (millions) of full packs thrown away	% of avoidable food waste weight	% of avoidable food waste cost	Weight (tonnes) per year	Cost (£M) per year
Dairy	25.8	2.6%	2.5%	5540	£16.2
Meat and fish	14.6	1.9%	4.4%	4000	£27.9
Fresh vegetables and salads	14.5	2.9%	1.8%	6180	£11.8
Confectionery and snacks	14.4	0.5%	1.2%	1010	£7.4
Bakery	12.7	1.5%	1.2%	3280	£7.9
Pre-prepared meals and snacks	11.0	1.5%	2.3%	3300	£14.6
Condiments, sauces, herbs and spices	7.3	0.6%	1.0%	1230	£6.2
Dried foods	7.1	0.9%	1.0%	1950	£6.1
Desserts	5.7	0.5%	0.6%	1080	£3.8
Processed vegetables and salads	4.6	0.6%	0.5%	1330	£3.0
Fresh fruit	3.8	0.7%	0.7%	1480	£4.2
Drink	2.9	0.4%	0.6%	940	£4.0
Processed fruit	1.9	0.2%	0.3%	530	£1.7
Other	0.5	0.1%	0.1%	200	£0.8
Total full packets	*126.1*	*14.9%*	*18.1%*	*32,070*	*£115.5*

3.5.2 Which types of food and drink are thrown away whole and uneaten?

Of all the avoidable food waste disposed of whole and collected by the council, more than half (54.2%) by weight is disposed of whole and uneaten; this includes items not normally purchased as individual units, such as a slice or bread or a grape. Bakery items account for the greatest proportion of this waste – one-seventh (14.7%) of the weight of all avoidable food. Vegetables and salads make up a slightly lower proportion (13.7%) and fresh fruit thrown away whole makes up a further one-tenth (10.8%) of the weight of avoidable food waste. In terms of cost, nearly half (48.4%) of the avoidable food waste collected by the council is disposed of whole and uneaten, and meat and fish account for the largest proportion (11.4%). The following table estimates the weight and cost of the different types of food thrown away each year by Scottish households that are in whole and uneaten units.

Table 39 The proportions, weight and cost of food and drink thrown away whole and uneaten each year in Scotland

Food group thrown away in whole units for council collection	% of avoidable food waste weight	% of avoidable food waste cost	Weight (tonnes) per year	Cost (£M) per year
Bakery	14.7%	9.1%	31,570	£58.0
Fresh vegetables and salads	13.7%	7.5%	29,540	£48.1
Fresh fruit	10.8%	7.1%	23,290	£45.2
Meat and fish	4.8%	11.4%	10,390	£72.9
Dairy	3.4%	3.5%	7230	£22.3
Pre-prepared meals and snacks	2.1%	3.0%	4460	£19.3
Dried foods	1.0%	1.1%	2220	£7.0
Confectionery and snacks	0.9%	2.1%	2020	£13.2
Condiments, sauces, herbs and spices	0.6%	1.2%	1390	£7.6
Processed vegetables and salads	0.6%	0.5%	1330	£3.0
Desserts	0.6%	0.7%	1280	£4.6
Drinks	0.5%	0.6%	1020	£4.1
Processed fruit	0.3%	0.4%	690	£2.4
Other	0.1%	0.2%	220	£1.0
Total	*54.2%*	*48.4%*	*116,650*	*£308.6*

3.6 How much of the avoidable food and drink waste is thrown away in-date?

This section provides information on the cost and weight of the avoidable food waste items disposed of by households in Scotland before the food date has expired. This analysis can only be carried out on items put out for council collection which are disposed of in original packaging with a food date; therefore food thrown away outside of its original packaging before the food date has expired will not be included. Similarly, the analysis is only conducted on food and drink waste in full packaging; some foods must be consumed within 'x' days of opening (and this may be before the original food date) and there is no information on when partial packets have been thrown away. This means that the estimated proportions of food and drink waste disposed of 'in-date' will be under-estimated.

It should also be noted that the exact date of disposal is not known with regard to its relation to the date of waste collection, and therefore the model used to classify full packets as being in-date is as follows:

- food waste with food dates that fall on or after the date of collection is classified as 'in-date'; and
- food waste with food dates that fall prior to the day of collection is classified as 'out-of-date'.

Section 3.5.1 estimated the amount of food and drink waste thrown away in full packaging by Scottish households as weighing 32,000 tonnes and costing £115 million a year. An examination of the food date in relation to the collection date indicates that more than one-eighth (13.5%) by weight and just under one-sixth (16.2%) by cost was put out for council collection whilst 'in-date'.

Table 40 The proportion, weight and cost of food and drink thrown away in-date each year by households in Scotland

Food date	% weight of all full packs	% cost of all full packs	Weight (tonnes) per year	Cost (£M) per year
In-date	13.5%	16.2%	4340	£18.7
Out-of-date	86.5%	83.8%	27,730	£96.8
Total	*100%*	*100%*	*32,070*	*£115.5*

3.6.1 Which types of food and drink are thrown away in full packets and in-date?

Of all items put out for council collection that are in full packs and in-date, dairy items make up the greatest proportion by weight (15.7%), whilst meat and fish make up the greatest proportion by cost (25.9%). The following table gives the proportions and estimated weight and cost of full packets of food and drink thrown away in-date each year by households in Scotland.

Table 41 The proportions, weight and cost of food and drink thrown away in full packs and in-date by households each year in Scotland

Type of food	% in-date waste weight	% in-date waste cost	Weight (tonnes) per year	Cost (£M) per year
Dairy	15.7%	11.6%	680	£2.2
Pre-prepared meals and snacks	12.7%	15.2%	550	£2.8
Meat and fish	11.6%	25.9%	510	£4.8
Drinks	9.2%	5.4%	400	£1.0
Dried foods	9.0%	4.7%	390	£0.9
Fresh vegetables and salad	8.9%	4.0%	390	£0.7
Bakery	7.2%	4.7%	310	£0.9
Desserts	6.3%	5.6%	270	£1.1
Confectionery and snacks	5.6%	10.6%	240	£2.0
Other	4.2%	4.1%	180	£0.8
Condiments, sauces, herbs and spices	3.9%	4.1%	170	£0.8
Processed vegetables and salads	3.7%	2.2%	160	£0.4
Processed fruit	1.2%	1.1%	50	£0.2
Fresh fruit	0.7%	0.9%	30	£0.2
Total	*100%*	*100%*	*4340*	*£18.7*

3.6.2 Which types of food and drink waste are thrown away out-of-date?

More than one-fifth (21.3%) by weight of the food waste put out for council collection in full packs where the food date has expired is made up of fresh vegetables and salads. Meat and fish make up the greatest proportion (24.1%) by cost. The following table gives the proportions and estimated weight and cost thrown away out-of-date each year by households in Scotland.

Table 42 The proportions, weight and cost of different foods thrown away in full packs and out-of-date each year in Scotland

Type of food	% out-of-date waste weight	% out-of-date waste cost	Weight (tonnes) per year	Cost (£M) per year
Fresh vegetables and salad	21.3%	12.0%	5900	£11.6
Dairy	19.7%	16.3%	5450	£15.8
Meat and fish	12.8%	24.1%	3540	£23.4
Pre-prepared meals and snacks	9.9%	12.3%	2750	£11.9
Bakery	9.9%	6.9%	2730	£6.6
Dried foods	5.3%	5.1%	1480	£4.9
Fresh fruit	4.8%	3.7%	1320	£3.6
Processed vegetables and salad	4.3%	2.7%	1190	£2.6
Desserts	2.9%	3.0%	810	£2.9
Condiments, sauces, herbs and spices	2.8%	3.9%	780	£3.8
Confectionery and snacks	2.2%	5.1%	610	£4.9
Drinks	2.1%	3.1%	580	£3.0
Processed fruit	1.9%	1.7%	540	£1.7
Other	0.2%	0.2%	50	£0.2
Total	*100%*	*100%*	*27,730*	*£96.8*

3.7 Summary of chapter

This chapter has outlined the key characteristics of the 565,900 tonnes of Scottish food and drink waste produced each year.

- Food and drink waste is dominated by four categories – fresh vegetables and salads (20.2%), drinks (17.6%), fresh fruit (11.5%) and bakery (10.1%) – which together make up 336,300 tonnes or six-tenths (59.4%) of the total.

- More than two-thirds (68.8%) by weight and nearly three-quarters (73.5%) by cost is avoidable, i.e. it could have been eaten had it been more effectively planned, stored and managed, and this costs Scottish households nearly £1 billion a year.

- Approximately half (50.2% by weight and 51.0% by cost) of the avoidable food waste is accounted for by items that have not been used in time or are no longer wanted. The remainder is mostly due to too much being cooked or prepared.

- One-seventh (14.9%) by weight of the food and drink waste put out for council collection is thrown away whole and unused/unopened packs. This waste is dominated by fresh vegetables and salads.

- Approximately half (54.2% by weight and 48.4% by cost) of the council-collected food and drink waste consists of individual items that have been thrown away whole (but may not have been purchased as individual units). This is dominated by bakery items (14.7% of all avoidable food waste weight) and fresh vegetables and salads (13.7%).

- Where council-collected food and drink waste was found in full packaging that carried a food date, dairy items (15.7% by weight) and meat and fish (25.9% by cost) were most commonly thrown away before the food date had expired. Overall, more than one-eighth (13.5%) by weight and just under one-sixth (16.2%) by cost of all food waste disposed of in full packs is put out for council collection before the food date has expired.

The following 11 chapters (4-15) look in more detail at the different food groups thrown away in Scotland. As previously described in Section 1.2, an individual food type that was estimated to occur below 1800 tonnes was rolled up into the "other" category for a particular food group chapter.

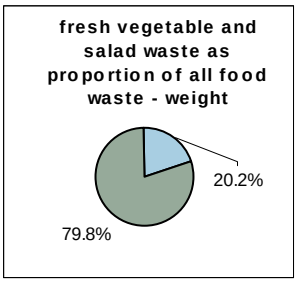
For food groups that were found at relatively low occurrences e.g. desserts, confectionary and snacks, the majority of individual food types used in the original classification were below the 1800 tonnes threshold. It was decided to combine these observations into a separate "other food group" chapter (Chapter 15) and not report at the individual food type level.

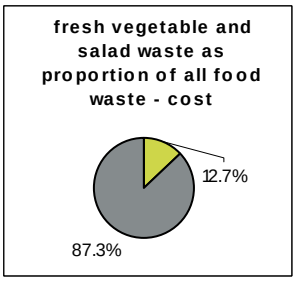
4 Fresh vegetable and salad waste

Figure 13 Examples of fresh vegetable and salad waste found in household bins in Scotland

4.1 What types of fresh vegetable and salad waste do households throw away?

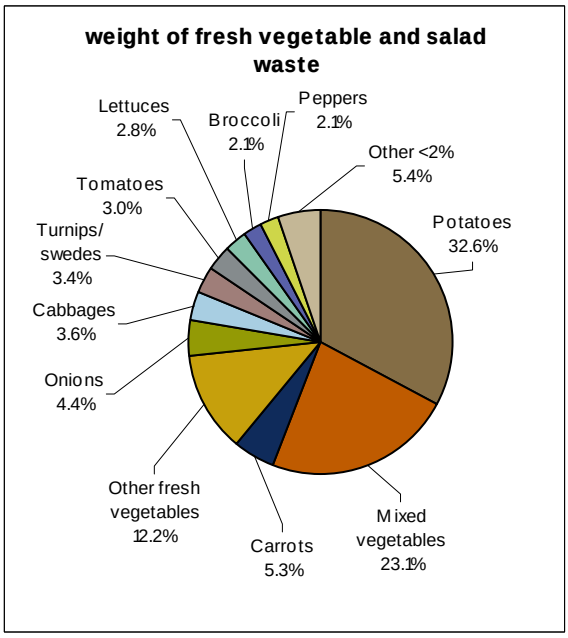
4.1.1 Types of fresh vegetable and salad waste

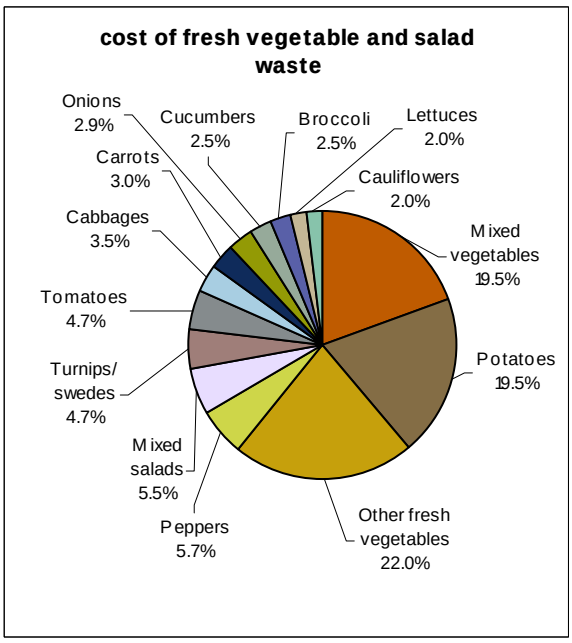




Fresh vegetable and salad waste accounts for 20.2% of the weight and 12.7% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). Fresh vegetable and salad waste, as opposed to processed vegetable and salad waste, is of particular interest due to its intrinsic perishability. In fact the majority (84.0%) of vegetable and salad waste is fresh.

Figures 14 and 15 How different types of food make up fresh vegetable and salad waste





The above charts illustrate that, of the fresh vegetable and salad waste generated, nearly one-third (32.6%) by weight is made up of potatoes and nearly a quarter (23.1%) is mixed. In terms of cost, mixed vegetables and potatoes both make up one-fifth (19.5% each).

The tables below give the proportions, annual weight (Table 43) and annual cost (Table 44) of each food type making up fresh vegetable and salad waste in Scotland. The proportions relate to all methods of disposal.

Table 43 The proportions and estimated annual weight of fresh vegetable and salad waste from households in Scotland

Type of fresh vegetable and salad	% of all fresh vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Potatoes	32.6	30,850	37,260
Mixed vegetables	23.1	22,100	26,340
Other fresh vegetable and salad[15]	12.2	11,500	13,890
Carrots	5.3	5000	6040
Onions	4.4	4240	5060
Cabbages	3.6	3380	4060
Turnips/swedes	3.4	3210	3830
Tomatoes	3.0	2860	3450
Lettuces	2.8	2610	3150
Broccoli	2.1	2060	2450
Peppers	2.1	2020	2400
Cucumbers	1.9	1830	2210
Mixed salads	1.8	1710	2050
Cauliflowers	1.7	1640	1990
Total	*100% (20.2% of all waste)*	*95,010*	*114,180*

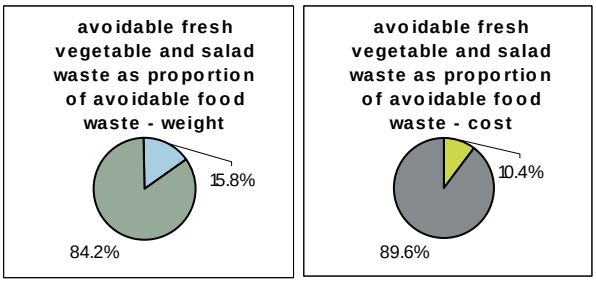
Table 44 The proportions and estimated annual cost of fresh vegetable and salad waste from households in Scotland

Type of fresh vegetable and salad	% of all fresh vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Other fresh vegetable and salad	22.0%	£31.3	£37.7
Potatoes	19.5%	£27.7	£33.5
Mixed vegetables	19.5%	£28.0	£33.5
Peppers	5.7%	£8.3	£9.9
Mixed salads	5.5%	£7.8	£9.5
Tomatoes	4.7%	£6.6	£8.0
Turnips/swedes	4.7%	£6.8	£8.1
Cabbages	3.5%	£5.0	£6.0
Carrots	3.0%	£4.3	£5.2
Onions	2.9%	£4.2	£5.0
Cucumbers	2.5%	£3.5	£4.4
Broccoli	2.5%	£3.6	£4.3
Lettuces	2.0%	£2.9	£3.5
Cauliflowers	2.0%	£2.8	£3.5
Total	*100% (12.7% of all waste)*	*£142.8*	*£172.1*

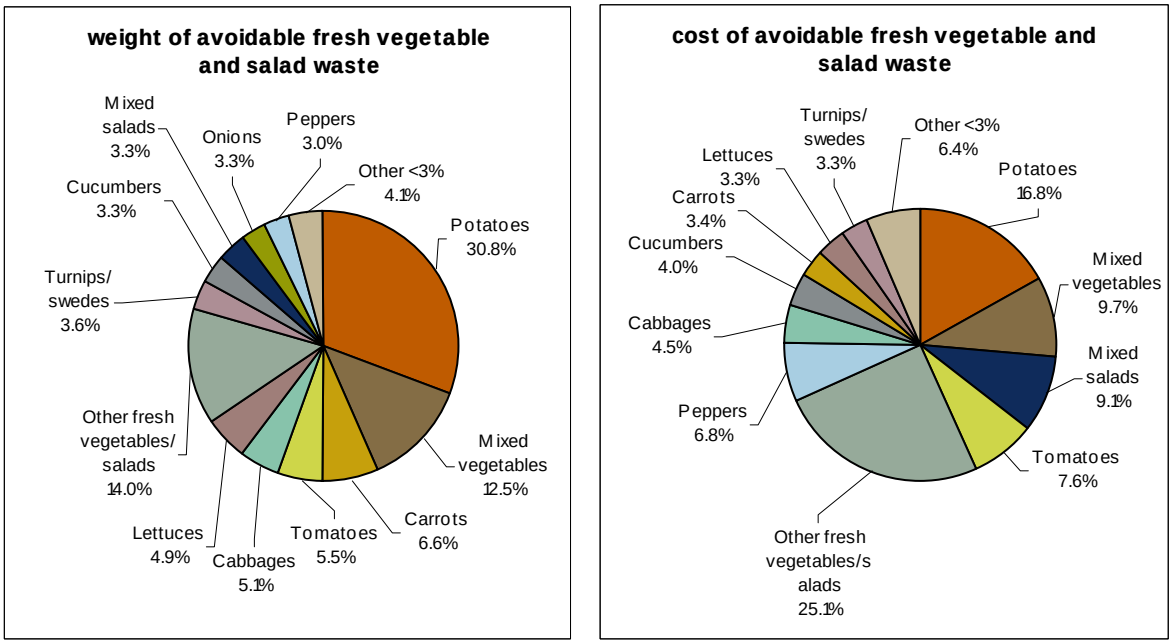
[15] *Comprises Sweetcorn, Leeks, Mushrooms, Celery, Brussel sprouts, Parsnips, Beetroot, Courgettes, Spring onions, Beans, Peas, Spinach, Aubergines and unclassified salads and unclassified vegetables. Unclassified salads and unclassified vegetables refers to individual items that were rare in occurrence and/or could not be classified during the sort process*

4.1.2 *Types of avoidable fresh vegetable and salad waste*

Fresh vegetable and salad waste accounts for 15.8% of the weight and 10.4% of the cost of avoidable food waste (i.e. food that could have been consumed if it had been better managed or stored) thrown away by Scottish households.



Figures 16 and 17 How different types of food make up avoidable fresh vegetable and salad waste



The above charts illustrate that, of the avoidable fresh vegetable and salad waste generated, in terms of weight, three-tenths (30.8%) is made up of potatoes and a further one-eighth (12.5%) is mixed vegetables. In terms of cost, one-sixth (16.8%) of avoidable fresh vegetable and salad waste consists of potatoes. The tables below give the proportions, annual weight (Table 49) and annual cost (Table 50) of each food type making up avoidable fresh vegetable and salad waste in Scotland.

Table 45 The proportions and estimated annual weight of avoidable fresh vegetable and salad waste from households in Scotland

Type of fresh vegetable and salad	% of avoidable fresh vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Potatoes	30.8%	15,760	18,940
Other fresh vegetable and salad	14.0%	7150	8620
Mixed vegetables	12.5%	6480	7720
Carrots	6.6%	3370	4070
Tomatoes	5.5%	2790	3370
Cabbages	5.1%	2590	3120
Lettuces	4.9%	2530	3040
Turnips/swedes	3.6%	1880	2240
Cucumbers	3.3%	1700	2060
Mixed salads	3.3%	1680	2020
Onions	3.3%	1690	2020
Peppers	3.0%	1550	1840
Broccoli	2.5%	1280	1530
Cauliflowers	1.6%	810	1000
Total	*100% (15.8% of avoidable waste)*	*51,260*	*61,590*

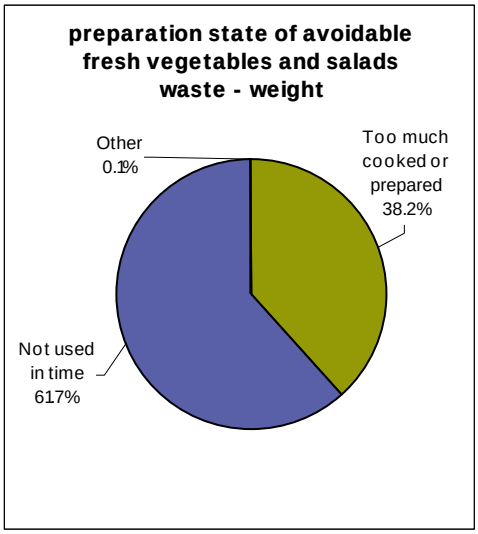
Table 46 The proportions and estimated annual cost of avoidable fresh vegetable and salad waste from households in Scotland

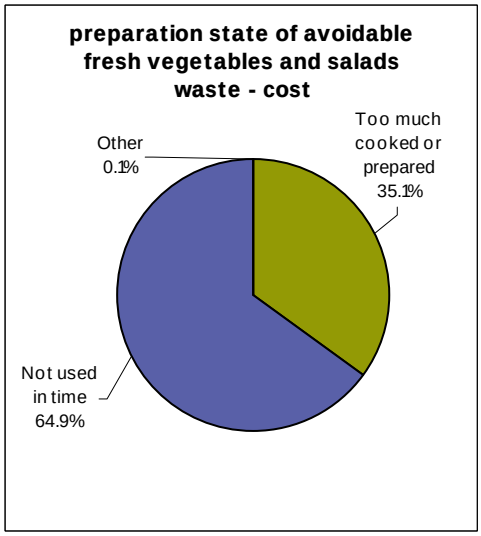
Type of fresh vegetable and salad	% of avoidable fresh vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Other fresh vegetable and salads	25.1%	£21.5	£25.8
Potatoes	16.8%	£14.5	£17.5
Mixed vegetables	9.7%	£8.4	£10.1
Mixed salads	9.1%	£7.8	£9.5
Tomatoes	7.6%	£6.6	£7.9
Peppers	6.8%	£5.9	£7.0
Cabbages	4.5%	£3.9	£4.7
Cucumbers	4.0%	£3.3	£4.1
Carrots	3.4%	£2.9	£3.5
Lettuces	3.3%	£2.8	£3.4
Turnips/swedes	3.3%	£2.9	£3.4
Broccoli	2.7%	£2.3	£2.8
Onions	2.0%	£1.8	£2.1
Cauliflowers	1.7%	£1.4	£1.8
Total	*100% (10.4% of avoidable waste)*	*£86.0*	*£103.6*

4.2 In what food preparation state is avoidable fresh vegetable and salad waste thrown away?

4.2.1 Food preparation state of avoidable fresh vegetable and salad waste

Figures 18 and 19 How different food preparation states make up avoidable fresh vegetable and salad waste





The above charts illustrate that, of the avoidable fresh vegetable and salad waste generated, more than six-tenths (61.7%) by weight is made up of items not used in time and nearly four-tenths (38.2%) is wasted because too much has been cooked or prepared. In terms of cost, nearly two-thirds (64.9%) is made up of items not used in time and more than one-third (35.1%) is wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 47) and annual cost (Table 48) of fresh vegetable and salad waste in Scotland by food preparation state.

Table 47 The proportions and estimated annual weight of avoidable fresh vegetable and salad waste from households in Scotland by food preparation state

Food preparation state	% of avoidable fresh vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	61.7%	31,860	38,000
Too much cooked or prepared	38.2%	19,370	23,550
Other	0.1%	30	40
Total	*100%*	*51,260*	*61,590*

Table 48 The proportions and estimated annual cost of avoidable fresh vegetable and salad waste from households in Scotland by food preparation state

Food preparation state	% of avoidable fresh vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Not used in time	64.9%	£56.3	£67.3
Too much cooked or prepared	35.1%	£29.7	£36.4
Other	0.1%	£0.1	£0.1
Total	*100%*	*£86.0*	*£103.8*

4.2.2 *What types of avoidable fresh vegetable and salad waste are thrown away because they are not used in time?*

Potatoes make up more than one-third (36.3%) of the fresh vegetables and salads thrown away because they are not used in time. Carrots account for a further one-tenth (9.9%). The table below gives the proportions and annual weight of avoidable fresh vegetable and salad waste disposed of by households in Scotland because it is not used in time.

Table 49 The proportions and estimated annual weight of avoidable fresh vegetable and salad waste from households in Scotland not used in time

Type of fresh vegetable and salad not used in time	% of avoidable fresh vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Potatoes	36.3%	11,560	13,790
Other vegetable and salad	13.7%	4400	5290
Carrots	9.9%	3130	3740
Tomatoes	7.5%	2390	2840
Lettuces	5.5%	1740	2070
Onions	4.5%	1430	1700
Cabbages	4.0%	1260	1500
Mixed salads	3.7%	1190	1410
Peppers	3.7%	1190	1410
Cucumbers	3.4%	1090	1300
Broccoli	2.7%	850	1010
Turnips/swedes	2.6%	830	990
Mixed vegetables	1.5%	490	580
Cauliflowers	1.0%	310	370
Total	*100%*	*31,860*	*38,000*

Potatoes account for nearly one-fifth (19.2%) of the cost of fresh vegetable and salad waste thrown away because it is not used in time or is no longer wanted. Mixed salads and tomatoes each account for a further one-tenth (10.8% and 10.2% respectively) of the cost. The table below gives the proportions and annual cost of avoidable fresh vegetable and salad waste disposed of by households in Scotland because it is not used in time.

Table 50 The proportions and estimated annual cost of avoidable fresh vegetable and salad waste from households in Scotland not used in time

Type of fresh vegetable and salad not used in time	% of avoidable fresh vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Other fresh vegetable and salad	25.9%	£14.6	£17.4
Potatoes	19.2%	£10.8	£12.9
Mixed salads	10.8%	£6.1	£7.3
Tomatoes	10.2%	£5.7	£6.9
Peppers	8.0%	£4.5	£5.4
Carrots	4.8%	£2.7	£3.2
Cucumbers	3.9%	£2.2	£2.6
Lettuces	3.6%	£2.0	£2.4
Cabbages	3.4%	£1.9	£2.3
Broccoli	2.8%	£1.6	£1.9
Onions	2.6%	£1.5	£1.8
Mixed vegetables	2.1%	£1.2	£1.4
Turnips/swedes	1.8%	£1.0	£1.2
Cauliflowers	0.9%	£0.5	£0.6
Total	*100%*	*£56.3*	*£67.3*

4.2.3 What types of avoidable fresh vegetable and salad waste are thrown away because too much has been cooked or prepared?

Mixed vegetables make up three-tenths (30.4%) by weight of avoidable fresh vegetable and salad waste disposed of because too much has been cooked or prepared. Potatoes account for more than one-fifth (22.5%). The table below gives the proportions and annual weight of avoidable fresh vegetable and salad waste disposed of by households in Scotland because too much is cooked or prepared.

Table 51 The proportions and estimated annual weight of avoidable fresh vegetable and salad waste from households in Scotland disposed of because too much is cooked or prepared

Type of fresh vegetable and salad where too much is cooked or prepared	% of avoidable fresh vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Mixed vegetables	30.4%	5990	7160
Potatoes	22.5%	4200	5300
Other fresh vegetable and salad	14.1%	2730	3270
Cabbages	6.8%	1330	1600
Turnips/swedes	5.3%	1050	1260
Lettuces	4.0%	790	950
Cucumbers	3.1%	610	740
Mixed salads	2.7%	490	630
Cauliflowers	2.5%	490	590
Broccoli	2.3%	440	540
Tomatoes	2.0%	400	480
Peppers	1.7%	350	410
Onions	1.4%	260	330
Carrots	1.2%	240	290
Total	*100%*	*19,370*	*23,550*

Mixed vegetables account for nearly a quarter (23.9%) of the cost of the fresh vegetables and salads thrown away because too much has been cooked or prepared. Potatoes make up a further one-eighth (12.9%) of the

cost. The table below gives the proportions and annual cost of avoidable fresh vegetable and salad waste disposed of by households in Scotland because too much is cooked or prepared.

Table 52 The proportions and estimated annual cost of avoidable fresh vegetable and salad waste from households in Scotland disposed of because too much is cooked or prepared

Type of fresh vegetable and salad where too much is cooked or prepared	% of avoidable fresh vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Mixed vegetables	23.9%	£7.2	£8.7
Other fresh vegetable and salad	22.7%	£7.0	£8.2
Potatoes	12.9%	£3.7	£4.7
Mixed salads	6.7%	£1.7	£2.4
Cabbages	6.5%	£2.0	£2.4
Turnips/swedes	6.1%	£1.8	£2.2
Peppers	4.3%	£1.3	£1.6
Cucumbers	4.0%	£1.2	£1.5
Cauliflowers	2.9%	£0.9	£1.0
Lettuces	2.8%	£0.8	£1.0
Tomatoes	2.8%	£0.8	£1.0
Broccoli	2.7%	£0.8	£1.0
Onions	1.0%	£0.3	£0.4
Carrots	0.7%	£0.2	£0.3
Total	*100%*	*£29.7*	*£36.4*

4.3 What fresh vegetable and salad items are thrown away in full packs and in-date?

Of the fresh vegetable and salad waste thrown away via council collections in full packs, more than one-twentieth by weight and cost (6.1% and 6.0% respectively) is in-date. The following table outlines the proportion of fresh vegetable and salad food waste in full packs and in-date when disposed of.

Table 53 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of fresh vegetables and salads	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	6.1%	6.0%	390	£0.7
Out-of-date	93.9%	94.0%	5900	£11.6
Total full packs	*100%*	*100%*	*6290*	*£12.4*

4.4 Summary of chapter

This chapter has described in detail the amount and cost of fresh vegetable and salad waste produced by households in Scotland.

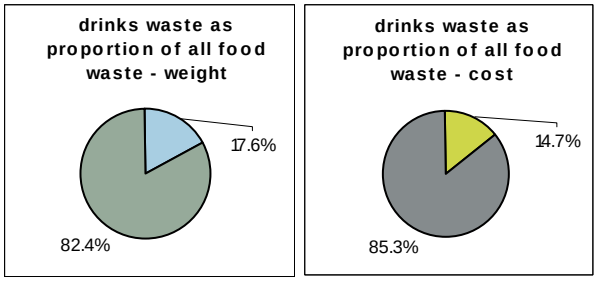
- Potatoes are the most commonly disposed of food in this category, making up three-tenths (30.8%) of the weight of all avoidable fresh vegetable and salad waste. This potato waste weighs nearly 19,000 tonnes and costs Scottish households more than £17 million each year.
- More than six-tenths (61.7% by weight and 64.9% by cost) of the fresh vegetable and salad waste is thrown away because it is not used in time or is no longer wanted. Potatoes are the food most commonly thrown away for this reason.
- Of all the fresh vegetables and salads disposed of in full packs via council collections, more than one-twentieth by weight and cost (6.1% and 6.0% respectively) are thrown away before the food date expires.

5 Drinks waste

Figure 20 Examples of drinks waste found in household bins in Scotland

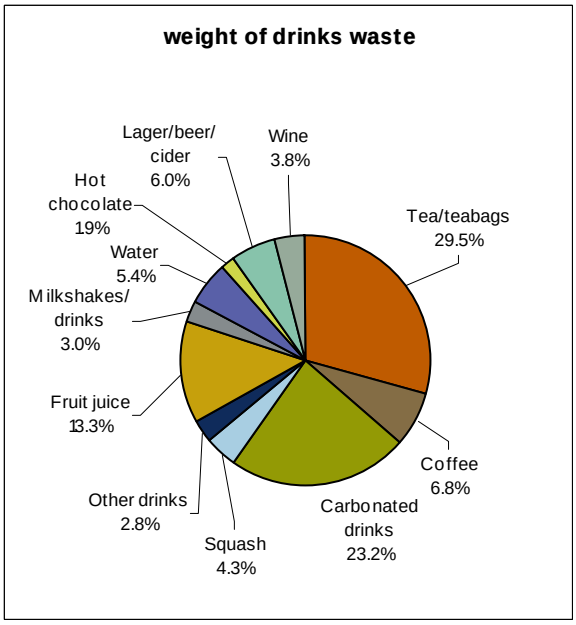
5.1 What types of drinks waste do households throw away?

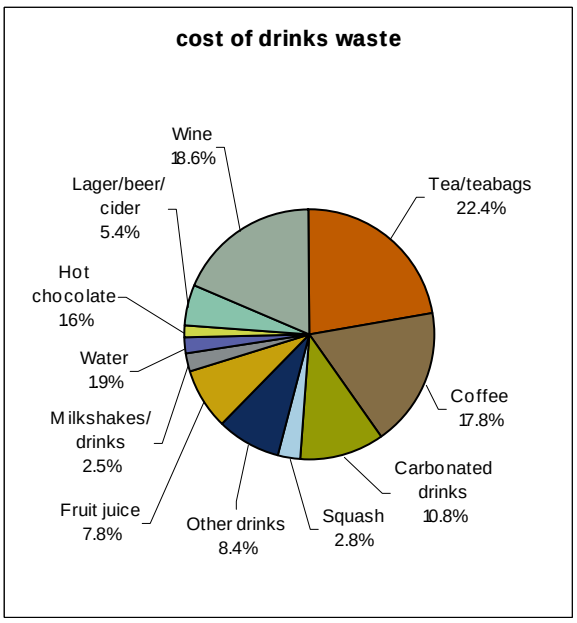
5.1.1 Types of drinks waste



Drinks waste accounts for 17.6% of the weight and 14.7% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). The weight and cost of added water (e.g. water used to dilute a glass of orange squash that is poured down the sink) and any associated drink packaging is excluded from this analysis.

Figures 21 and 22 How different types of food make up drinks waste





The above charts illustrate that, of the drinks waste generated, three-tenths (29.5%) by weight is made up of tea/teabags. Carbonated drinks make up nearly a quarter (23.2%) of the weight. In terms of cost, tea/teabags account for more than one-fifth (22.4%) and wine and coffee each make up more than one-sixth (18.6% and 17.8% respectively). The tables below give the proportions, annual weight (Table 54) and annual cost (Table 55) of each food type making up drinks waste in Scotland. The proportions relate to all methods of disposal.

Table 54 The proportions and estimated annual weight of drinks waste from households in Scotland

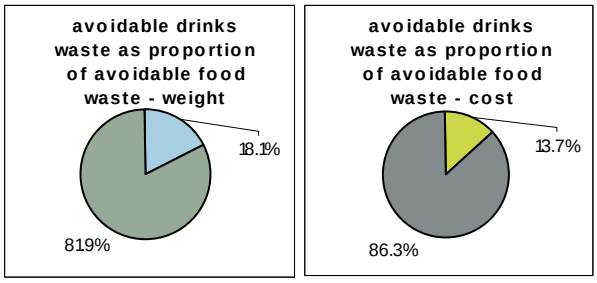
Type of drink	% of all drinks waste weight	Weight (tonnes)	
		Council collected	Total
Tea/teabags	29.5%	21,240	29,390
Carbonated drinks	23.2%	2140	23,090
Fruit juice	13.3%	1010	13,270
Coffee	6.8%	500	6750
Lager/beer/cider	6.0%	0	5970
Water	5.4%	900	5410
Squash	4.3%	240	4300
Wine	3.8%	0	3760
Milkshakes/drinks	3.0%	270	2940
Other drinks[16]	2.8%	770	2760
Hot chocolate	1.9%	0	1910
Total	*100% (17.6% of all waste)*	*27,070*	*99,550*

Table 55 The proportions and estimated annual cost of drinks waste from households in Scotland

Type of drink	% of all drinks waste cost	Cost (£M)	
		Council collected	Total
Tea/teabags	22.4%	£31.0	£44.8
Wine	18.6%	£0.0	£37.2
Coffee	17.8%	£4.9	£35.6
Carbonated drinks	10.8%	£3.5	£21.6
Other drinks	8.4%	£3.5	£16.7
Fruit juice	7.8%	£1.6	£15.6
Lager/beer/cider	5.4%	£0.0	£10.8
Squash	2.8%	£0.3	£5.7
Milkshakes/drinks	2.5%	£0.5	£4.9
Water	1.9%	£0.6	£3.8
Hot chocolate	1.6%	£0.0	£3.1
Total	*100% (14.7% of avoidable waste)*	*£45.9*	*£199.8*

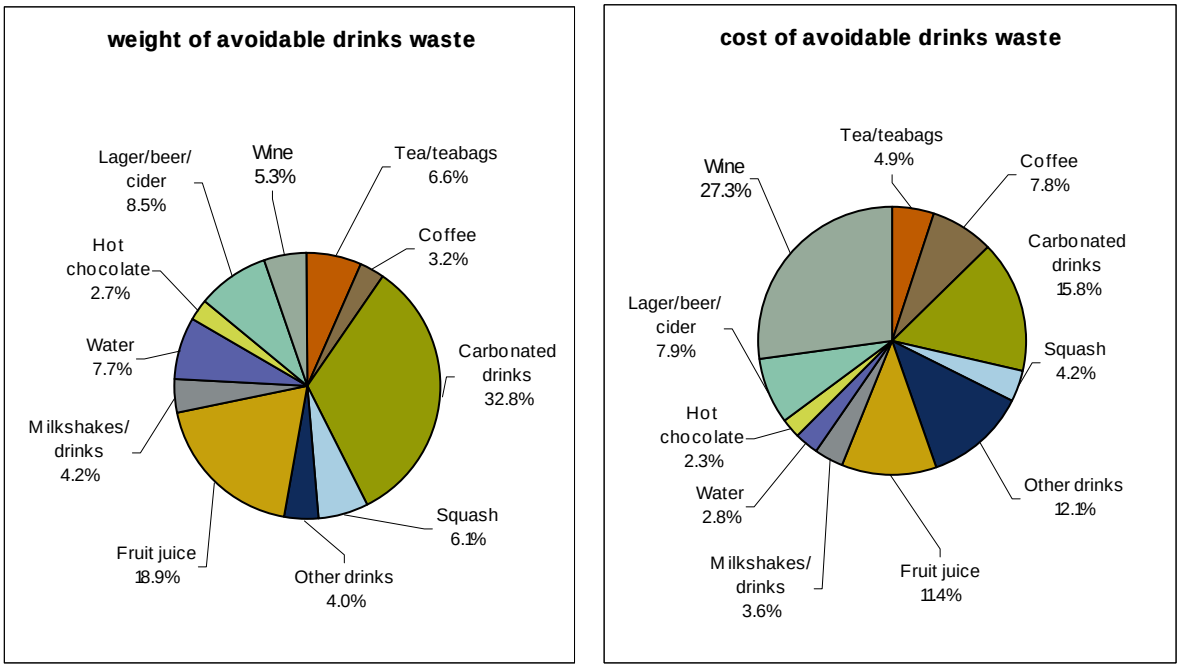
5.1.2 Types of avoidable drinks waste

Drinks waste accounts for 18.1% of the weight and 13.7% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households, regardless of disposal method.



[16] *"Other drinks" comprises spirits and alcopops, isotonic/energy drinks, as well as individual drinks that were rare in occurrence and/or could not be classified during the sort analysis, or had too little information provided in the food diary*

Figures 23 and 24 How different types of food make up avoidable drinks waste



The above charts illustrate that, of the avoidable drinks waste generated, in terms of weight, nearly one-third (32.8%) is made up of carbonated drinks. Fruit juices make up nearly one-fifth (18.9%) of the weight. In terms of cost, wine accounts for more than a quarter (27.2%) and carbonated drinks make up nearly one-sixth (15.8%). The tables below give the proportions, annual weight (Table 56) and annual cost (Table 57) of each food type making up avoidable drinks waste in Scotland.

Table 56 The proportions and estimated annual weight of avoidable drinks waste from households in Scotland

Type of drink	% of avoidable drinks waste weight	Weight (tonnes)	
		Council collected	Total
Carbonated drinks	32.8%	2140	23,090
Fruit juice	18.9%	1010	13,270
Lager/beer/cider	8.5%	0	5970
Water	7.7%	900	5410
Tea/teabags[17]	6.6%	50	4640
Squash	6.1%	240	4300
Wine	5.3%	0	3760
Milkshakes/drinks	4.2%	270	2940
Other drinks	4.0%	780	2780
Coffee	3.2%	30	2220
Hot chocolate	2.7%	0	1910
Total	*100% (18.1% of avoidable waste)*	*5420*	70,290

[17] *avoidable tea leaves/bags are those which were identified as having not being prepared/used prior to disposal*

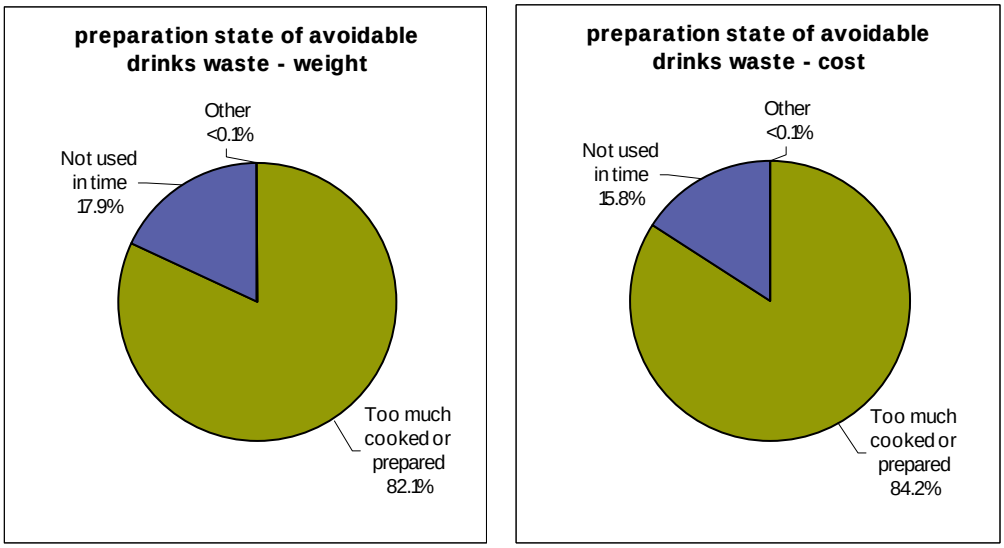
Table 57 The proportions and estimated annual cost of avoidable drinks waste from households in Scotland

Type of drink	% of avoidable drinks waste cost	Cost (£M)	
		Council collected	Total
Wine	27.2%	£0.0	£37.2
Carbonated drinks	15.8%	£3.5	£21.6
Other drinks	12.1%	£3.5	£16.7
Fruit juice	11.4%	£1.6	£15.6
Lager/beer/cider	7.9%	£0.0	£10.8
Coffee	7.8%	£0.4	£10.6
Tea/teabags	4.9%	£0.2	£6.7
Squash	4.2%	£0.3	£5.7
Milkshakes/drinks	3.6%	£0.5	£4.9
Water	2.8%	£0.6	£3.8
Hot chocolate	2.3%	£0.0	£3.1
Total	*100% (13.7% of avoidable waste)*	*£10.6*	*£136.7*

5.2 In what food preparation state is avoidable drinks waste thrown away?

5.2.1 Food preparation state of avoidable drinks waste

Figures 25 and 26 How different food preparation states make up avoidable drinks waste



The above charts illustrate that, of the avoidable drinks waste generated, more than eight-tenths (82.1%) by weight is made up of items wasted because too much has been cooked or prepared[18]. Less than one-fifth (17.9%) is not used in time[19]. In terms of cost, more than eight-tenths (84.2%) is made up of items wasted because too much has been cooked or prepared. Less than one-sixth (15.8%) by cost is not used in time. The tables below give the proportions, annual weight (Table 58) and annual cost (Table 59) of drinks waste by food preparation state in Scotland.

[18] "Too much has been cooked/prepared" refers to drink waste from the household diary research that had been cooked or served in the home and then subsequently disposed of e.g a cup of coffee, a poured glass of fruit juice or carbonated drink. For practical reasons of collection this classification of avoidable drinks waste is not available for local authority collected waste.

[19] "Not used in time" refers to drink waste that remains in their original container and was judged no longer wanted or had gone off e.g half a bottle of cola drink.

Table 58 The proportions and estimated annual weight of avoidable drinks waste from households in Scotland by food preparation state

Food preparation state	% of avoidable drinks waste weight	Weight (tonnes)	
		Council collected	Total
Too much cooked or prepared	82.1%	0	57,690
Not used in time	17.9%	5420	12,580
Other	<0.1%	0	10
Total	*100%*	*5420*	*70,290*

Table 59 The proportions and estimated annual cost of avoidable drinks waste from households in Scotland by food preparation state

Food preparation state	% of avoidable drinks waste cost	Cost (£M)	
		Council collected	Total
Too much cooked or prepared	84.2%	£0.0	£115.0
Not used in time	15.8%	£10.6	£21.6
Other	<0.1%	£0.0	£0.0
Total	*100%*	*£10.6*	*£136.7*

5.2.2 What types of avoidable drinks waste are thrown away because they are not used in time?

Fruit juice makes up four-tenths (39.4%) by weight of the drinks thrown away because they are not used in time. Carbonated drinks account for a quarter (25.2%). The table below gives the proportions and annual weight of avoidable drinks waste disposed of by households in Scotland because it is not used in time.

Table 60 The proportions and estimated annual weight of avoidable drinks waste from households in Scotland not used in time

Type of drink not used in time	% of avoidable drinks waste weight	Weight (tonnes)	
		Council collected	Total
Fruit juice	39.4%	1010	4890
Carbonated drinks	25.2%	2140	3170
Milkshakes/drinks	12.6%	270	1590
Water	8.5%	900	1070
Other drinks	6.1%	780	930
Squash	4.6%	240	590
Wine	1.2%	0	160
Tea/teabags	0.9%	50	50
Lager/beer/cider	0.8%	0	100
Coffee	0.7%	30	30
Total	*100%*	*5420*	*12,580*

Collectively, the drinks waste categorised as 'other drinks' makes up the greatest proportion of the cost of drinks not used in time. This may be a reflection of this category including relatively expensive items such as isotonic/energy drinks. Carbonated drinks make up more than one-sixth (18.9%) of the cost of the drinks thrown away because they are not used in time. The table below gives the proportions and annual cost of avoidable drinks waste disposed of by households in Scotland because it is not used in time.

Table 61 The proportions and estimated annual cost of avoidable drinks waste from households in Scotland not used in time

Type of drink not used in time	% of avoidable drinks waste cost	Cost (£M)	
		Council collected	Total
Other drinks	44.2%	£3.5	£9.4
Carbonated drinks	18.9%	£3.5	£4.1
Milkshakes/drinks	10.7%	£0.5	£2.3
Fruit juice	8.4%	£1.6	£1.8
Wine	7.1%	£0.0	£1.5
Squash	3.5%	£0.3	£0.8
Water	3.5%	£0.6	£0.8
Coffee	2.6%	£0.5	£0.6
Lager/beer/cider	0.8%	£0.0	£0.2
Tea/teabags	0.3%	£0.1	£0.1
Total	*100%*	*£10.6*	*£21.6*

5.2.3 What types of avoidable drinks waste are thrown away because too much has been prepared?

Carbonated drinks make up more than one-third (34.5%) by weight of avoidable drinks waste disposed of because too much has been prepared. Fruit juices make up a further one-seventh (14.5%) of the weight. The table below gives the proportions and annual weight of avoidable drinks waste disposed of by households in Scotland because too much is prepared.

Table 62 The proportions and estimated annual weight of avoidable drinks waste from households in Scotland disposed of because too much is prepared

Type of drink where too much is prepared	% of avoidable drinks waste weight	Weight (tonnes)	
		Council collected	Total
Carbonated drinks	34.5%	0	19,910
Fruit juice	14.5%	0	8370
Lager/beer/cider	10.2%	0	5870
Tea/teabags	8.0%	0	4590
Water	7.5%	0	4330
Squash	6.4%	0	3710
Wine	6.2%	0	3600
Coffee	3.8%	0	2190
Hot chocolate	3.3%	0	1910
Milkshakes/drinks	2.3%	0	1350
Other drinks	3.3%	0	1860
Total	*100%*	*0*	*57,690*

Wine makes up more than three-tenths (31.0%) by cost of avoidable drinks waste disposed of because too much has been prepared. Carbonated drinks make up more than one-seventh (15.2%) of the cost. The table below gives the proportions and annual cost of avoidable drinks waste disposed of by households in Scotland because too much is prepared.

Table 63 The proportions and estimated annual cost of avoidable drinks waste from households in Scotland disposed of because too much is prepared

Type of drink where too much is prepared	% of avoidable drinks waste cost	Cost (£M)	
		Council collected	Total
Wine	31.0%	£0.0	£35.7
Carbonated drinks	15.2%	£0.0	£17.5
Fruit juice	12.0%	£0.0	£13.8
Lager/beer/cider	9.2%	£0.0	£10.6
Coffee	8.9%	£0.0	£10.2
Other drinks	6.1%	£0.0	£7.1
Tea/teabags	5.6%	£0.0	£6.4
Squash	4.3%	£0.0	£4.9
Water	2.7%	£0.0	£3.1
Hot chocolate	2.7%	£0.0	£3.1
Milkshakes/drinks	2.3%	£0.0	£2.6
Total	*100%*	*£0.0*	*£115.1*

5.3 What drinks items are thrown away in full packs and in-date?

Of the drinks waste thrown away for council collection in full packs, more than four-tenths (41.1%) by weight and a quarter (25.3%) by cost is in-date. The following table provides the proportion of drinks waste in full packs and in-date when disposed of.

Table 64 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of drinks	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	41.1%	25.3%	400	£1.0
Out-of-date	58.9%	74.7%	580	£3.0
Total full packs	*100%*	*100%*	*980*	*£4.0*

5.4 Summary of chapter

This chapter has described in detail the amount and cost of drinks waste produced by households in Scotland.

- Carbonated drinks are the most commonly disposed of drinks, making up more than three-tenths (32.8%) of the weight of all avoidable drinks waste. Carbonated drinks waste weighs 23,000 tonnes and costs Scottish households more than £20 million each year.

- More than eight-tenths (82.1% by weight and 84.2% by cost) of the total drinks waste is thrown away because too much has been prepared or served[20]. The drinks most commonly thrown away for this reason are carbonated drinks.

- Of all the drinks waste disposed of in full packs via council collections, more than four-tenths (41.1%) by weight and a quarter (25.3%) by cost is thrown away before the food date expires.

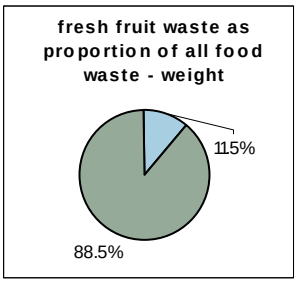
[20] *"Too much has been cooked/prepared" refers to drink waste from the household diary research that had been cooked or served in the home and then subsequently disposed of e.g a cup of coffee, a poured glass of fruit juice or carbonated drink. For practical reasons of collection this classification of avoidable drinks waste is not available for local authority collected waste.*

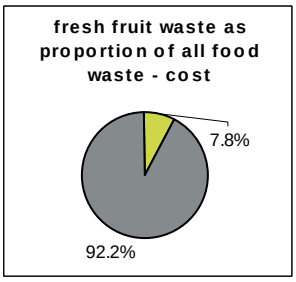
6 Fresh fruit waste

Figure 27 Examples of fresh fruit waste found in household bins in Scotland

6.1 What types of fresh fruit waste do households throw away?

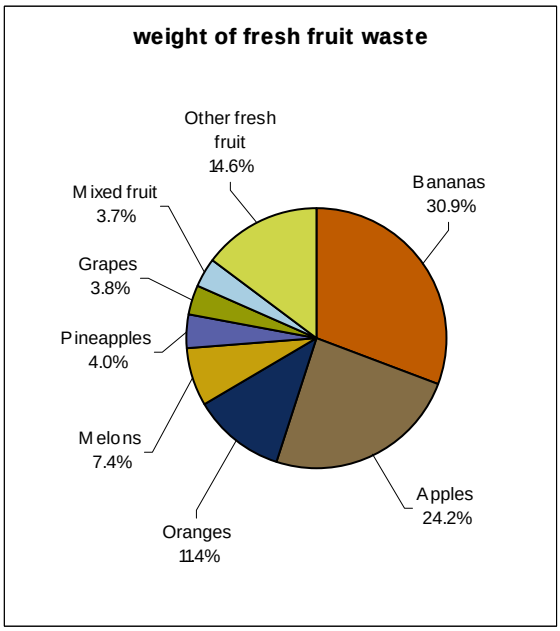
6.1.1 Types of fresh fruit waste

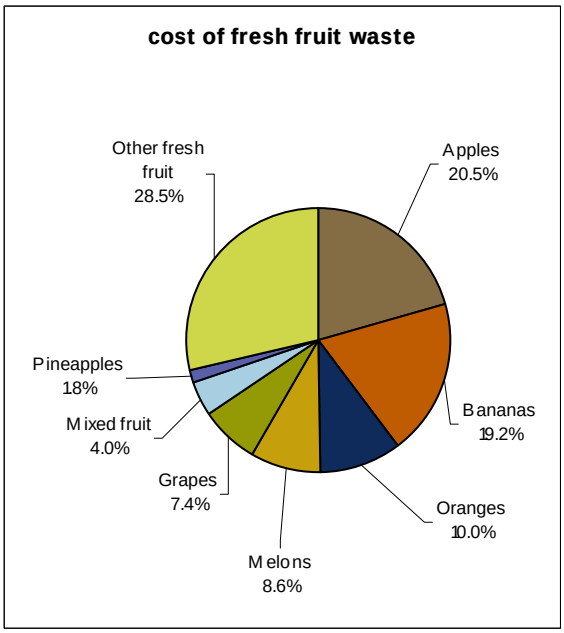




Fresh fruit waste accounts for 11.5% of the weight and 7.8% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). Fresh fruit waste, as opposed to processed fruit waste, is of particular interest due to its intrinsic perishability and the fact that it makes up a key part of recommended 'five-a-day' consumption. This study has identified that fresh fruit makes up the vast majority (94.8%) of total waste fruit (fresh and preserved).

Figures 28 and 29 How different types of food make up fresh fruit waste





The above charts illustrate that, of the fresh fruit waste generated, three-tenths (30.9%) by weight is made up of bananas and a further quarter (24.2%) consists of apples. In terms of cost, one-fifth is made up by apples (20.5%) and by bananas (19.2%).

The tables below give the proportions, annual weight (Table 65) and annual cost (Table 66) of each food type making up fresh fruit waste in Scotland. The proportions relate to all methods of disposal.

Table 65 The proportions and estimated annual weight of fresh fruit waste from households in Scotland

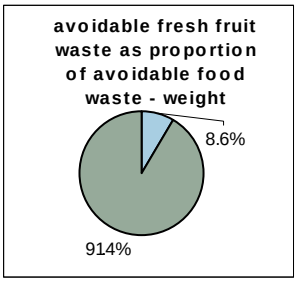
Type of fresh fruit	% of all fresh fruit waste weight	Weight (tonnes)	
		Council collected	Total
Bananas	30.9%	16,850	20,110
Apples	24.2%	13,110	15,750
Other fresh fruit[21]	14.6%	7790	9530
Oranges	11.4%	6190	7400
Melons	7.4%	3960	4800
Pineapples	4.0%	2210	2630
Grapes	3.8%	2080	2480
Mixed fruit	3.7%	1870	2380
Total	*100% (11.5% of all waste)*	*54,060*	*65,080*

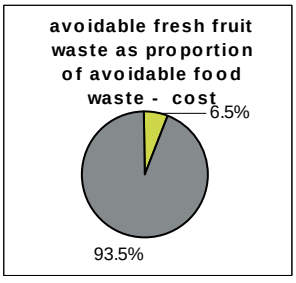
Table 66 The proportions and estimated annual cost of fresh fruit waste from households in Scotland

Type of fresh fruit	% of all fresh fruit waste cost	Cost (£M)	
		Council collected	Total
Other fresh fruit	28.5%	£24.4	£30.2
Apples	20.5%	£18.0	£21.7
Bananas	19.2%	£17.0	£20.3
Oranges	10.0%	£8.8	£10.6
Melons	8.6%	£7.4	£9.1
Grapes	7.4%	£6.6	£7.9
Mixed fruit	4.0%	£3.4	£4.2
Pineapples	1.8%	£1.6	£1.9
Total	*100% (7.8% of all waste)*	*£87.2*	*£105.9*

6.1.2 Types of avoidable fresh fruit waste

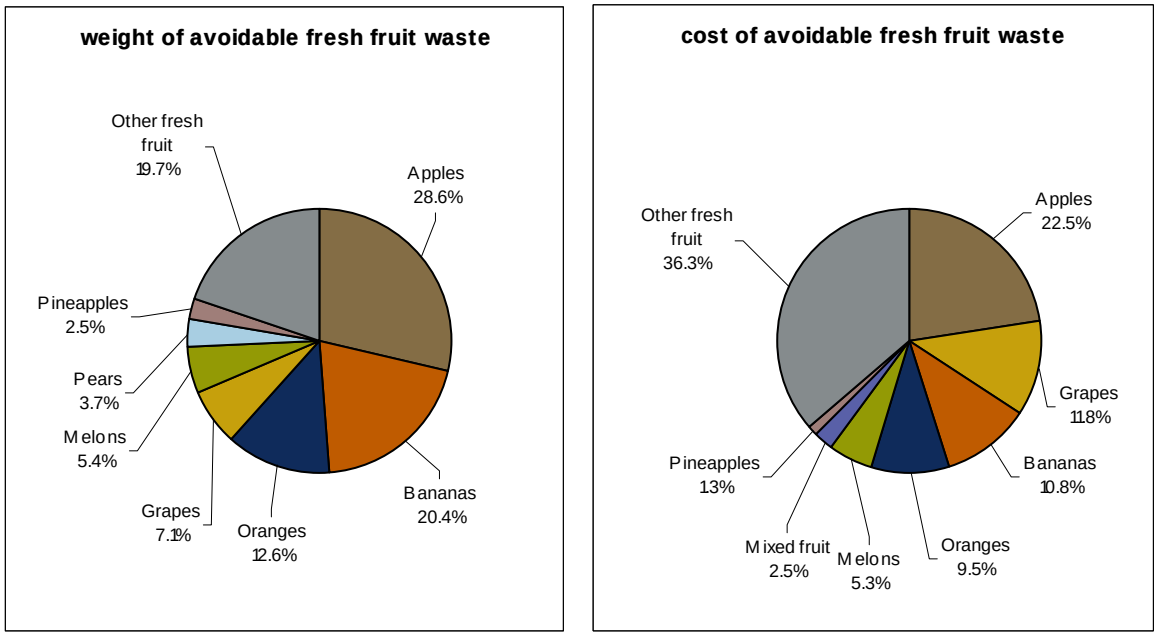
Fresh fruit waste accounts for 8.6% of the weight and 6.5% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households, regardless of disposal method.





[21] *Comprises Lemons, Pears, Plums, Grapefruits, Kiwis, Strawberries, Peaches, Mangoes, Avocados, Pomegranates, Nectarines, Limes and other unclassified fruits. Unclassified fruits are items that were rare in occurrence and/or could not be allocated a classification during sampling*

Figures 30 and 31 How different types of food make up avoidable fresh fruit waste



The above charts illustrate that, of the avoidable fresh fruit waste generated, in terms of weight, nearly three-tenths (28.6%) is made up of apples and a further one-fifth (20.4%) is made up of bananas. In terms of cost, more than one- fifth (22.4%) of avoidable fresh fruit waste consists of apples. Grapes and bananas each make up more than one-tenth (11.8% and 10.8% respectively) of the cost. The tables below give the proportions, annual weight (Table 67) and annual cost (Table 68) of each food type making up avoidable fresh fruit waste in Scotland.

Table 67 The proportions and estimated annual weight of avoidable fresh fruit waste from households in Scotland

Type of fresh fruit	% of avoidable fresh fruit waste weight	Weight (tonnes)	
		Council collected	Total
Apples	28.6%	7940	9590
Bananas	20.4%	5730	6830
Other fresh fruit	19.7%	5250	6610
Oranges	12.6%	3550	4230
Grapes	7.1%	2010	2400
Melons	5.4%	1510	1800
Pears	3.7%	1030	1230
Pineapples	2.5%	700	840
Total	*100% (8.6% of avoidable waste)*	*27,720*	*33,530*

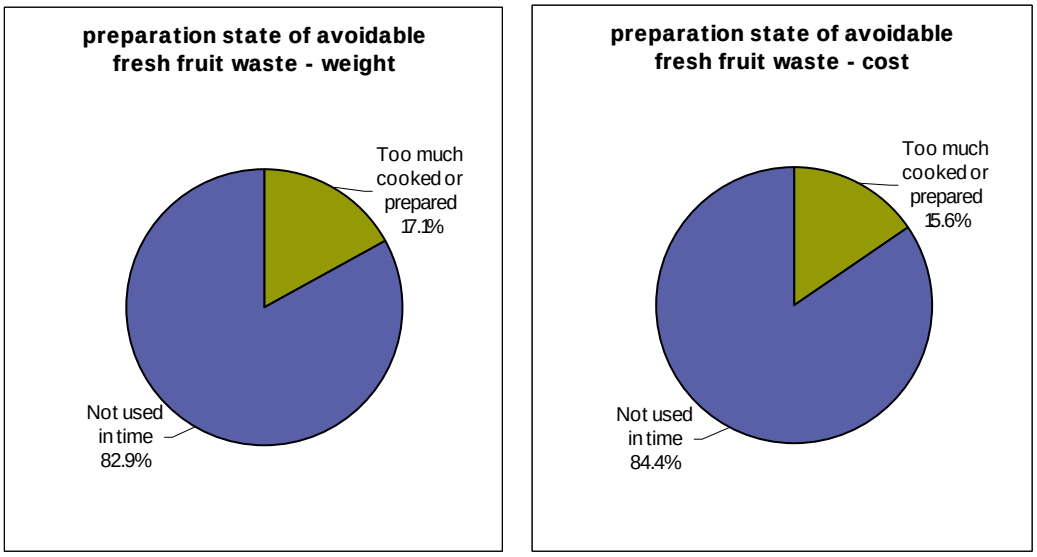
Table 68 The proportions and estimated annual cost of avoidable fresh fruit waste from households in Scotland

Type of fresh fruit	% of avoidable fresh fruit waste cost	Cost (£M)	
		Council collected	Total
Other fresh fruit	36.3%	£18.8	£23.7
Apples	22.5%	£12.1	£14.6
Grapes	11.8%	£6.4	£7.7
Bananas	10.8%	£5.9	£7.0
Oranges	9.5%	£5.2	£6.2
Melons	5.3%	£2.9	£3.4
Mixed fruit	2.5%	£1.3	£1.6
Pineapples	1.3%	£0.7	£0.8
Total	*100% (6.5% of avoidable waste)*	*£53.3*	*£65.0*

6.2 In what food preparation state is avoidable fresh fruit waste thrown away?

6.2.1 Food preparation state of avoidable fresh fruit waste

Figures 32 and 33 How different food preparation states make up avoidable fresh fruit waste



The above charts illustrate that, of the avoidable fresh fruit waste generated, more than eight-tenths (82.9%) by weight is made up of items not used in time and more than one-sixth (17.1%) is wasted because too much has been cooked or prepared[22]. In terms of cost, more than eight-tenths (84.4%) is made up of items not used in time and just under one-sixth (15.6%) is wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 69) and annual cost (Table 70) of fresh fruit waste in Scotland by food preparation state.

[22] *This refers to items of fruit that have been prepared or served in some way before throwing away e.g half eaten banana, slice of lemon or a segment of orange*

Table 69 The proportions and estimated annual weight of avoidable fresh fruit waste from households in Scotland by food preparation state

Food preparation state	% of avoidable fresh fruit waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	82.9%	23,270	27,810
Too much cooked or prepared	17.1%	4450	5720
Total	*100%*	*27,720*	*33,530*

Table 70 The proportions and estimated annual cost of avoidable fresh fruit waste from households in Scotland by food preparation state

Food preparation state	% of avoidable fresh fruit waste cost	Cost (£M)	
		Council collected	Total
Not used in time	84.4%	£45.2	£54.8
Too much cooked or prepared	15.6%	£8.1	£10.1
Total	*100%*	*£53.3*	*£65.0*

6.2.2 What types of avoidable fresh fruit waste are thrown away because they are not used in time?

Apples make up three-tenths (29.7%) of the fresh fruit thrown away because it is not used in time and bananas account for more than one-fifth (22.2%). The table below gives the proportions and annual weight of avoidable fresh fruit waste disposed of by households in Scotland because it is not used in time.

Table 71 The proportions and estimated annual weight of avoidable fresh fruit waste from households in Scotland not used in time

Type of fresh fruit not used in time	% of avoidable fresh fruit waste weight	Weight (tonnes)	
		Council collected	Total
Apples	29.7%	6930	8250
Bananas	22.2%	5190	6180
Other fresh fruit	20.2%	4610	5570
Oranges	14.1%	3300	3930
Grapes	8.6%	2010	2400
Melons	3.0%	710	850
Pineapples	1.3%	310	380
Mixed fruit	0.9%	210	250
Total	*100%*	*23,270*	*27,810*

Apples account for nearly a quarter (23.0%) of the cost of fresh fruit waste thrown away because it is not used in time or is no longer wanted. Grapes makes up a further one-seventh (14.0%) of the cost. The table below gives the proportions and annual cost of avoidable fresh fruit waste disposed of by households in Scotland because it is not used in time. Other fresh fruit makes up a relatively high contribution to overall cost (35.1%) when compared to contribution to weight (20.2%). This is likely to be a result of a higher than average value (£) for rarely occurring types of fruit e.g mangoes.

Table 72 The proportions and estimated annual cost of avoidable fresh fruit waste from households in Scotland not used in time

Type of fresh fruit not used in time	% of avoidable fresh fruit waste cost	Cost (£M)	
		Council collected	Total
Other fresh fruit	35.1%	£15.5	£19.2
Apples	23.0%	£10.5	£12.6
Grapes	14.0%	£6.4	£7.7
Bananas	11.5%	£5.3	£6.3
Oranges	10.6%	£4.8	£5.8
Melons	3.0%	£1.4	£1.6
Mixed fruit	1.8%	£0.8	£1.0
Pineapples	1.0%	£0.5	£0.6
Total	*100%*	*£45.2*	*£54.8*

6.2.3 What types of avoidable fresh fruit waste are thrown away because too much has been cooked or prepared?

In terms of weight, apples make up a quarter (25.8%) of avoidable fresh fruit waste disposed of because too much has been cooked or prepared. The table below gives the proportions and annual weight of avoidable fresh fruit waste disposed of by households in Scotland because too much is cooked or prepared.

Table 73 The proportions and estimated annual weight of avoidable fresh fruit waste from households in Scotland disposed of because too much is cooked or prepared

Type of fresh fruit where too much is cooked or prepared	% of avoidable fresh fruit waste weight	Weight (tonnes)	
		Council collected	Total
Other fresh fruit	26.6%	1270	1540
Apples	25.8%	1020	1480
Melons	16.7%	800	960
Bananas	14.1%	540	800
Pineapples	8.1%	390	460
Oranges	5.2%	250	300
Mixed fruit	3.6%	170	200
Total	*100%*	*4450*	*5720*

Apples account for more than one-fifth (21.8%) of the cost of the fresh fruit thrown away because too much has been cooked or prepared, whilst melons make up nearly one-fifth (17.8%) of the cost. The table below gives the proportions and annual cost of avoidable fresh fruit waste disposed of by households in Scotland because too much is cooked or prepared. Other fresh fruit makes up a relatively high contribution to overall cost (40.6%) when compared to it's contribution to weight (26.6%). This is likely to be a result of a higher than average value (£) for rarely occurring types of fruit e.g mangoes.

Table 74 The proportions and estimated annual cost of avoidable fresh fruit waste from households in Scotland disposed of because too much is cooked or prepared

Type of fresh fruit where too much is cooked or prepared	% of avoidable fresh fruit waste cost	Cost (£M)	
		Council collected	Total
Other fresh fruit	40.6%	£3.5	£4.0
Apples	21.8%	£1.5	£2.2
Melons	17.8%	£1.5	£1.8
Bananas	8.0%	£0.6	£0.8
Mixed fruit	5.2%	£0.4	£0.5
Oranges	4.0%	£0.3	£0.4
Pineapples	2.7%	£0.2	£0.3
Grapes?			
Total	*100%*	*£8.1*	*£10.1*

6.3 What fresh fruit items are thrown away in full packs and in-date?

Of the fresh fruit thrown away via council collections in full packs, less than one-twentieth by weight and cost (2.2% and 4.6% respectively) is in-date. The following table provides the proportion of fresh fruit waste in full packs and in-date when disposed of.

Table 75 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of fresh fruit	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	2.2%	4.6%	30	£0.2
Out-of-date	97.8%	95.4%	1320	£3.6
Total full packs	*100%*	*100%*	*1350*	*£3.7*

6.4 Summary of chapter

This chapter has described in detail the amount and cost of fresh fruit waste produced by households in Scotland.

- Apples are the most commonly disposed of fresh fruit, making up more than a quarter (28.6%) of the weight of all avoidable fresh fruit waste. This apple waste weighs more than 9000 tonnes and costs Scottish households more than £14 million each year.

- More than eight-tenths (82.9% by weight and 84.4% by cost) of fresh fruit waste is thrown away because it is not used in time or is no longer wanted. The fruits most commonly thrown away for this reason are apples (29.7% by weight) and bananas (22.2% by weight).

- Of all the fresh fruit disposed of in full packs via council collection, less than one-twentieth by weight and cost (2.2% and 4.6%) is thrown away before the food date expires.

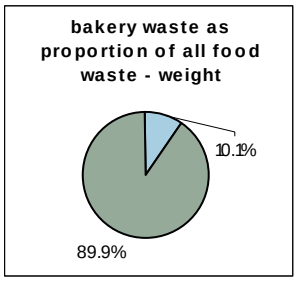
7 Bakery waste

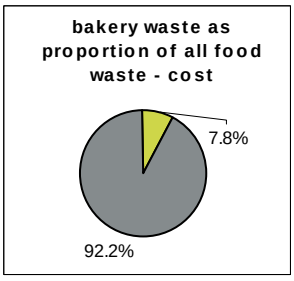
Figure 34 Examples of bakery waste found in household bins in Scotland

7.1 What types of bakery waste do households throw away?

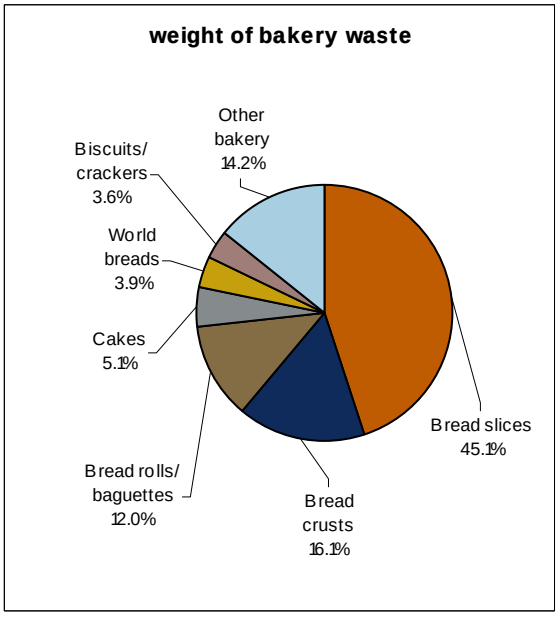
7.1.1 Types of bakery waste

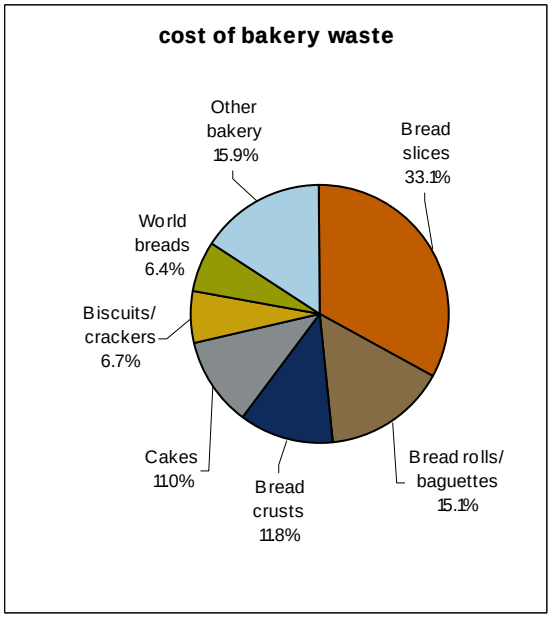
Bakery waste accounts for 10.1% of the weight and 7.8% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc).





Figures 35 and 36 How different types of food make up bakery waste





The above charts illustrate that, of the bakery waste generated, nearly half (45.1%) by weight is made up of bread slices. It is not possible to identify whether these slices originate from a loaf sliced on purchase or from a loaf sliced at home, although it is likely that most will be the former. One-sixth (16.1%) consists of bread crusts and one-eighth (12.0%) of bread rolls and baguettes. The bread crusts will include the end slice of a loaf and the edges cut from bread slices. In terms of cost, one-third (33.1%) of bakery waste consists of slices of bread and nearly one-sixth (15.1%) is attributable to bread rolls and baguettes.

The tables below give the proportions, annual weight (Table 76) and annual cost (Table 77) of each food type making up bakery waste in Scotland. The proportions relate to all methods of disposal.

Table 76 The proportions and estimated annual weight of bakery waste from households in Scotland

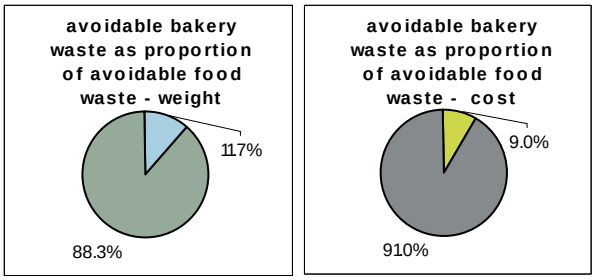
Type of bakery item	% of all bakery waste weight	Weight (tonnes)	
		Council collected	Total
Bread slices	45.1%	21,620	25,870
Bread crusts	16.1%	7510	9210
Other bakery[23]	14.2%	6410	8180
Bread rolls/baguettes	12.0%	5780	6890
Cakes	5.1%	2390	2900
World breads[24]	3.9%	1880	2240
Biscuits/crackers	3.6%	1680	2060
Total	*100% (10.1% of all waste)*	*47,270*	*57,350*

Table 77 The proportions and estimated annual cost of bakery waste from households in Scotland

Type of bakery item	% of all bakery waste cost	Cost (£M)	
		Council collected	Total
Bread slices	33.1%	£29.1	£34.9
Other bakery	15.9%	£13.4	£16.7
Bread rolls/baguettes	15.1%	£13.3	£15.9
Bread crusts	11.8%	£10.1	£12.4
Cakes	11.0%	£9.6	£11.6
Biscuits/crackers	6.7%	£5.7	£7.0
World breads	6.4%	£5.7	£6.8
Total	*100% (7.8% of all waste)*	*£86.9*	*£105.3*

7.1.2 Types of avoidable bakery waste

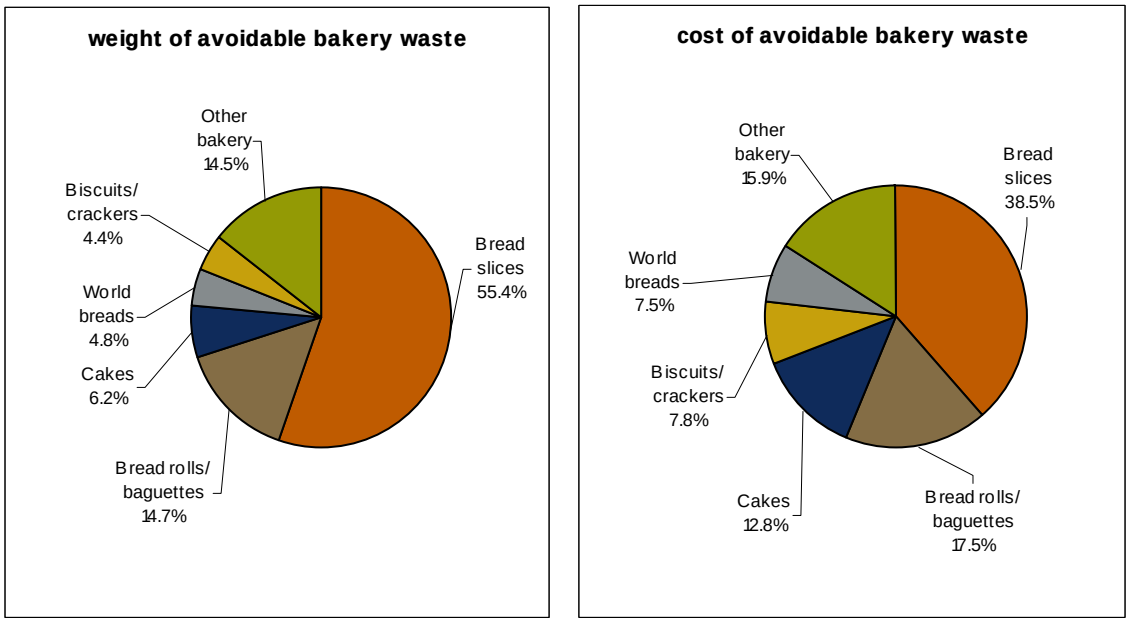
Bakery waste accounts for 11.7% of the weight and 9.0% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households, regardless of disposal method. Bread crusts are omitted from this section as they are considered possibly avoidable waste.



[23] Comprises Bread loaf, Bread scraps, Garlic bread, Yorkshire puddings/batters, Bagels, Scotch pancakes, Pastry, Potato cakes, Fruit loaf/buns, Dough, Scones, Doughnuts, Crumpets, Croissants, Breadsticks, Pie crusts, Danish pastries, Malt loaf and unclassified bakery. Unclassified bakery refers to items that were rare in occurrence and/or could not be classified during sampling

[24] Includes pitta, naan, tortilla, focaccia, ciabatta, pumpernickel

Figures 37 and 38 How different types of food make up avoidable bakery waste



The above charts illustrate that, of the avoidable bakery waste generated, over half (55.4%) by weight is made up of bread slices. One-seventh (14.7%) consists of bread rolls and baguettes. In terms of cost, nearly four-tenths (38.5%) of avoidable bakery waste consists of slices of bread and more than one-sixth (17.5%) is attributable to bread rolls and baguettes. The tables below give the proportions, annual weight (Table 78) and annual cost (Table 79) of each food type making up avoidable bakery waste in Scotland.

Table 78 The proportions and estimated annual weight of avoidable bakery waste from households in Scotland

Type of bakery item	% of avoidable bakery waste weight	Weight (tonnes)	
		Council collected	Total
Bread slices	55.4%	21,130	25,290
Bread rolls/baguettes	14.7%	5630	6710
Other bakery	14.5%	5030	6570
Cakes	6.2%	2350	2850
World breads	4.8%	1840	2190
Biscuits/crackers	4.4%	1650	2020
Total	*100% (11.7% of avoidable waste)*	*37,630*	*45,630*

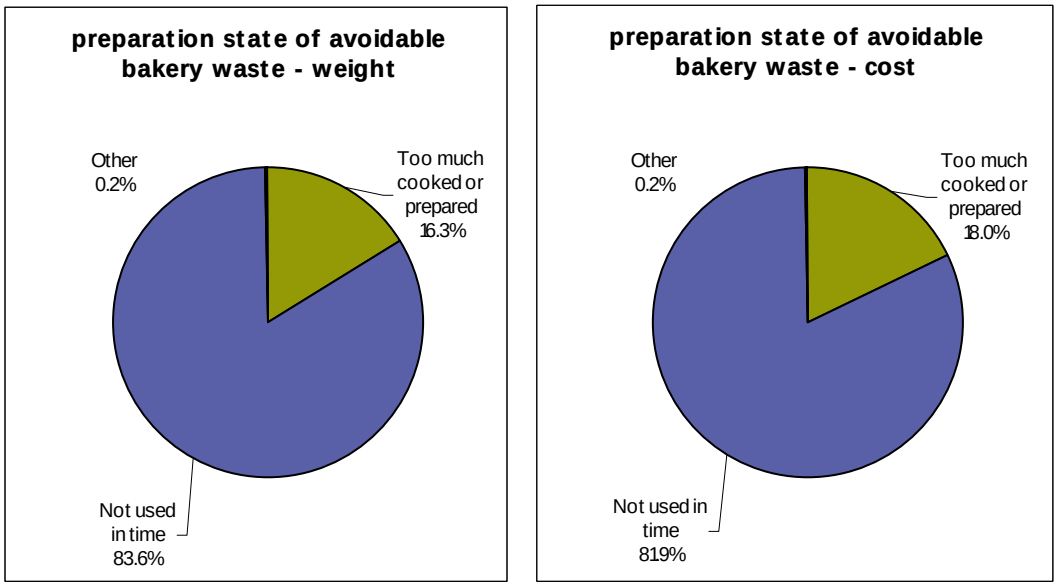
Table 79 The proportions and estimated annual cost of avoidable bakery waste from households in Scotland

Type of bakery item	% of avoidable bakery waste cost	Cost (£M)	
		Council collected	Total
Bread slices	38.5%	£28.8	£34.6
Bread rolls/baguettes	17.5%	£13.2	£15.7
Other bakery	15.9%	£11.5	£14.4
Cakes	12.8%	£9.5	£11.5
Biscuits/crackers	7.8%	£5.7	£7.0
World breads	7.5%	£5.6	£6.7
Total	*100% (9.0% of avoidable waste)*	*£74.3*	*£89.9*

7.2 In what food preparation state is avoidable bakery waste thrown away?

7.2.1 Food preparation state of avoidable bakery waste

Figures 39 and 40 How different food preparation states make up avoidable bakery waste



The above charts illustrate that, of the avoidable bakery waste generated, more than eight-tenths (83.6%) by weight is made up of items not used in time and one-sixth (16.3%) is wasted because too much has been cooked or prepared. In terms of cost, more than eight-tenths (81.9%) is made up of items not used in time and more than one-sixth (18.0%) is wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight and annual cost of avoidable bakery waste in Scotland by food preparation state.

Table 80 The proportions and estimated annual weight of avoidable bakery waste from households in Scotland by food preparation state

Food preparation state	% of avoidable bakery waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	83.6%	31,940	38,130
Too much cooked or prepared	16.3%	5650	7430
Other	0.2%	40	70
Total	*100%*	*37,630*	*45,630*

Table 81 The proportions and estimated annual cost of avoidable bakery waste from households in Scotland by food preparation state

Food preparation state	% of avoidable bakery waste cost	Cost (£M)	
		Council collected	Total
Not used in time	81.9%	£61.5	£73.6
Too much cooked or prepared	18.0%	£12.7	£16.2
Other	0.2%	£0.1	£0.2
Total	*100%*	*£74.3*	*£89.9*

7.2.2 What types of avoidable bakery waste are thrown away because they are not used in time?

In terms of weight, bread slices make up the greatest proportion of avoidable bakery waste disposed of because it has not been used in time. Just over six-tenths (61.0%) of bakery waste thrown away for this reason is made up of slices of bread. Bread rolls and baguettes account for a further one-sixth (16.2%). The table below gives the proportions and annual weight of avoidable bakery waste disposed of by households in Scotland because it has not been used in time or is no longer wanted.

Table 82 The proportions and estimated annual weight of avoidable bakery waste from households in Scotland not used in time

Type of bakery item not used in time	% of avoidable bakery waste weight	Weight (tonnes)	
		Council collected	Total
Bread slices	61.0%	19,530	23,280
Bread rolls/baguettes	16.2%	5190	6190
Other bakery	9.6%	2950	3550
World breads	5.2%	1650	1970
Biscuits/crackers	4.7%	1490	1780
Cakes	3.5%	1130	1350
Total	*100%*	*31,940*	*38,130*

In terms of cost, slices of bread make up the greatest proportion of avoidable bakery waste disposed of because it is not used in time. More than four-tenths (43.5%) of bakery waste thrown away for this reason is made up of bread slices. Bread rolls and baguettes account for a further one-fifth (20.1%). The table below gives the proportions and annual cost of avoidable bakery waste disposed of by households in Scotland because it is not used in time.

Table 83 The proportions and estimated annual cost of avoidable bakery waste from households in Scotland not used in time

Type of bakery item not used in time	% of avoidable bakery waste cost	Cost (£M)	
		Council collected	Total
Bread slices	43.5%	£26.8	£32.0
Bread rolls/baguettes	20.1%	£12.3	£14.8
Other bakery	11.4%	£7.6	£9.2
Biscuits/crackers	8.5%	£5.2	£6.2
World breads	7.8%	£4.8	£5.7
Cakes	7.7%	£4.7	£5.7
Total	*100%*	*£61.5*	*£73.6*

7.2.3 What types of avoidable bakery waste are thrown away because too much has been cooked or prepared?

More than a quarter (26.7%) of bakery waste thrown away for this reason is made up of slices of bread. Cakes account for a further one-fifth (20.1%). The table below gives the proportions and annual weight of avoidable bakery waste disposed of by households in Scotland because too much is cooked or prepared.

Table 84 The proportions and estimated annual weight of avoidable bakery waste from households in Scotland disposed of because too much is cooked or prepared

Type of bakery item where too much is cooked or prepared	% of avoidable bakery waste weight	Weight (tonnes)	
		Council collected	Total
Other bakery	39.7%	2050	2960
Bread slices	26.7%	1600	1980
Cakes	20.1%	1210	1490
World breads	3.0%	190	220
Bread rolls/baguettes	7.1%	440	520
Biscuits/crackers	3.2%	160	240
Total	*100%*	*5650*	*7430*

In terms of cost, cakes make up the greatest proportion of avoidable bakery waste disposed of because too much has been cooked or prepared. More than one-third (36.1%) of bakery waste thrown away for this reason is made up of cakes. Bread slices account for a further one-sixth (15.5%). The table below gives the proportions and annual cost of avoidable bakery waste disposed of by households in Scotland because too much is cooked or prepared.

Table 85 The proportions and estimated annual cost of avoidable bakery waste from households in Scotland disposed of because too much is cooked or prepared

Type of bakery item where too much is cooked or prepared	% of avoidable bakery waste cost	Cost (£M)	
		Council collected	Total
Cakes	36.1%	£4.8	£5.8
Other bakery	31.4%	£3.8	£5.0
Bread slices	15.5%	£2.0	£2.5
World breads	6.1%	£0.8	£1.0
Bread rolls/baguettes	6.0%	£0.8	£1.0
Biscuits/crackers	4.8%	£0.5	£0.8
Total	*100%*	*£12.7*	*£16.2*

7.3 What bakery items are thrown away in full packs and in-date?

Of the bakery waste thrown away via council collections in full packs, more than one-tenth by weight and cost (10.2% and 11.6% respectively) is in-date. The following table provides the proportion of bakery waste in full packs and in-date when disposed of.

Table 86 Estimated proportions, weight and cost of full packs thrown away via council collections by households,, by food date

Food date of full packs of bakery items	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	10.2%	11.6%	310	£0.9
Out-of-date	89.8%	88.4%	2730	£6.6
Total full packs	*100%*	*100%*	*3040*	*£7.5*

7.4 Summary of chapter

This chapter has described in detail the amount and cost of bakery waste produced by households in Scotland.

- Bread slices are the most commonly disposed of bakery items, making up more than half (55.4%) of the weight of all avoidable bakery waste. This bread-slice waste weighs more than 25,000 tonnes and costs Scottish households more than £30 million each year.

- More than eight-tenths (83.6% by weight and 81.9% by cost) of bakery waste is thrown away because it is not used in time or is no longer wanted. The bakery items most commonly thrown away for this reason are bread slices.

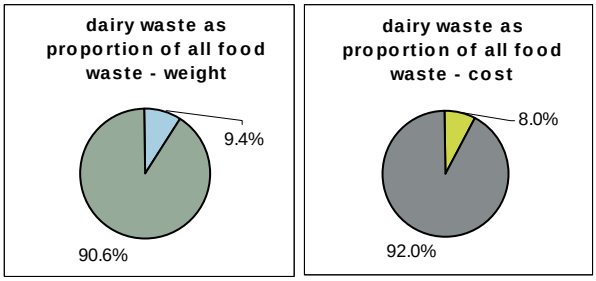
- Of all the bakery waste disposed of in full packs via council collections, more than one-tenth by weight and cost (10.2% and 11.6% respectively) is thrown away before the food date expires.

8 Dairy waste

8.1 What types of dairy waste do households throw away?

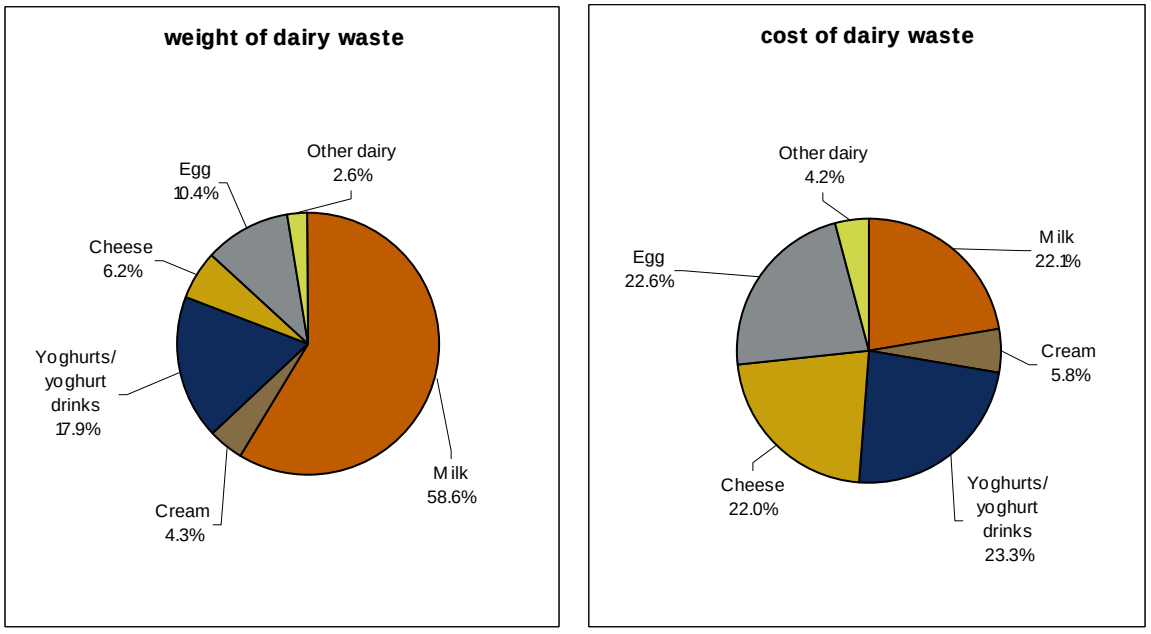
Figure 41 Examples of dairy waste found in household bins in Scotland

8.1.1 Types of dairy waste



Dairy waste, including milk, accounts for 9.4% of the weight and 8.0% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). When milk is excluded, dairy items account for 3.9% of the weight and 6.3% of the cost of all food and drink waste.

Figures 42 and 43 How different types of food make up dairy waste



The above charts illustrate that, of the dairy waste generated, more than half (58.6%) by weight is made up of milk and nearly one-fifth (17.9%) consists of yoghurts and yoghurt drinks. In terms of cost, yoghurts and yoghurt drinks make up nearly a quarter (23.3%) and egg waste (22.6%), milk (22.1%) and cheese (22.0%) make up just over one-fifth each.

The tables below give the proportions, annual weight (Table 87) and annual cost (Table 88) of each food type making up dairy waste in Scotland. The proportions relate to all methods of disposal.

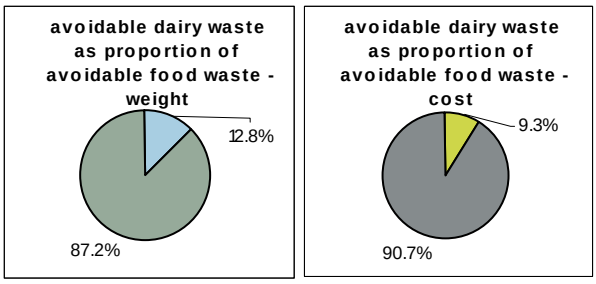
Table 87 The proportions and estimated annual weight of dairy waste from households in Scotland

Type of dairy item	% of all dairy waste weight	Weight (tonnes)	
		Council collected	Total
Milk	58.6%	2060	31,250
Yoghurts/yoghurt drinks	17.9%	5650	9530
Egg	10.4%	4070	5560
Cheese	6.2%	2630	3330
Cream	4.3%	600	2270
Other dairy[25]	2.6%	910	1390
Total	*100% (9.4% of all waste)*	*15,920*	*53,330*

Table 88 The proportions and estimated annual cost of dairy waste from households in Scotland

Type of dairy item	% of all dairy waste cost	Cost (£M)	
		Council collected	Total
Yoghurts/yoghurt drinks	23.3%	£15.5	£25.4
Egg	22.6%	£18.8	£24.6
Milk	22.1%	£1.6	£24.1
Cheese	22.0%	£19.0	£23.9
Cream	5.8%	£2.2	£6.3
Other dairy	4.2%	£3.2	£4.6
Total	*100% (8.0% of all waste)*	*£60.3*	*£108.9*

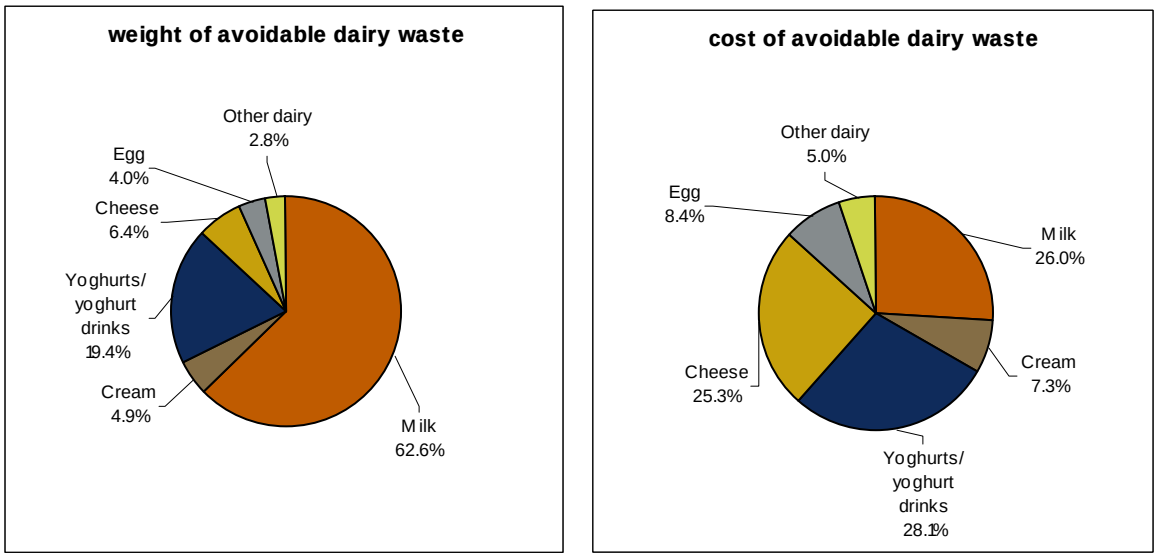
8.1.2 Types of avoidable dairy waste



Dairy waste including milk accounts for 12.8% of the weight and 9.3% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households, regardless of disposal method. When milk is excluded, dairy makes up 4.8% of the weight and 6.9% of the cost of avoidable food and drinks waste.

[25] *Comprises butter/margarine, crème fraiche and other unclassified dairy. Unclassified dairy refers to items that were rare in occurrence and/or were not allocated a classification during sampling*

Figures 44 and 45 How different types of food make up avoidable dairy waste



The above charts illustrate that, of the avoidable dairy waste generated, in terms of weight, more than six-tenths (62.6%) is made up of milk and a further one-fifth (19.4%) is made up of yoghurts and yoghurt drinks. In terms of cost, nearly three-tenths (28.1%) of avoidable dairy waste consists of yoghurts and yoghurt drinks. Milk and cheese each make up more than a quarter (26.0% and 25.3% respectively). The tables below give the proportions, annual weight (Table 89) and annual cost (Table 90) of each food type making up avoidable dairy waste.

Table 89 The proportions and estimated annual weight of avoidable dairy waste from households in Scotland

Type of dairy item	% of avoidable dairy waste weight	Weight (tonnes)	
		Council collected	Total
Milk	62.6%	2060	31,250
Yoghurts/yoghurt drinks	19.4%	5520	9690
Cheese	6.4%	2560	3190
Cream	4.9%	590	2430
Egg	4.0%	1090	1970
Other dairy	2.8%	880	1400
Total	*100% (12.8% of avoidable waste)*	*12,700*	*49,930*

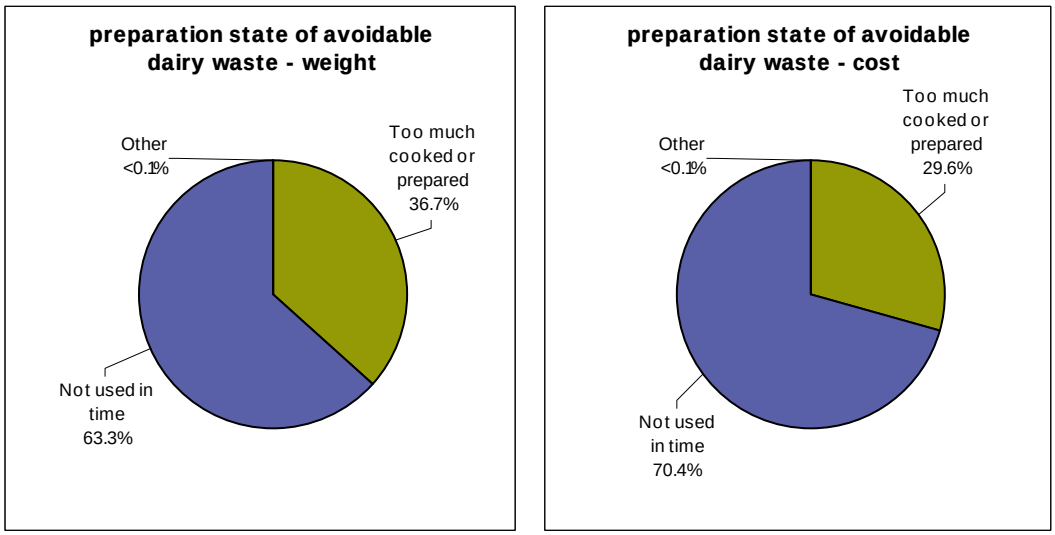
Table 90 The proportions and estimated annual cost of avoidable dairy waste from households in Scotland

Type of dairy item	% of avoidable dairy waste cost	Cost (£M)	
		Council collected	Total
Yoghurts/yoghurt drinks	28.1%	£15.3	£26.0
Milk	26.0%	£1.6	£24.1
Cheese	25.3%	£18.7	£23.4
Egg	8.4%	£4.9	£7.8
Cream	7.3%	£2.1	£6.7
Other dairy	5.0%	£3.2	£4.7
Total	*100% (9.3% of avoidable waste)*	*£45.9*	*£92.6*

8.2 In what food preparation state is avoidable dairy waste thrown away?

8.2.1 Food preparation state of avoidable dairy waste

Figures 46 and 47 How different food preparation states make up avoidable dairy waste



The above charts illustrate that, of the avoidable dairy waste generated, in terms of weight, more than six-tenths (63.3%) by weight is made up of items not used in time and over one-third (36.7%) is wasted because too much has been cooked or prepared. In terms of cost, seven-tenths (70.4%) is made up of items not used in time and three-tenths (29.6%) is wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 91) and annual cost (Table 92) of dairy waste in Scotland by food preparation state.

Table 91 The proportions and estimated annual weight of avoidable dairy waste from households in Scotland by food preparation state

Food preparation state	% of avoidable dairy waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	63.3%	11,530	31,600
Too much cooked or prepared	36.7%	1160	18,320
Other	<0.1%	10	10
Total	*100%*	*12,700*	*49,930*

Table 92 The proportions and estimated annual cost of avoidable dairy waste from households in Scotland by food preparation state

Food preparation state	% of avoidable dairy waste cost	Cost (£M)	
		Council collected	Total
Not used in time	70.4%	£37.7	£65.2
Too much cooked or prepared	29.6%	£8.2	£27.4
Other	<0.1%	<£0.1	<£0.1
Total	*100%*	*£45.9*	*£92.6*

8.2.2 *What types of avoidable dairy waste are thrown away because they are not used in time?*

In terms of weight, milk makes up more than half (52.8%) of avoidable dairy waste thrown away because it is not used in time. Yoghurt and yoghurt drinks account for more than a quarter (27.4%). The table below gives the proportions and annual weight of avoidable dairy waste disposed of by households in Scotland because it is not used in time.

Table 93 The proportions and estimated annual weight of avoidable dairy waste from households in Scotland not used in time

Type of dairy item not used in time	% of avoidable dairy waste weight	Weight (tonnes)	
		Council collected	Total
Milk	52.8%	2060	16,690
Yoghurts/yoghurt drinks	27.4%	5490	8670
Cream	6.5%	580	2060
Cheese	6.2%	1610	1950
Eggs	3.7%	970	1160
Other dairy	3.4%	820	1070
Total	*100%*	*11,530*	*31,600*

Yoghurt and yoghurt drinks account for more than one-third (36.1%) of the cost of dairy waste thrown away because it is not used in time or is no longer wanted. Cheese makes up more than one-fifth (21.1%) of the cost. The table below gives the proportions and annual cost of avoidable dairy waste disposed of by households in Scotland because it is not used in time.

Table 94 The proportions and estimated annual cost of avoidable dairy waste from households in Scotland not used in time

Type of dairy item not used in time	% of avoidable dairy waste cost	Cost (£M)	
		Council collected	Total
Yoghurts/yoghurt drinks	36.1%	£15.3	£23.5
Cheese	21.1%	£11.2	£13.8
Milk	19.8%	£1.6	£12.9
Cream	9.0%	£2.1	£5.9
Eggs	8.0%	£4.3	£5.2
Other dairy	6.0%	£3.2	£3.9
Total	*100%*	*£37.7*	*£65.2*

8.2.3 *What types of avoidable dairy waste are thrown away because too much has been cooked or prepared?*

In terms of weight, milk makes up the greatest proportion of avoidable dairy waste disposed of because too much has been cooked or prepared. Eight-tenths (79.5%) of dairy waste thrown away for this reason is made up of milk. Cheese accounts for less than one-tenth (7.0%). The table below gives the proportions and annual weight of avoidable dairy waste disposed of by households in Scotland because too much is cooked or prepared.

Table 95 The proportions and estimated annual weight of avoidable dairy waste from households in Scotland disposed of because too much is cooked or prepared

Type of dairy item where too much is cooked or prepared	% of avoidable dairy waste weight	Weight (tonnes)	
		Council collected	Total
Milk	79.5%	0	14,560
Cheese	7.0%	980	1290
Yoghurts/yoghurt drinks	5.0%	0	920
Eggs	4.9%	120	890
Cream	1.6%	10	300
Other dairy	2.0%	50	360
Total	*100%*	*1160*	*18,320*

Milk accounts for four-tenths (40.8%) of the cost of avoidable dairy waste thrown away because too much has been cooked or prepared, whilst cheese makes up more than one-third (35.3%) of the cost. The table below gives the proportions and annual cost of avoidable dairy waste disposed of by households in Scotland because too much is cooked or prepared.

Table 96 The proportions and estimated annual cost of avoidable dairy waste from households in Scotland disposed of because too much is cooked or prepared

Type of dairy item where too much is cooked or prepared	% of avoidable dairy waste cost	Cost (£M)	
		Council collected	Total
Milk	40.8%	£0.0	£11.2
Cheese	35.3%	£7.5	£9.7
Eggs	9.8%	£0.5	£2.7
Yoghurts/yoghurt drinks	8.6%	£0.0	£2.4
Cream	2.8%	£0.1	£0.8
Other dairy	2.7%	£0.1	£0.8
Total	*100%*	*£8.2*	*£27.6*

8.3 What dairy items are thrown away in full packs and in-date?

Of the dairy waste thrown away via council collections in full packs, more than one-tenth by weight and cost (11.1% and 12.1% respectively) is in-date. The following table provides the proportions of dairy waste in full packs and in-date when disposed of.

Table 97 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of dairy items	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	11.1%	12.1%	680	£2.2
Out-of-date	88.9%	87.9%	5450	£15.8
Total full packs	*100%*	*100%*	*6130*	*£17.9*

8.4 Summary of chapter

This chapter has described in detail the amount and cost of dairy waste produced by households in Scotland.

- Milk is the most commonly disposed of dairy item, making up more than six-tenths (62.6%) of the weight of all avoidable dairy waste. This milk waste weighs more than 31,000 tonnes and costs Scottish households more than £20 million each year.

- Around two-thirds (63.3% by weight and 70.4% by cost) of dairy waste is thrown away because it is not used in time or is no longer wanted. The dairy item most commonly thrown away for this reason is milk.

- Of all the dairy waste disposed of in full packs via council collections, more than one-tenth by weight and cost (11.1% and 12.1% respectively) is thrown away before the food date expires.

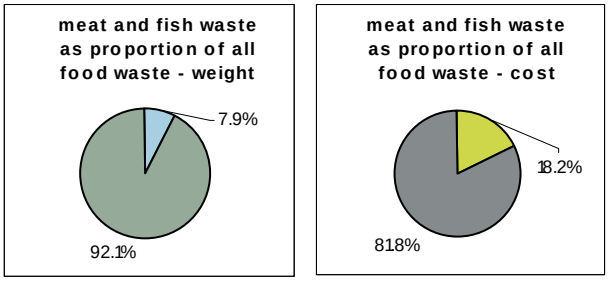
9 Meat and fish waste

Figure 48 Examples of meat and fish waste found in household bins in Scotland

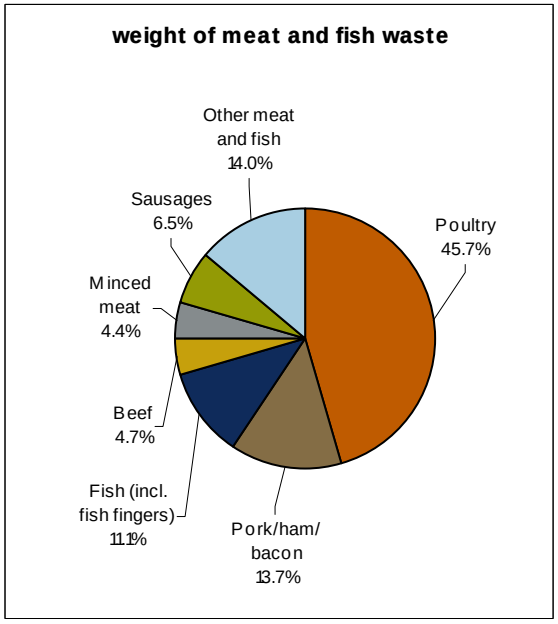
9.1 What types of meat and fish waste do households throw away?

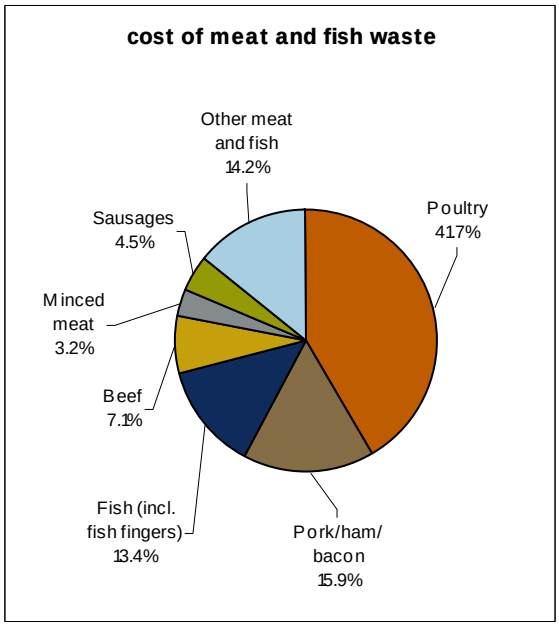
9.1.1 Types of meat and fish waste

Meat and fish waste accounts for 7.9% of the weight and 18.2% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc).



Figures 49 and 50 How different types of food make up meat and fish waste





The above charts illustrate that, of the meat and fish waste generated, more than four-tenths (45.6%) by weight is made up of poultry (chicken, turkey, duck etc) with most being chicken. Just under one-seventh (13.7%) consists of pork, ham and bacon, and more than one-tenth (11.1%) is fish. In terms of cost, more than four-

tenths (41.7%) of the meat and fish waste consists of poultry and a further one-sixth (15.9%) is attributable to pork, ham and bacon.

The tables below give the proportions, annual weight (Table 98) and annual cost (Table 99) of each food type making up meat and fish waste in Scotland. The proportions relate to all methods of disposal.

Table 98 The proportions and estimated annual weight of meat and fish waste from households in Scotland

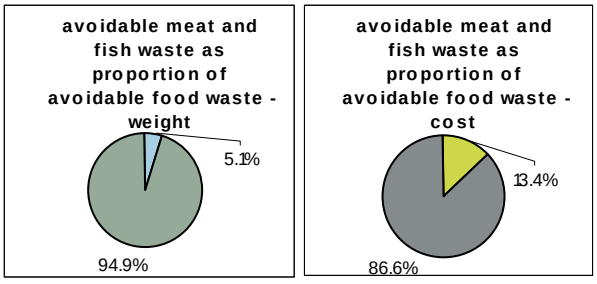
Type of meat and fish	% of all meat and fish waste weight	Weight (tonnes)	
		Council collected	Total
Poultry	45.6%	15,720	20,290
Other meat and fish[26]	14.0%	4190	6230
Pork/ham/ bacon	13.6%	4120	6060
Fish (incl. fish fingers)	11.1%	1350	4950
Sausages	6.5%	2440	2910
Beef	4.7%	1530	2080
Minced meat	4.4%	630	1940
Total	*100% (7.9% of all waste)*	*29,960*	*44,460*

Table 99 The proportions and estimated annual cost of meat and fish waste from households in Scotland

Type of meat and fish	% of all meat and fish waste cost	Cost (£M)	
		Council collected	Total
Poultry	41.7%	£80.8	£103.0
Pork/ham/ bacon	15.9%	£29.2	£39.2
Other meat and fish	14.2%	£24.9	£35.2
Fish (incl. fish fingers)	13.4%	£14.2	£33.1
Beef	7.1%	£12.4	£17.5
Sausages	4.5%	£9.3	£11.1
Minced meat	3.2%	£3.0	£8.0
Total	*100% (18.2% of all waste)*	*£173.8*	*£247.1*

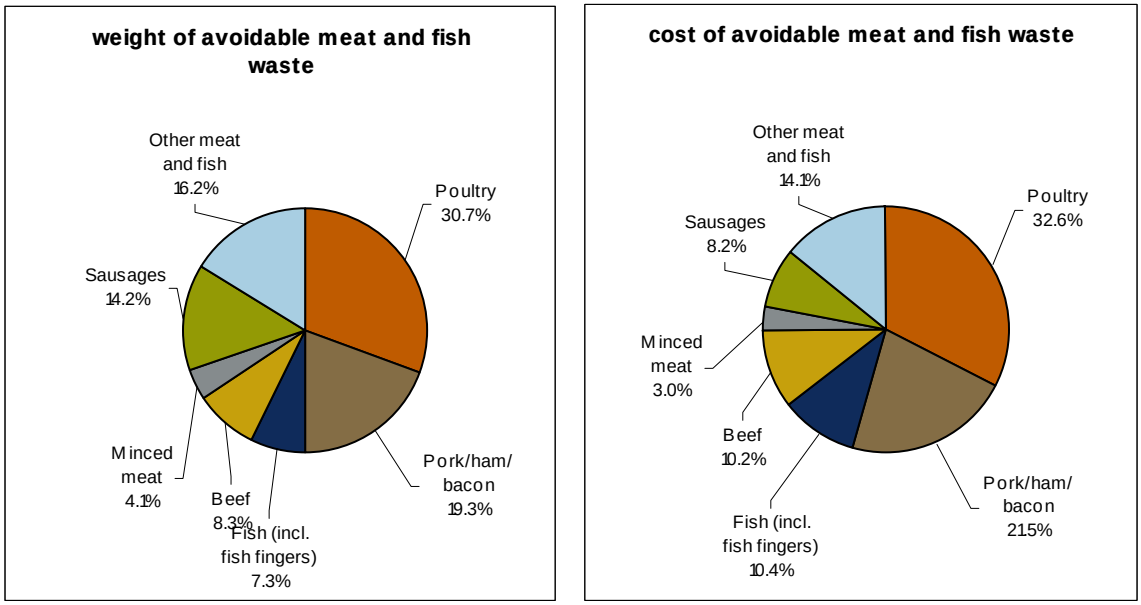
9.1.2 Types of avoidable meat and fish waste

Meat and fish waste accounts for 5.1% of the weight and 13.4% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households.



[26] *Comprises Sandwich spreads, Cured meats, Meatballs, Lamb, Hotdogs, Black pudding, Burgers, Shellfish (prawns, etc.) and other unclassified meat and fish. Unclassified meat and fish refers to items that were rare in occurrence and/or could not be classified during the sort process*

Figures 51 and 52 How different types of food make up avoidable meat and fish waste



The above charts illustrate that, of the avoidable meat and fish waste generated, three-tenths (30.7%) by weight is poultry and just under one-fifth (19.3%) is made up of pork, ham and bacon. In terms of cost, nearly one-third (32.6%) of the avoidable meat and fish waste consists of poultry and just over one-fifth (21.5%) is attributable to pork, ham and bacon. The tables below give the proportions, annual weight (Table 100) and annual cost (Table 101) of each food type making up avoidable meat and fish waste in Scotland.

Table 100 The proportions and estimated annual weight of avoidable meat and fish waste from households in Scotland

Type of meat and fish	% of avoidable meat and fish waste weight	Weight (tonnes)	
		Council collected	Total
Poultry	30.7%	5120	6120
Pork/ham/ bacon	19.3%	3240	3870
Other meat and fish	16.2%	2640	3240
Sausages	14.2%	2380	2830
Beef	8.3%	1380	1660
Fish (incl. fish fingers)	7.3%	980	1450
Minced meat	4.1%	620	820
Total	*100% (4.8% of avoidable waste)*	*16,370*	*20,000*

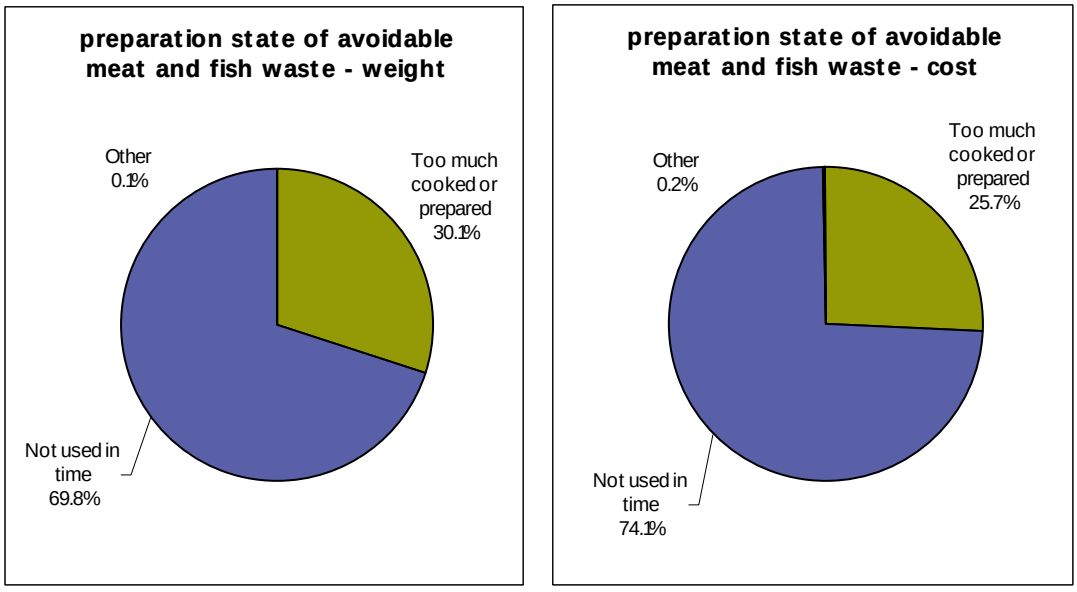
Table 101 The proportions and estimated annual cost of avoidable meat and fish waste from households in Scotland

Type of meat and fish	% of avoidable meat and fish waste cost	Cost (£M)	
		Council collected	Total
Poultry	32.6%	£36.3	£43.4
Pork/ham/ bacon	21.5%	£23.9	£28.6
Other meat and fish	14.1%	£15.5	£18.8
Fish (incl. fish fingers)	10.4%	£10.4	£13.8
Beef	10.2%	£11.4	£13.6
Sausages	8.2%	£9.2	£11.0
Minced meat	3.0%	£3.0	£3.9
Total	*100% (13.4% of avoidable waste)*	*£109.7*	*£133.2*

9.2 In what food preparation state is avoidable meat and fish waste thrown away?

9.2.1 Food preparation state of avoidable meat and fish waste

Figures 53 and 54 How different food preparation states make up avoidable meat and fish waste



The above charts illustrate that, of the avoidable meat and fish waste generated, seven-tenths (69.8%) by weight is made up of items not used in time and three-tenths (30.1%) is wasted because too much has been cooked or prepared. In terms of cost, three-quarters (74.1%) is made up of items not used in time and one-quarter (25.7%) is wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 102) and annual cost (Table 103) of meat and fish waste in Scotland by food preparation state.

Table 102 The proportions and estimated annual weight of avoidable meat and fish waste from households in Scotland by food preparation state

Food preparation state	% of avoidable meat and fish waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	69.8%	11,710	13,960
Too much cooked or prepared	30.1%	4640	6020
Other	0.1%	20	30
Total	*100%*	*16,370*	*20,000*

Table 103 The proportions and estimated annual cost of avoidable meat and fish waste from households in Scotland by food preparation state

Food preparation state	% of avoidable meat and fish waste cost	Cost (£M)	
		Council collected	Total
Not used in time	74.1%	£82.5	£98.7
Too much cooked or prepared	25.7%	£26.9	£34.3
Other	0.2%	£0.2	£0.3
Total	*100%*	*£109.7*	*£133.2*

9.2.2 What types of avoidable meat and fish waste are thrown away because they are not used in time?

In terms of weight poultry makes up the greatest proportion of avoidable meat and fish waste disposed of because it is not used in time or is no longer wanted. Just over a quarter (25.6%) of meat and fish waste thrown away for this reason is made up of poultry. The table below gives the proportions and annual weight of avoidable meat and fish waste disposed of by households in Scotland because it is not used in time.

Table 104 The proportions and estimated annual weight of avoidable meat and fish waste from households in Scotland not used in time

Type of meat and fish not used in time	% of avoidable meat and fish waste weight	Weight (tonnes)	
		Council collected	Total
Poultry	25.6%	3000	3580
Pork/ham/ bacon	23.1%	2700	3240
Sausages	16.0%	1880	2240
Other meat and fish	15.0%	1760	2090
Beef	8.6%	1010	1200
Fish (incl. fish fingers)	7.1%	830	990
Minced meat	4.5%	530	630
Total	*100%*	*11,710*	*13,960*

In terms of cost, poultry makes up the greatest proportion of avoidable meat and fish waste disposed of because it has not been used in time or is no longer wanted. Overall, these items account for three-tenths (30.0%) of the cost of the meat and fish waste thrown away for this reason. The table below gives the proportions and annual cost of avoidable meat and fish waste disposed of by households in Scotland because it is not used in time.

Table 105 The proportions and estimated annual cost of avoidable meat and fish waste from households in Scotland not used in time

Type of meat and fish not used in time	% of avoidable meat and fish waste cost	Cost (£M)	
		Council collected	Total
Poultry	30.0%	£24.8	£29.6
Pork/ham/ bacon	24.8%	£20.5	£24.4
Other meat and fish	12.6%	£10.4	£12.4
Fish (incl. fish fingers)	10.6%	£8.8	£10.5
Beef	10.0%	£8.2	£9.8
Sausages	8.9%	£7.3	£8.8
Minced meat	3.2%	£2.6	£3.1
Total	*100%*	*£82.5*	*£98.7*

9.2.3 What types of avoidable meat and fish waste are thrown away because too much has been cooked or prepared?

In terms of weight, poultry makes up the greatest proportion of avoidable meat and fish waste disposed of because too much has been cooked or prepared. More than four-tenths (42.2%) of meat and fish waste thrown away for this reason is made up of poultry. The table below gives the proportions and annual weight of avoidable meat and fish waste disposed of by households in Scotland because too much is cooked or prepared.

Table 106 The proportions and estimated annual weight of avoidable meat and fish waste from households in Scotland disposed of because too much is cooked or prepared

Type of meat and fish where too much is cooked or prepared	% of avoidable meat and fish waste weight	Weight (tonnes)	
		Council collected	Total
Poultry	42.2%	2110	2530
Other meat and fish	19.1%	900	1140
Pork/ham/ bacon	10.6%	530	630
Sausages	9.9%	500	600
Fish (incl. fish fingers)	7.6%	150	460
Beef	7.5%	360	460
Minced meat	3.1%	90	190
Total	*100%*	*4640*	*6010*

In terms of cost, poultry makes up the greatest proportion of avoidable meat and fish waste disposed of because too much has been cooked or prepared. Overall, these items account for four-tenths (39.7%) of the cost of the meat and fish waste thrown away for this reason. The table below gives the proportions and annual cost of avoidable meat and fish waste disposed of by households in Scotland because too much is cooked or prepared.

Table 107 The proportions and estimated annual cost of avoidable meat and fish waste from households in Scotland disposed of because too much is cooked or prepared

Type of meat and fish where too much is cooked or prepared	% of avoidable meat and fish waste cost	Cost (£M)	
		Council collected	Total
Poultry	39.7%	£11.3	£13.6
Pork/ham/ bacon	12.2%	£3.4	£4.2
Fish (incl. fish fingers)	9.6%	£1.6	£3.3
Beef	11.0%	£3.2	£3.8
Sausages	6.4%	£1.8	£2.2
Minced meat	2.3%	£0.4	£0.8
Other meat and fish	18.8%	£5.1	£6.4
Total	*100%*	*£26.9*	*£34.3*

9.3 What meat and fish items are thrown away in full packs and in-date?

Of the meat and fish waste thrown away via council collections in full packs, one-eighth (12.5%) by weight and more than one-sixth (17.2%) by cost is in-date. The following table provides the proportion of meat and fish waste in full packs and in-date when disposed of.

Table 108 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of meat and fish	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	12.5%	17.2%	510	£4.8
Out-of-date	87.5%	82.8%	3540	£23.4
Total full packs	*100%*	*100%*	*4050*	*£28.2*

9.4 Summary of chapter

This chapter has described in detail the amount and cost of meat and fish waste produced by households in Scotland.

- Collectively, poultry items are the most commonly disposed of meat and fish food type, making up just over three-tenths (30.7%) of the weight of all avoidable meat and fish waste. Poultry waste weighs 6120 tonnes and costs Scottish households over £43 million each year.

- Around seven-tenths (69.8% by weight and 74.1% by cost) of the meat and fish waste is thrown away because it is not used in time or is no longer wanted.

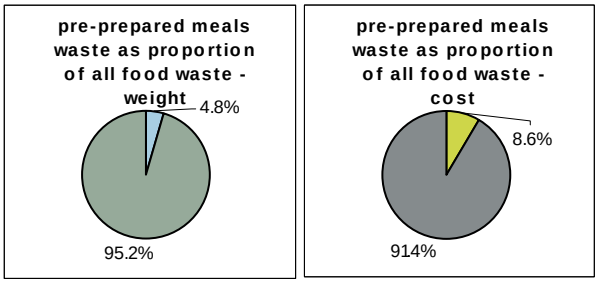
- Of all the meat and fish disposed of in full packs via council collection, one-eighth (12.5%) by weight and more than one-sixth (17.2%) by cost is thrown away before the food date expires.

10 Pre-prepared meal and snack waste

Figure 55 Examples of pre-prepared meal and snack waste found in household bins in Scotland

10.1 What types of pre-prepared meal and snack waste do households throw away?

10.1.1 Types of pre-prepared meal and snack waste



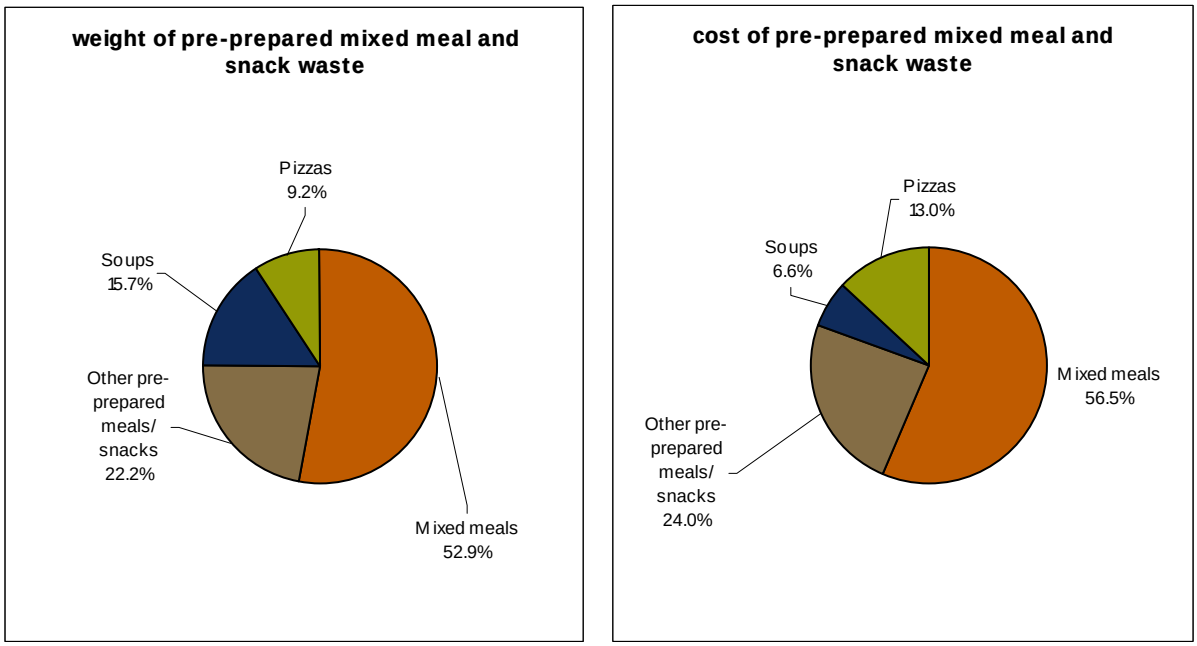
Food waste that consisted of two or more food groups (e.g. a pizza) was categorised as mixed meals and snacks during the sort analysis process. Using the information provided by the sorters, analysts at Exodus Research re-categorised these items to indicate if they were 'homemade' or 'pre-prepared'. Where there was inadequate information, items were classed as 'other'.

Pre-prepared meal and snack waste accounts for 4.8% of the weight and 8.6% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). Nearly all (96.4%) of the pre-prepared mixed meal and snack waste is avoidable in that it could have been consumed if better managed or stored. This food group consists of meals and snacks purchased from a store or takeaway. This chapter looks at the group as a whole and then separately at items that could be identified as store-bought and purchased from a takeaway outlet.

The following terminology is used to categorise pre-prepared food waste:

- 'mixed meals' (where possible these are classified as meat/fish, pasta, vegetable or rice-based) – items such as shepherd's pie or a chicken and mushroom pie;
- 'mixed foods' – waste from two or more food groups which could not be separated during the sort process (e.g. shepherd's pie mixed with rice); and
- 'mixed snacks' – pre-prepared items that do not normally constitute a full meal (e.g. a sausage roll or samosa).

Figures 56 and 57 How different types of food make up pre-prepared meal and snack waste



The above charts illustrate that, of the pre-prepared meal and snack waste generated, more than half (52.9%) by weight is made up of mixed meals (such as shepherd's pie or pasta bake). Soups make up one-sixth (15.7%) of the weight. In terms of cost, mixed meals make up more than half (56.5%) and pizzas account for more than one-eighth (13.0%). The tables below give the proportions, annual weight (Table 109) and annual cost (Table 110) of each food type making up pre-prepared meal and snack waste in Scotland. The proportions relate to all methods of disposal.

Table 109 The proportions and estimated annual weight of pre-prepared meal and snack waste from households in Scotland

Type of pre-prepared meal and snack	% of all pre-prepared meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Mixed meals	52.9%	11,460	14,510
Other pre-prepared meals/snacks[27]	22.2%	4940	6090
Soups	15.7%	610	4290
Pizzas	9.2%	2120	2530
Total	*100% (4.8% of all waste)*	*19,130*	*27,430*

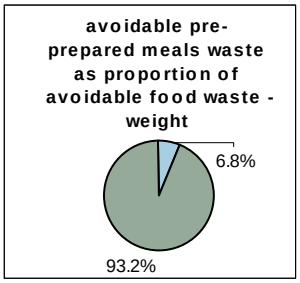
[27] *Comprises Mixed snacks, Rice meals, Mixed foods, Sandwiches, Stews and Unclassifiable pre-prepared meal and snacks. Unclassifiable pre-prepared meal and snacks refers to items that were rare in occurrence or for which there was not enough information from the sort analysis to determine whether they should be classified as a meal or a snack (e.g. items that were described only as 'pies').*

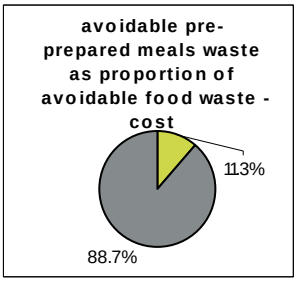
Table 110 The proportions and estimated annual cost of pre-prepared meal and snack waste from households in Scotland

Type of pre-prepared meal and snack	% of all pre-prepared meal and snack waste cost	Cost (£M)	
		Council collected	Total
Mixed meals	56.5%	£52.0	£66.2
Other pre-prepared meals/snacks	24.0%	£22.8	£28.1
Pizzas	13.0%	£12.8	£15.3
Soups	6.6%	£1.6	£7.7
Total	*100% (8.6% of avoidable waste)*	*£89.1*	*£117.3*

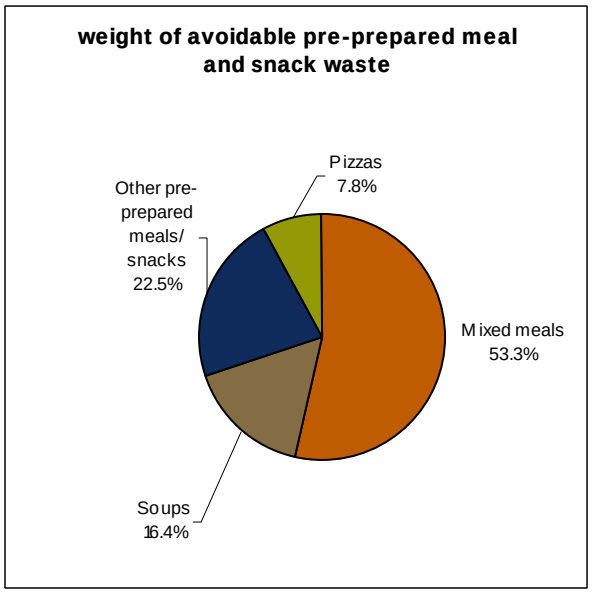
10.1.2 Types of avoidable pre-prepared meal and snack waste

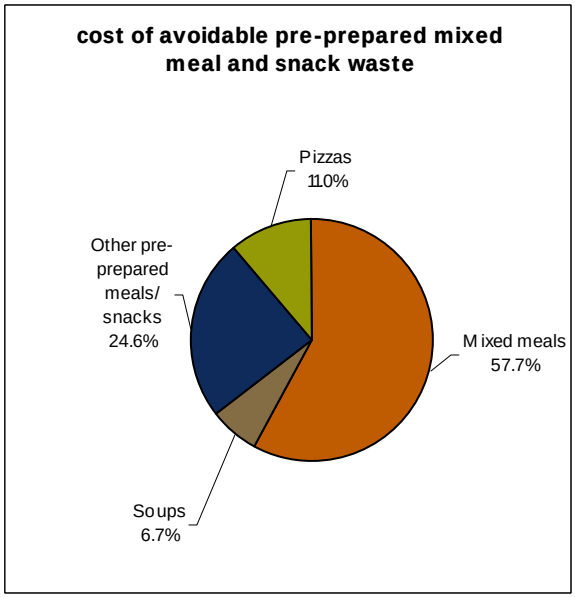
Pre-prepared meal and snack waste accounts for 6.8% of the weight and 11.3% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households.





Figures 58 and 59 How different types of food make up avoidable pre-prepared meal and snack waste





The above charts illustrate that, of the avoidable pre-prepared meal and snack waste generated, more than half (53.3%) by weight is made up of mixed meals, such as shepherd's pie. In terms of cost, mixed meals also make up the greatest proportion at nearly six-tenths (57.7%). Pre-prepared pizzas account for more than one-tenth (11.0%) of the cost. The tables below give the proportions, annual weight (Table 111) and annual cost (Table 112) of each food type making up avoidable pre-prepared meal and snack waste in Scotland.

Table 111 The proportions and estimated annual weight of avoidable pre-prepared meal and snack waste from households in Scotland

Type of pre-prepared meal and snack	% of avoidable pre-prepared meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Mixed meals	53.3%	11,080	14,090
Other pre-prepared meals/ snacks	22.5%	4820	5940
Soups	16.4%	600	4350
Pizzas	7.8%	1730	2060
Total	*100% (6.8% of avoidable waste)*	*18,230*	*26,450*

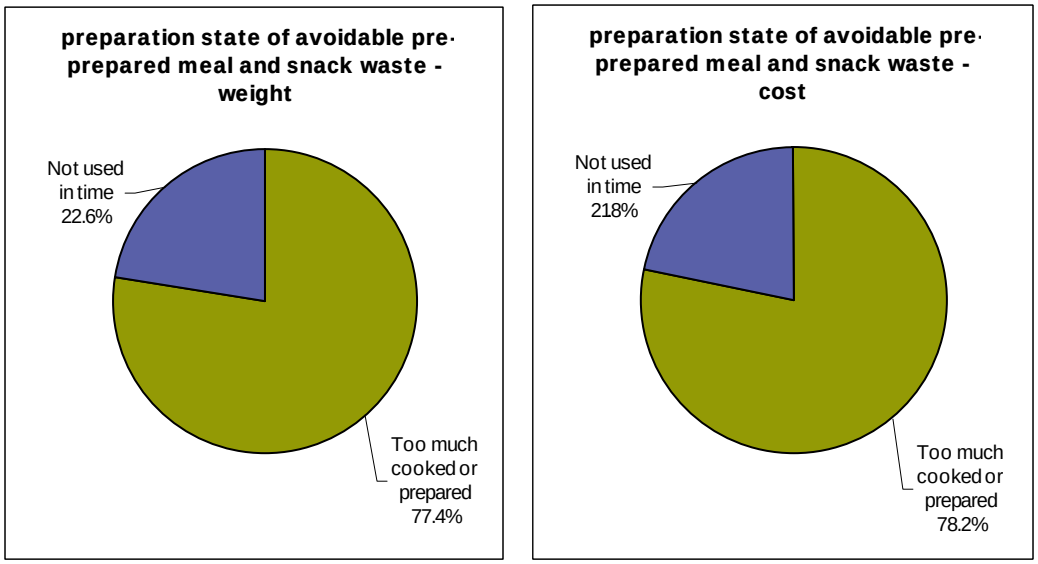
Table 112 The proportions and estimated annual cost of avoidable pre-prepared meal and snack waste from households in Scotland

Type of pre-prepared meal and snack	% of avoidable pre-prepared meal and snack waste cost	Cost (£M)	
		Council collected	Total
Mixed meals	57.7%	£51.1	£65.2
Other pre-prepared meals/ snacks	24.6%	£22.5	£27.8
Pizzas	11.0%	£10.4	£12.5
Soups	6.7%	£1.6	£7.6
Total	*100% (11.3% of avoidable waste)*	*£85.7*	*£113.1*

10.2 In what food preparation state is avoidable pre-prepared meal and snack waste thrown away?

10.2.1 Food preparation state of avoidable pre-prepared meal and snack waste

Figures 60 and 61 How different food preparation states make up avoidable pre-prepared meal and snack waste



The above charts illustrate that, of the avoidable pre-prepared meal and snack waste generated, more than three-quarters (77.4%) by weight is made up of items wasted because too much has been cooked or prepared. More than one-fifth (22.6%) is not used in time or is no longer wanted. In terms of cost, nearly eight-tenths (78.2%) is made up of items wasted because too much has been cooked or prepared and more than one-fifth (21.8%) is not

used in time. The tables below give the proportions, annual weight (Table 113) and annual cost (Table 114) of pre-prepared meal and snack waste in Scotland by food preparation state.

Table 113 The proportions and estimated annual weight of avoidable pre-prepared meal and snack waste from households in Scotland by food preparation state

Food preparation state	% of avoidable pre-prepared meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Too much cooked or prepared	77.4%	13,580	20,480
Not used in time	22.6%	4640	5970
Total	*100%*	*18,230*	*26,450*

Table 114 The proportions and estimated annual cost of avoidable pre-prepared meal and snack waste from households in Scotland by food preparation state

Food preparation state	% of avoidable pre-prepared meal and snack waste cost	Cost (£M)	
		Council collected	Total
Too much cooked or prepared	78.2%	£65.7	£88.4
Not used in time	21.8%	£20.1	£24.7
Total	*100%*	*£85.7*	*£113.1*

10.2.2 What types of avoidable pre-prepared meal and snack waste are thrown away because they are not used in time?

Pre-prepared meals (meals that are meat, vegetable, pasta and rice-based) make up nearly one-third (32.4%) of the weight of pre-prepared mixed meals and snacks thrown away because they are not used in time or are no longer wanted. The table below gives the proportions and annual weight of avoidable pre-prepared meal and snack waste disposed of by households in Scotland because it is not used in time.

Table 115 The proportions and estimated annual weight of avoidable pre-prepared meal and snack waste from households in Scotland not used in time

Type of pre-prepared meal and snack not used in time	% of avoidable pre-prepared meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Other pre-prepared meals/snacks	42.6%	2130	2530
Mixed meals	32.4%	1620	1940
Soups	16.7%	470	1000
Pizzas	8.3%	420	500
Total	*100%*	*4640*	*5970*

Mixed meals account for more than one-third (37.5%) of the cost of pre-prepared meals and snacks not used in time. The table below gives the proportions and annual cost of avoidable pre-prepared meal and snack waste disposed of by households in Scotland because it is not used in time.

Table 116 The proportions and estimated annual cost of avoidable pre-prepared meal and snack waste from households in Scotland not used in time

Type of pre-prepared meal and snack not used in time	% of avoidable pre-prepared meal and snack waste cost	Cost (£M)	
		Council collected	Total
Other pre-prepared meals/snacks	45.4%	£9.4	£11.2
Mixed meals	37.5%	£7.7	£9.3
Soups	9.0%	£1.3	£2.2
Pizzas	8.0%	£1.7	£2.0
Total	*100%*	*£20.1*	*£24.7*

10.2.3 What types of avoidable pre-prepared meal and snack waste are thrown away because too much has been cooked or prepared?

Mixed meals make up six-tenths (59.3%) by weight of avoidable pre-prepared meal and snack waste disposed of because too much has been cooked or prepared. Pre-prepared soups account for a further one-sixth (16.4%) of the weight. The table below gives the proportions and annual weight of avoidable pre-prepared meal and snack waste disposed of by households in Scotland because too much is cooked or prepared.

Table 117 The proportions and estimated annual weight of avoidable pre-prepared meal and snack waste from households in Scotland disposed of because too much is cooked or prepared

Type of pre-prepared meal and snack where too much is cooked or prepared	% of avoidable pre-prepared meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Mixed meals	59.3%	9460	12,150
Other pre-prepared meals/ snacks	16.7%	2680	3420
Soups	16.4%	120	3350
Pizzas	7.6%	1310	1560
Total	*100%*	*13,580*	*20,480*

Mixed meals make up more than six-tenths (61.0%) of the cost of avoidable pre-prepared meal and snack waste disposed of because too much has been cooked or prepared. Pizzas make up a further one-eighth (11.8%) of the cost. The table below gives the proportions and annual cost of avoidable pre-prepared meal and snack waste disposed of by households in Scotland because too much is cooked or prepared.

Table 118 The proportions and estimated annual cost of avoidable pre-prepared meal and snack waste from households in Scotland disposed of because too much is cooked or prepared

Type of pre-prepared meal and snack where too much is cooked or prepared	% of avoidable pre-prepared meal and snack waste cost	Cost (£M)	
		Council collected	Total
Mixed meals	61.0%	£43.4	£53.9
Other pre-prepared meals/ snacks	18.3%	£13.2	£16.2
Pizzas	11.8%	£8.8	£10.5
Soups	8.9%	£0.3	£7.8
Total	*100%*	*£65.7*	*£88.4*

10.3 What pre-prepared meal and snack items are thrown away in full packs and in-date?

Of the pre-prepared meals and snacks thrown away via council collections in full packs, one-sixth (16.7%) by weight and one-fifth (19.3%) by cost are in-date. The following table provides the proportion of pre-prepared meal and snack waste in full packs and in-date when disposed of.

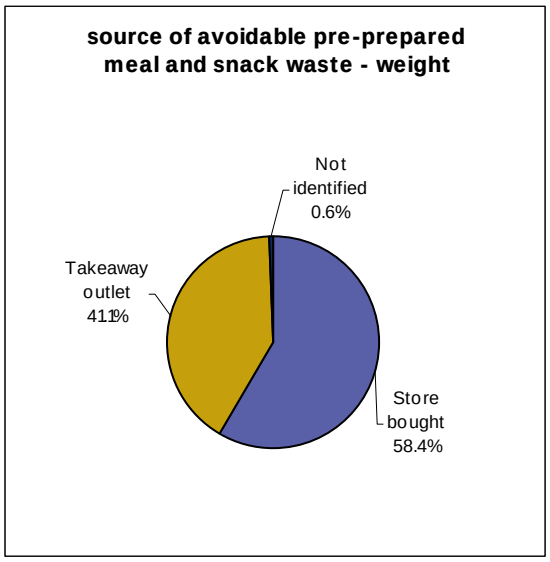
Table 119 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

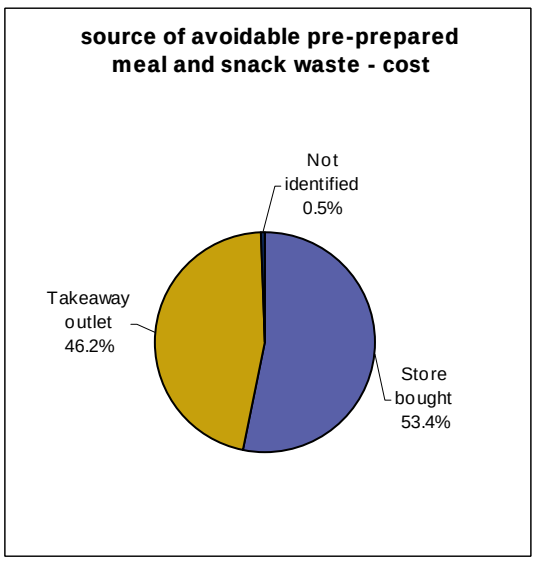
Food date of full packs of pre-prepared meals and snacks	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	16.7%	19.3%	550	£2.8
Out-of-date	83.3%	80.7%	2750	£11.9
Total full packs	*100%*	*100%*	*3300*	*£14.7*

10.4 How much avoidable pre-prepared meal and snack waste is from a store or takeaway?

Where there was adequate evidence, the source of the pre-prepared meals and snacks was identified during the compositional sort analysis. The following charts show that nearly six-tenths (58.4%) by weight derive from store-purchased items whilst just over four-tenths (41.1%) come from takeaway outlets. In terms of cost, more than half (53.4%) are pre-prepared meals and snacks purchased from a store and less than half (46.2%) are from takeaways.

Figures 62 and 63 The source of avoidable pre-prepared meal and snack waste





The following table provides information on the proportions of avoidable pre-prepared meal and snack waste according to its source, together with the estimated annual weight and cost for all methods of disposal by households in Scotland.

Table 120 The proportions, annual weight and annual cost of avoidable pre-prepared meal and snack waste in Scotland by source

Source	% of avoidable pre-prepared meal and snack waste weight	% of avoidable pre-prepared meal and snack waste cost	Weight (tonnes) per year	Cost (£M) per year
Store-bought	58.4%	53.4%	15,430	£60.3
Takeaway outlet	41.1%	46.2%	10,860	£52.2
Not identified	0.6%	0.5%	160	£0.5
Total	*100%*	*100%*	*26,450*	*£113.1*

10.5 Summary of chapter

This chapter has described in detail the amount and cost of pre-prepared meal and snack waste produced by households in Scotland.

- Mixed meals, such as shepherd's pie and lasagne are the most commonly disposed of pre-prepared meals and snacks. Avoidable mixed meals waste weighs 14,000 tonnes and costs Scottish households £65 million each year.

- More than three-quarters (77.4% by weight and 78.2% by cost) of pre-prepared meal and snack waste is thrown away because too much is cooked or prepared. The items most commonly thrown away for this reason are mixed meals.

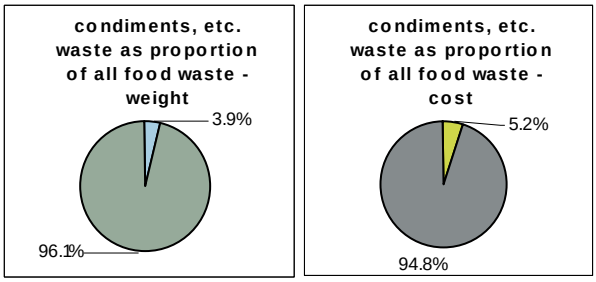
- Of all the pre-prepared meals and snacks disposed of in full packs via council collections, one-sixth (16.7%) by weight and one-fifth (19.3%) by cost are thrown away before the food date expires.

- Nearly six-tenths (58.4% by weight and 53.4% by cost) of pre-prepared meals and snacks are bought from a store, with the rest originating from a takeaway outlet.

11 Condiment, sauce, herb and spice waste

Figure 64 Examples of condiment and sauce waste found in household bins in Scotland

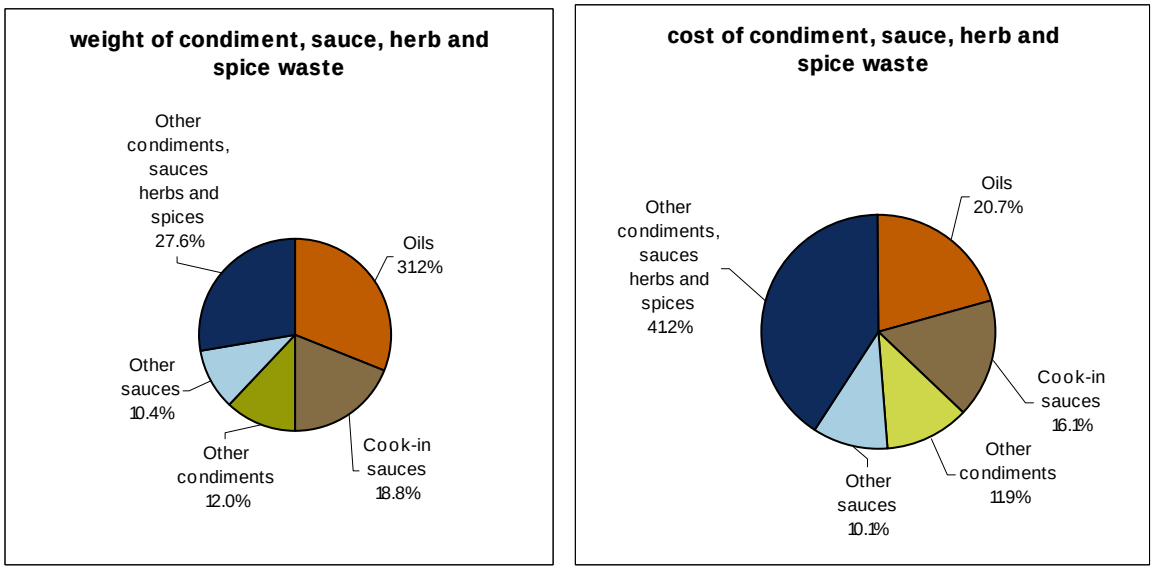
11.1 What types of condiment, sauce, herb and spice waste do households throw away?



11.1.1 Types of condiment, sauce, herb and spice waste

Condiment, sauce, herb and spice waste accounts for 3.9% of the weight and 5.2% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). Where these items were found in their container, the weight of the container is excluded from the numbers below.

Figures 65 and 66 How different types of food make up condiment, sauce, herb and spice waste



The above charts illustrate that, of the condiment, sauce, herb and spice waste generated, more than three-tenths (31.2%) by weight is made up of oils. Cook-in sauces make up more than one-sixth (18.8%) of the weight. In terms of cost, oils account for one-fifth (20.7%), whilst cook-in sauces make up one-sixth (16.1%). The tables below give the proportions, annual weight (Table 121) and annual cost (Table 122) of each food type making up condiment, sauce, herb and spice waste in Scotland. The proportions relate to all methods of disposal.

Table 121 The proportions and estimated annual weight of condiment, sauce, herb and spice waste from households in Scotland

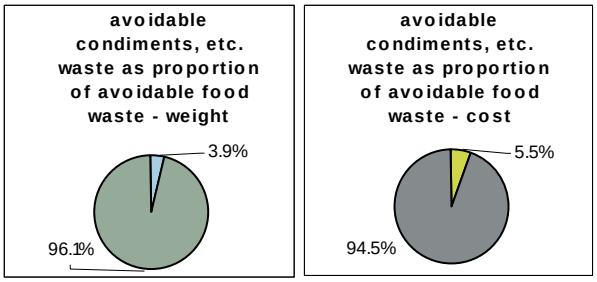
Type of condiment, sauce, herb and spice	% of all condiment, sauce, herb and spice waste weight	Weight (tonnes)	
		Council collected	Total
Oils	31.2%	360	6910
Other condiments, sauces, herbs and spices[28]	27.6%	2910	6140
Cook-in sauces	18.8%	400	4180
Other condiments	12.0%	1230	2650
Other sauces	10.4%	1360	2300
Total	*100% (3.9% of all waste)*	*6260*	*22,180*

Table 122 The proportions and estimated annual cost of condiment, sauce, herb and spice waste from households in Scotland

Type of condiment, sauce, herb and spice	% of all condiment, sauce, herb and spice waste cost	Cost (£M)	
		Council collected	Total
Other condiments, sauces, herbs and spices	41.2%	£16.5	£28.9
Oils	20.7%	£1.7	£14.6
Cook-in sauces	16.1%	£1.2	£11.4
Other condiments	11.9%	£5.5	£8.4
Other sauces	10.1%	£4.6	£7.1
Total	*100% (5.2% of avoidable waste)*	*£29.5*	*£70.4*

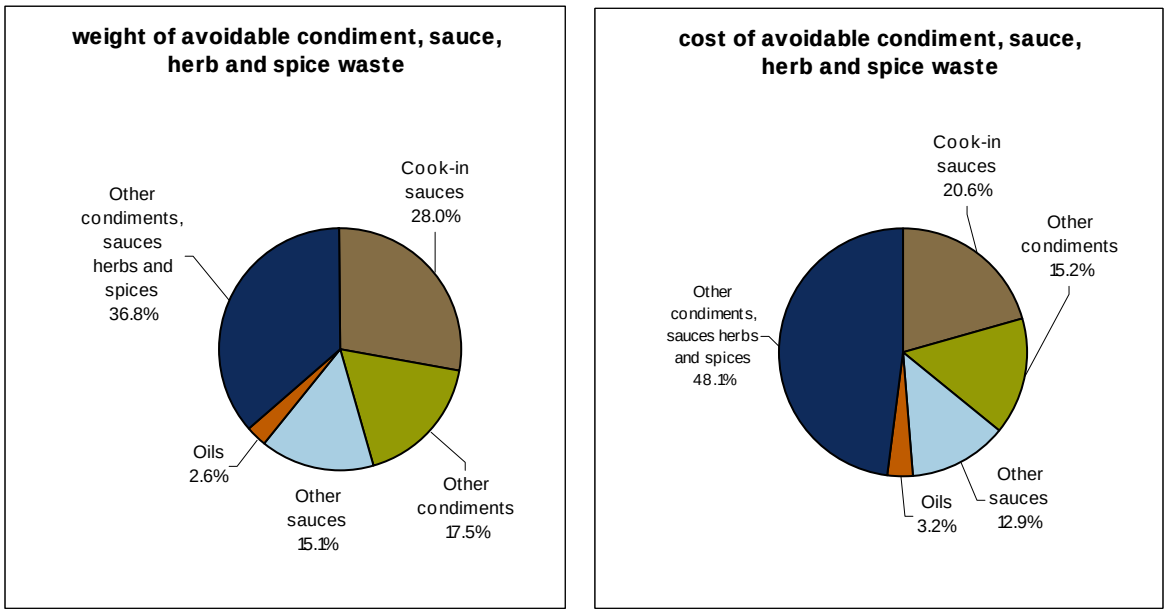
11.1.2 Types of avoidable condiment, sauce, herb and spice waste

Condiment, sauce, herb and spice waste accounts for 3.9% of the weight and 5.5% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households.



[28] *"Other condiments, sauces, herbs and spices" comprises Gravies, Dips, Mayonnaise/salad cream, Jams, Pickles, Olives, Ketchup, Sugar, Herbs and spices, Honey, Spreads and unclassifiable condiments. Unclassifiable refers to items that were rare in occurrence and/or could not be allocated a classification during the survey*

Figures 67 and 68 How different types of food make up avoidable condiment, sauce, herb and spice waste



The above charts illustrate that, of the avoidable condiment, sauce, herb and spice waste generated, more than a quarter (28.0%) by weight is made up of cook-in sauces. Cook-in sauces also make up the greatest proportion in terms of cost, at one-fifth (20.6%). The tables below give the proportions, annual weight (Table 123) and annual cost (Table 124) of each food type making up avoidable condiment, sauce, herb and spice waste in Scotland.

Table 123 The proportions and estimated annual weight of avoidable condiment, sauce, herb and spice waste from households in Scotland

Type of condiment, sauce, herb and spice	% of avoidable condiment, sauce, herb and spice waste weight	Weight (tonnes)	
		Council collected	Total
Other condiments, sauces, herbs and spices	36.8%	2850	5570
Cook-in sauces	28.0%	390	4250
Other condiments	17.5%	1200	2650
Other sauces	15.1%	1330	2290
Oils	2.6%	310	390
Total	*100% (3.9% of avoidable waste)*	*6080*	*15,150*

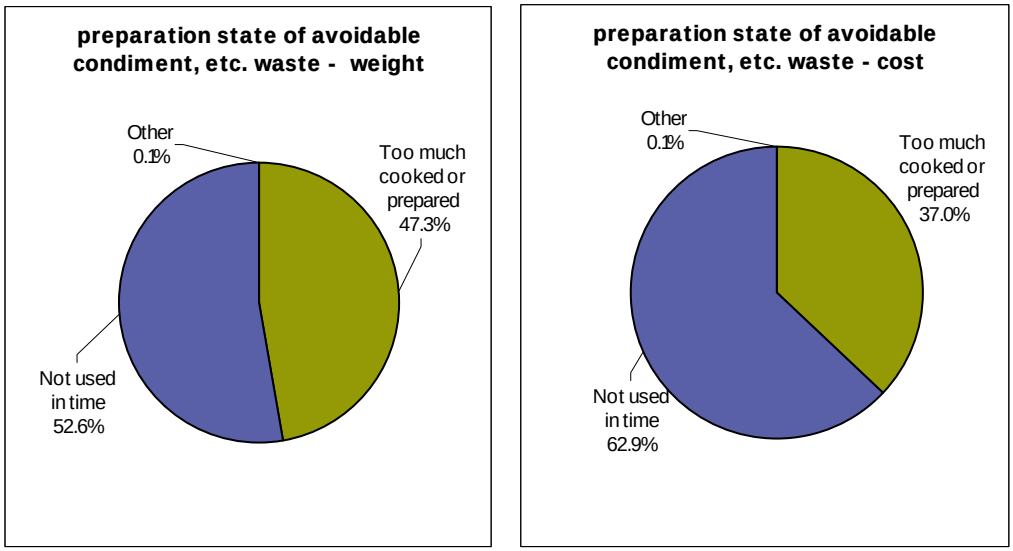
Table 124 The proportions and estimated annual cost of avoidable condiment, sauce, herb and spice waste from households in Scotland

Type of condiment, sauce, herb and spice	% of avoidable condiment, sauce, herb and spice waste cost	Cost (£M)	
		Council collected	Total
Other condiments, sauces, herbs and spices	48.1%	£16.0	£26.2
Cook-in sauces	20.6%	£1.2	£11.2
Other condiments	15.2%	£5.4	£8.3
Other sauces	12.9%	£4.5	£7.1
Oils	3.2%	£1.4	£1.8
Total	*100% (5.5% of avoidable waste)*	*£28.5*	*£54.6*

11.2 In what food preparation state is avoidable condiment etc waste thrown away?

11.2.1 Food preparation state of avoidable condiment, sauce, herb and spice waste

Figures 69 and 70 How different food preparation states make up avoidable condiment, sauce, herb and spice waste



The above charts illustrate that, of the avoidable condiment, sauce, herb and spice waste generated, in terms of weight, more than half (52.6%) is not used in time or is no longer needed. Almost half (47.3%) by weight is made up of items wasted because too much has been cooked or prepared. In terms of cost, more than six-tenths (62.9%) is not used in time and less than four-tenths (37.0%) is made up of items wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 125) and annual cost (Table 126) of condiment, sauce, herb and spice waste in Scotland by food preparation state.

Table 125 The proportions and estimated annual weight of avoidable condiment, sauce, herb and spice waste from households in Scotland by food preparation state

Food preparation state	% of avoidable condiment, sauce, herb and spice waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	52.6%	5500	7970
Too much cooked or prepared	47.3%	570	7170
Other	0.1%	10	10
Total	*100%*	*6080*	*15,150*

Table 126 The proportions and estimated annual cost of avoidable condiment, sauce, herb and spice waste from households in Scotland by food preparation state

Food preparation state	% of avoidable condiment, sauce, herb and spice waste cost	Cost (£M)	
		Council collected	Total
Not used in time	62.9%	£26.2	£34.4
Too much cooked or prepared	37.0%	£2.3	£20.2
Other	0.1%	<£0.1	<£0.1
Total	*100%*	*£28.5*	*£54.6*

11.2.2 What types of avoidable condiment, sauce, herb and spice waste are thrown away because they are not used in time?

Excluding items that did not appear in significant quantities (collectively categorised as 'other condiments, sauces, herbs and spices'). 'other condiments' (e.g. marinades, mustards and bouillon) and 'other sauces' (e.g. chilli sauce, pepper sauce and sweet and sour sauce) which appeared too infrequently to be categorised separately make up the largest proportions of waste by weight and cost. Cook-in sauces account for one-tenth (10.9%) by weight of the condiments, sauces, herbs and spices thrown away because they are not used in time. The table below gives the proportions and annual weight of avoidable condiment, sauce, herb and spice waste disposed of by households in Scotland because it is not used in time.

Table 127 The proportions and estimated annual weight of avoidable condiment, sauce, herb and spice waste from households in Scotland not used in time

Type of condiment, sauce, herb and spice not used in time	% of avoidable condiment, sauce, herb and spice waste weight	Weight (tonnes)	
		Council collected	Total
Other condiments, sauces, herbs and spices	44.7%	2690	3570
Other condiments	23.3%	1180	1850
Other sauces	18.0%	1060	1430
Cook-in sauces	10.9%	360	870
Oils	3.1%	210	250
Total	*100%*	*5500*	*7970*

The table below gives the proportions and annual cost of avoidable condiment, sauce, herb and spice waste disposed of by households in Scotland because it is not used in time.

Table 128 The proportions and estimated annual cost of avoidable condiment, sauce, herb and spice waste from households in Scotland not used in time

Type of condiment, sauce, herb and spice not used in time	% of avoidable condiment, sauce, herb and spice waste cost	Cost (£M)	
		Council collected	Total
Other condiments, sauces, herbs and spices	54.3%	£15.1	£18.7
Other condiments	21.2%	£5.3	£7.3
Other sauces	15.0%	£3.9	£5.2
Cook-in sauces	6.7%	£1.1	£2.3
Oils	2.8%	£0.8	£0.9
Total	*100%*	*£26.2*	*£34.4*

11.2.3 What types of avoidable condiment, sauce, herb and spice waste are thrown away because too much has been cooked or prepared?

Cook-in sauces make up nearly a half (47.2%) by weight of avoidable condiment, sauce, herb and spice waste disposed of because too much has been cooked or prepared. The table below gives the proportions and annual weight of avoidable condiment, sauce, herb and spice waste disposed of by households in Scotland because too much is cooked or prepared.

Table 129 The proportions and estimated annual weight of avoidable condiment, sauce, herb and spice waste from households in Scotland disposed of because too much is cooked or prepared

Type of condiment, sauce, herb and spice where too much is cooked or prepared	% of avoidable condiment, sauce, herb and spice waste weight	Weight (tonnes)	
		Council collected	Total
Cook-in sauces	47.2%	40	3380
Other condiments, sauces, herbs and spices	28.0%	150	2010
Other sauces	11.8%	260	840
Other condiments	11.1%	30	800
Oils	2.0%	90	140
Total	*100%*	*570*	*7170*

Cook-in sauces make up more than four-tenths (44.3%) of the cost of avoidable condiment, sauce, herb and spice waste disposed of because too much has been cooked or prepared. The table below gives the proportions and annual cost of avoidable condiment, sauce, herb and spice waste disposed of by households in Scotland because too much is cooked or prepared.

Table 130 The proportions and estimated annual cost of avoidable condiment, sauce, herb and spice waste from households in Scotland disposed of because too much is cooked or prepared

Type of condiment, sauce, herb and spice where too much is cooked or prepared	% of avoidable condiment, sauce, herb and spice waste cost	Cost (£M)	
		Council collected	All methods of disposal
Cook-in sauces	44.3%	£0.1	£8.9
Other condiments, sauces, herbs and spices	37.2%	£0.9	£7.6
Other sauces	9.3%	£0.6	£1.9
Other condiments	5.2%	£0.1	£1.0
Oils	4.0%	£0.6	£0.8
Total	*100%*	*£2.3*	*£20.2*

11.3 What condiment etc items are thrown away in full packs and in-date?

Of the condiments, sauces, herbs and spices thrown away via council collections in full packs, more than one-sixth by weight and cost (17.9% and 16.8% respectively) are in-date. The following table provides the proportion of condiments, sauces, herbs and spices in full packs and in-date when disposed of.

Table 131 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of condiments, sauces, herbs and spices	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	17.9%	16.8%	170	£0.8
Out-of-date	82.1%	83.2%	780	£3.8
Total full packs	*100%*	*100%*	*950*	*£4.5*

11.4 Summary of chapter

This chapter has described in detail the amount and cost of condiment, sauce, herb and spice waste produced by households in Scotland.

- Cook-in sauces are the most commonly disposed of condiments, sauces, herbs and spices, making up more than a quarter (28.0%) of the weight of all avoidable condiment, sauce, herb and spice waste. This cook-in sauce waste weighs more than 4000 tonnes and costs Scottish households more than £10 million each year.

- More than half (52.6% by weight and 62.9% by cost) of condiment, sauce, herb and spice waste is thrown away because it is not used in time or is no longer wanted. Cook-in sauces are the most commonly thrown-away items for this reason.

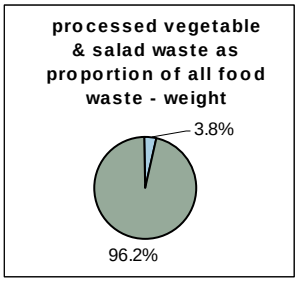
- Of all the condiments, sauces, herbs and spices disposed of in full packs via council collections, more than one-sixth by weight and cost (17.9% and 16.8% respectively) is thrown away before the food date expires.

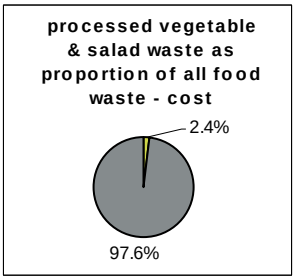
12 Processed vegetable and salad waste

Figure 71 Examples of processed vegetable and salad waste found in household bins in Scotland

12.1 What types of processed vegetable and salad waste do households throw away?

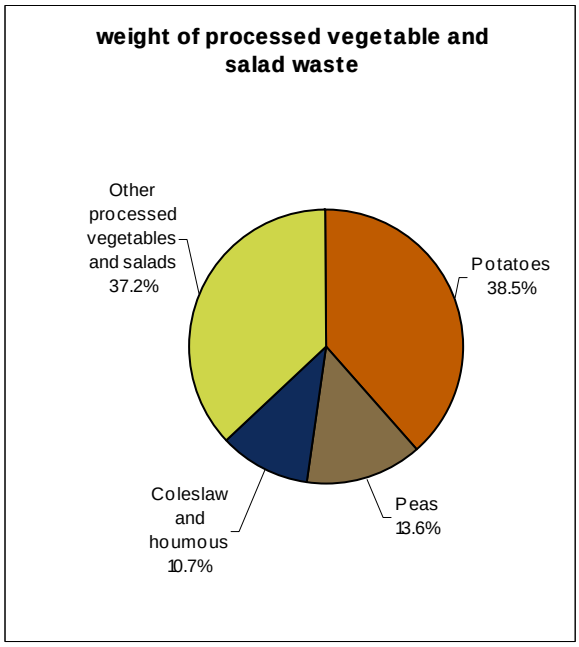
12.1.1 Types of processed vegetable and salad waste

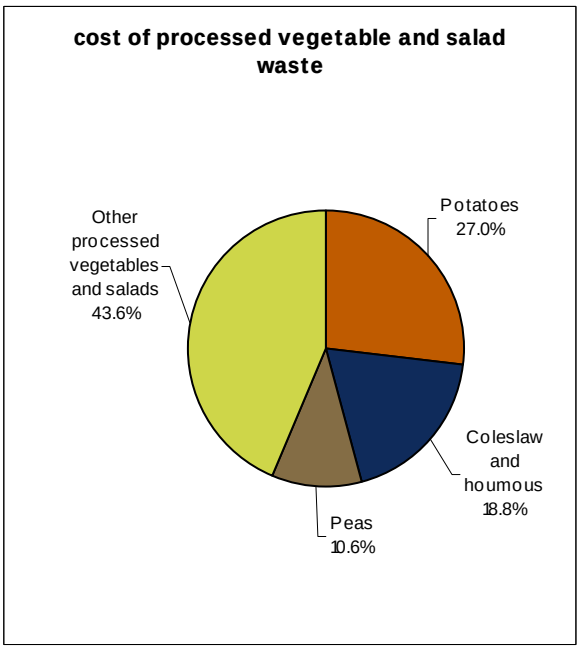




Processed vegetable and salad waste accounts for 3.8% of the weight and 2.4% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). Processed vegetables and salads incorporate items that are not bought fresh, such as tinned vegetables, chips, potato salads, pickled onions and coleslaws.

Figures 72 and 73 How different types of food make up processed vegetable and salad waste





The above charts illustrate that, of the processed vegetable and salad waste generated, nearly four-tenths (38.5%) by weight is made up of potatoes; more than eight-tenths (82.3%) of these potatoes are chips. Peas make up more than one-eighth (13.6%). Coleslaw and houmous make up a further one-tenth (10.7%) of the weight (coleslaw accounts for 90.1% of this amount). In terms of cost, potatoes account for more than a quarter (27.0%), of which chips account for more than three-quarters (77.5%).

The tables below give the proportions, annual weight (Table 132) and annual cost (Table 133) of each food type making up processed vegetable and salad waste in Scotland. The proportions relate to all methods of disposal.

Table 132 The proportions and estimated annual weight of processed vegetable and salad waste from households in Scotland

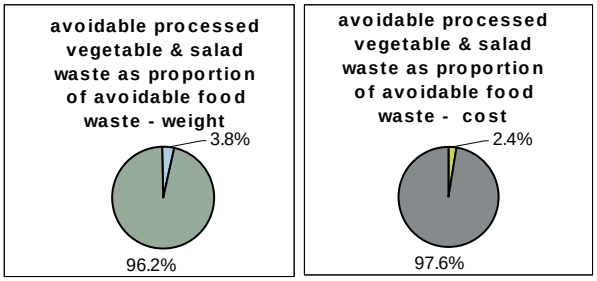
Type of processed vegetable and salad	% of all processed vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Potatoes (82.3% chips)	38.5%	5380	8350
Other processed vegetables and salads[29]	37.2%	2270	8060
Peas	13.6%	120	2950
Coleslaw and houmous (90.1% coleslaw)	10.7%	1930	2320
Total	*100% (3.8% of all waste)*	*9700*	*21,680*

Table 133 The proportions and estimated annual cost of processed vegetable and salad waste from households in Scotland

Type of processed vegetable and salad	% of all processed vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Other processed vegetables and salads	43.6%	£5.2	£13.9
Potatoes (77.5% chips)	27.0%	£5.8	£8.6
Coleslaw and houmous (80.7% coleslaw)	18.7%	£5.0	£6.0
Peas	10.6%	£0.2	£3.4
Total	*100% (2.4% of all waste)*	*£16.1*	*£31.9*

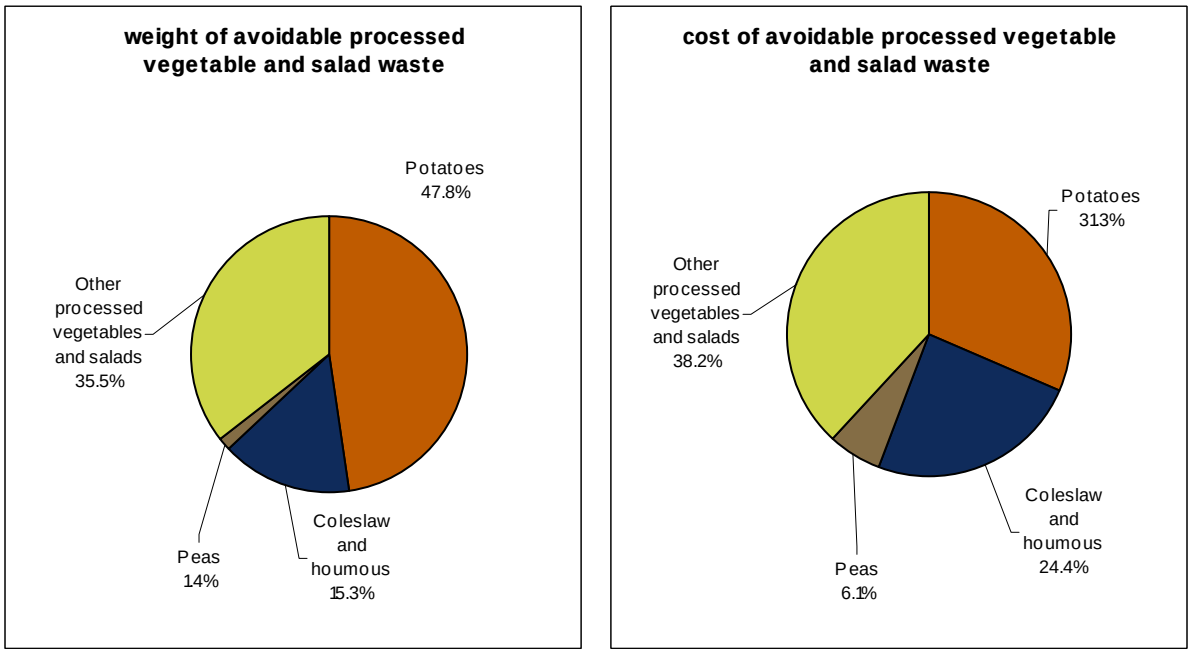
12.1.2 Types of avoidable processed vegetable and salad waste

Processed vegetable and salad waste accounts for 3.8% of the weight and 2.4% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households.



[29] *Comprises Baked beans, Beans, Tomatoes, Onions, Sweetcorn, Mixed vegetables, Beetroot, unclassified processed vegetables, Carrots, Sandwich spreads, Mixed salads, Potato salad, unclassified processed salads, Mushrooms, Peppers. Unclassified processed vegetables and salads refer to items that were rare in occurrence and/or could not be classified during the survey*

Figures 74 and 75 How different types of food make up avoidable processed vegetable and salad waste



The above charts illustrate that, of the avoidable processed vegetable and salad waste generated, in terms of weight, nearly half (47.8%) is made up of potatoes; more than eight-tenths (82.5%) of the potatoes are chips. Coleslaw and houmous make up nearly one-sixth (15.3%), with coleslaw accounting for most (90.1%) of this amount. In terms of cost, potatoes account for more than three-tenths (31.3%), of which more than three-quarters (77.6%) are chips.

The tables below give the proportions, annual weight (Table 134) and annual cost (Table 135) of each food type making up avoidable processed vegetable and salad waste in Scotland.

Table 134 The proportions and estimated annual weight of avoidable processed vegetable and salad waste from households in Scotland

Type of processed vegetable and salad	% of avoidable processed vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Potatoes (82.5% chips)	47.8%	5260	7080
Other processed vegetables and salads	35.5%	2230	5260
Coleslaw and houmous (90.1% coleslaw)	15.3%	1880	2260
Peas	1.4%	120	210
Total	*100% (3.8% of avoidable waste)*	*9490*	*14,810*

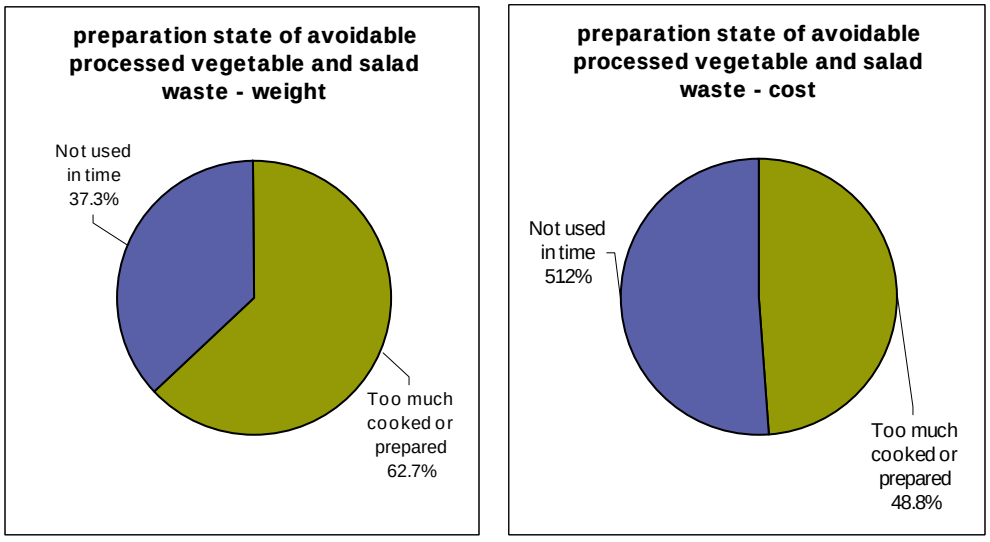
Table 135 The proportions and estimated annual cost of avoidable processed vegetable and salad waste from households in Scotland

Type of processed vegetable and salad	% of avoidable processed vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Other processed vegetables and salads	38.2%	£5.1	£9.2
Potatoes (77.6% chips)	31.3%	£5.8	£7.6
Coleslaw and houmous (80.6% coleslaw)	24.4%	£4.9	£5.9
Peas	6.1%	£0.2	£1.5
Total	*100% (10.4% of avoidable waste)*	*£16.0*	*£24.2*

12.2 In what food preparation state is avoidable processed vegetable and salad waste thrown away?

12.2.1 Food preparation state of avoidable processed vegetable and salad waste

Figures 76 and 77 How different food preparation states make up avoidable processed vegetable and salad waste



The above charts illustrate that, of the avoidable processed vegetable and salad waste generated, more than six-tenths (62.7%) by weight is made up of items wasted because too much has been cooked or prepared, and more than one-third (37.3%) is not used in time. In terms of cost, more than half (51.2%) is made up of items not used in time, whilst nearly half (48.8%) is wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 157) and annual cost (Table 158) of processed vegetable and salad waste in Scotland by food preparation state.

Table 136 The proportions and estimated annual weight of avoidable processed vegetable and salad waste from households in Scotland by food preparation state

Food preparation state	% of avoidable processed vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Too much cooked or prepared	62.7%	4860	9280
Not used in time	37.3%	4630	5530
Total	*100%*	*9490*	*14,810*

Table 137 The proportions and estimated annual cost of avoidable processed vegetable and salad waste from households in Scotland by food preparation state

Food preparation state	% of avoidable processed vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Not used in time	51.2%	£10.3	£12.4
Too much cooked or prepared	48.8%	£5.6	£11.8
Total	*100%*	*£16.0*	*£24.2*

12.2.2 What types of avoidable processed vegetable and salad waste are thrown away because they are not used in time?

Coleslaw and houmous make up more than one-third (35.8%) by weight of the processed vegetables and salads thrown away because they are not used in time, and potatoes account for a further quarter (25.4%). The table below gives the proportions and annual weight of avoidable processed vegetable and salad waste disposed of by households in Scotland because it is not used in time.

Table 138 The proportions and estimated annual weight of avoidable processed vegetable and salad waste from households in Scotland not used in time

Type of processed vegetable and salad not used in time	% of avoidable processed vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Other processed vegetables and salads	37.1%	1690	2050
Coleslaw and houmous	35.8%	1650	1980
Potatoes	25.4%	1180	1410
Peas	1.7%	80	90
Total	*100%*	*4600*	*5530*

Coleslaw and houmous make up more than four-tenths (42.8%) of the cost of the processed vegetables and salads thrown away because they are not used in time; potatoes account for a further one-seventh (14.5%). The table below gives the proportions and annual cost of avoidable processed vegetable and salad waste disposed of by households in Scotland because it is not used in time.

Table 139 The proportions and estimated annual cost of avoidable processed vegetable and salad waste from households in Scotland not used in time

Type of processed vegetable and salad not used in time	% of avoidable processed vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Coleslaw and houmous	42.8%	£4.4	£5.3
Other processed vegetables and salads	41.9%	£4.2	£5.2
Potatoes	14.5%	£1.5	£1.8
Peas	0.8%	£0.1	£0.1
Total	*100%*	*£10.2*	*£12.4*

12.2.3 What types of avoidable processed vegetable and salad waste are thrown away because too much has been cooked or prepared?

Potatoes make up over a half (55.2%) by weight of avoidable processed vegetable and salad waste disposed of because too much has been cooked or prepared. The table below gives the proportions and annual weight of avoidable processed vegetable and salad waste disposed of by households in Scotland because too much is cooked or prepared.

Table 140 The proportions and estimated annual weight of avoidable processed vegetable and salad waste from households in Scotland disposed of because too much is cooked or prepared

Type of processed vegetable and salad where too much is cooked or prepared	% of avoidable processed vegetable and salad waste weight	Weight (tonnes)	
		Council collected	Total
Potatoes	55.2%	4080	5120
Other processed vegetables and salads	40.6%	520	3760
Coleslaw and houmous	3.1%	230	290
Peas	1.2%	40	110
Total	*100%*	*4860*	*9280*

Potatoes account for more than four-tenths (44.9%) of the cost of the processed vegetables and salads thrown away because too much has been cooked or prepared. The table below gives the proportions and annual cost of avoidable processed vegetable and salad waste disposed of by households in Scotland because too much is cooked or prepared.

Table 141 The proportions and estimated annual cost of avoidable processed vegetable and salad waste from households in Scotland disposed of because too much is cooked or prepared

Type of processed vegetable and salad where too much is cooked or prepared	% of avoidable processed vegetable and salad waste cost	Cost (£M)	
		Council collected	Total
Potatoes	44.9%	£4.2	£5.3
Other processed vegetables and salads	48.0%	£0.7	£5.7
Coleslaw and houmous	5.9%	£0.6	£0.7
Peas	1.2%	<£0.1	£0.1
Total	*100%*	*£5.6*	*£11.8*

12.3 What processed vegetable and salad items are thrown away in full packs and in-date?

Of the processed vegetables and salads thrown away via council collections in full packs, around one-eighth by weight and cost (12.0% and 13.8% respectively) are in-date. The following table provides the proportion of processed vegetable and salad waste in full packs and in-date when disposed of.

Table 142 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of processed vegetables and salads	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	12.0%	13.8%	160	£0.4
Out-of-date	88.0%	86.2%	1190	£2.6
Total full packs	*100%*	*100%*	*1350*	*£3.1*

12.4 Summary of chapter

This chapter has described in detail the amount and cost of processed vegetable and salad waste produced by households in Scotland.

- Potatoes (predominantly chips) are the most commonly disposed of processed vegetables and salads, making up nearly half (47.8%) of the weight of all avoidable processed vegetable and salad waste. This potato waste weighs more than 7000 tonnes and costs Scottish households more than £7 million each year.

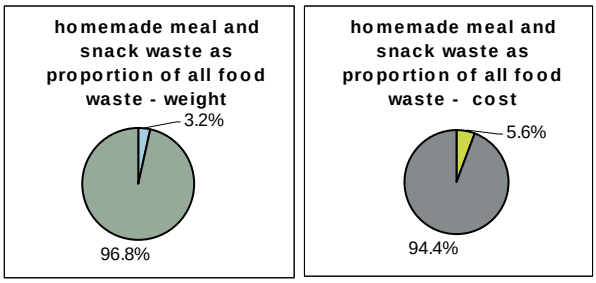
- More than six-tenths (62.7% by weight and 48.8% by cost) of processed vegetable and salad waste is thrown away because too much has been cooked or prepared. Potatoes are the most commonly thrown away processed vegetable and salad item for this reason.

- Of all the processed vegetable and salad waste disposed of in full packs via council collections, around one-eighth by weight and cost (12.0% and 13.8% respectively) is thrown away before the food date expires.

13 Homemade meal and snack waste

Figure 78 Example of homemade meal waste found in household bins in Scotland

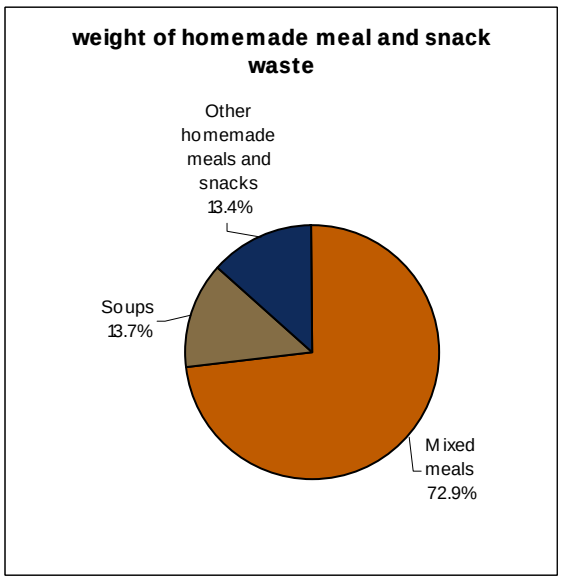
13.1 What types of homemade meal and snack waste do households throw away?

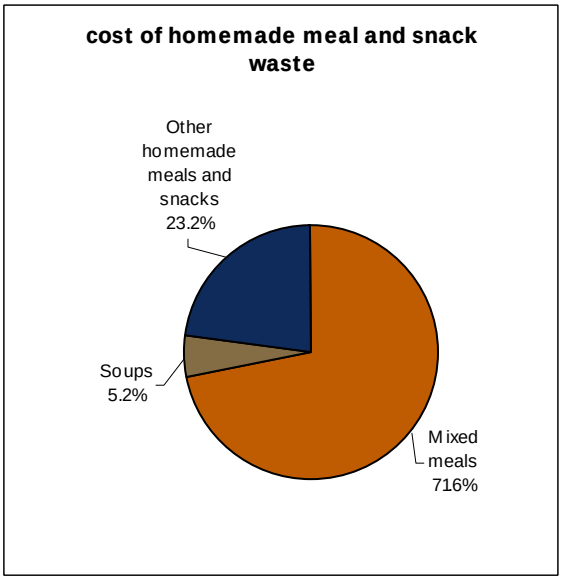


13.1.1 Types of homemade meal and snack waste

Food waste that consisted of two or more food groups (e.g. a pizza) was categorised as mixed meals and snacks during the sort analysis process. Using the information provided by the sorters, analysts at Exodus Research re-categorised these items to indicate whether they were 'homemade' or 'pre-prepared'. Where there was inadequate information, items were classed as 'other'. Homemade meal and snack waste accounts for 3.2% of the weight and 5.6% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). Nearly all (98.0%) of homemade meal and snack waste is avoidable in that it could have been eaten if it had been better prepared or managed.

Figures 79 and 80 How different types of food make up homemade meal and snack waste





The above charts illustrate that, of the homemade meal and snack waste generated, nearly three-quarters (72.9%) by weight is made up of homemade meals such as shepherd's pie or lasagne. In terms of cost, homemade meals make up more than seven-tenths (71.6%) of homemade meal and snack waste.

The tables below give the proportions, annual weight (Table 143) and annual cost (Table 144) of each food type making up homemade meal and snack waste in Scotland. The proportions relate to all methods of disposal.

Table 143 The proportions and estimated annual weight of homemade meal and snack waste from households in Scotland

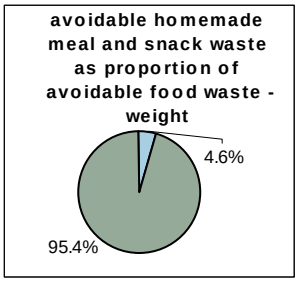
Type of homemade meal and snack	% of all homemade meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Mixed meals	72.9%	10,710	13,340
Soups	13.7%	110	2510
Other homemade meals/snacks[30]	13.4%	1930	2,440
Total	*100% (3.2% of all waste)*	*12,740*	*18,270*

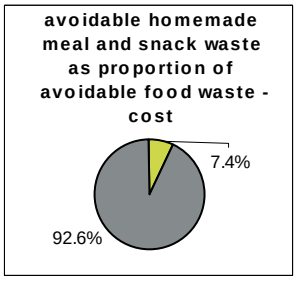
Table 144 The proportions and estimated annual cost of homemade meal and snack waste from households in Scotland

Type of homemade meal and snack	% of all homemade meal and snack waste cost	Cost (£M)	
		Council collected	Total
Mixed meals	71.6%	£42.9	£53.9
Other homemade meals/snacks	23.2%	£14.1	£17.5
Soups	5.2%	£0.2	£3.9
Total	*100% (5.6% of avoidable waste)*	*£57.2*	*£75.3*

13.1.2 Types of avoidable homemade meal and snack waste

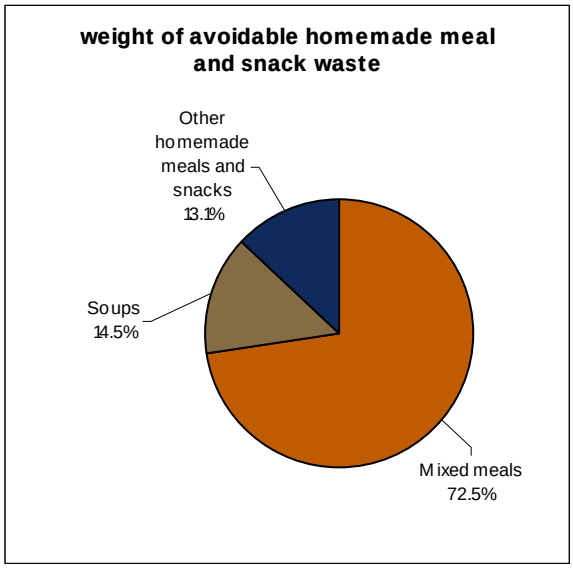
Homemade meal and snack waste accounts for 4.6% of the weight and 7.4% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households.

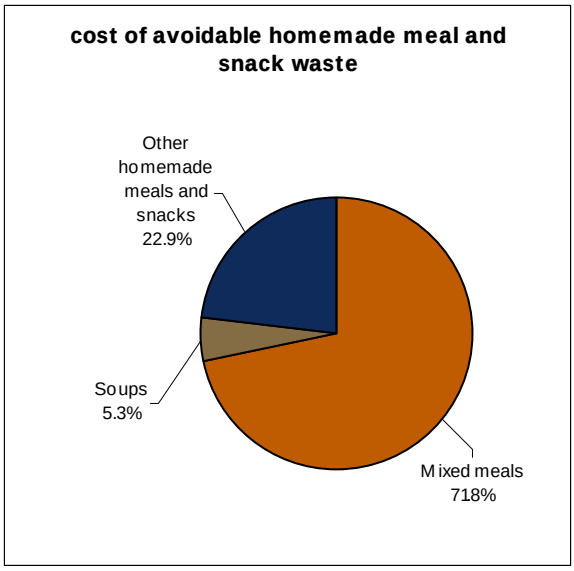




[30] *Comprises Sandwiches, Stews, Mixed foods, Pizzas and Snacks and Unclassified meals/snacks. Unclassified meals/snacks refers to items that were rare in occurrence and/or could not be allocated a classification during the survey*

Figures 81 and 82 How different types of food make up avoidable homemade meal and snack waste





The above charts illustrate that, of the avoidable homemade meal and snack waste generated, more than seven-tenths (72.5%) by weight is made up of homemade meals. In terms of cost, homemade meals make up more than seven-tenths (71.8%). The tables below give the proportions, annual weight (Table 145) and annual cost (Table 146) of each food type making up avoidable homemade meal and snack waste in Scotland.

Table 145 The proportions and estimated annual weight of avoidable homemade meal and snack waste from households in Scotland

Type of homemade meal and snack	% of avoidable homemade meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Mixed meals	72.5%	10,410	12,980
Soups	14.5%	100	2590
Other homemade meals and snacks	13.1%	1840	2340
Total	*100% (4.6% of avoidable waste)*	*12,350*	*17,920*

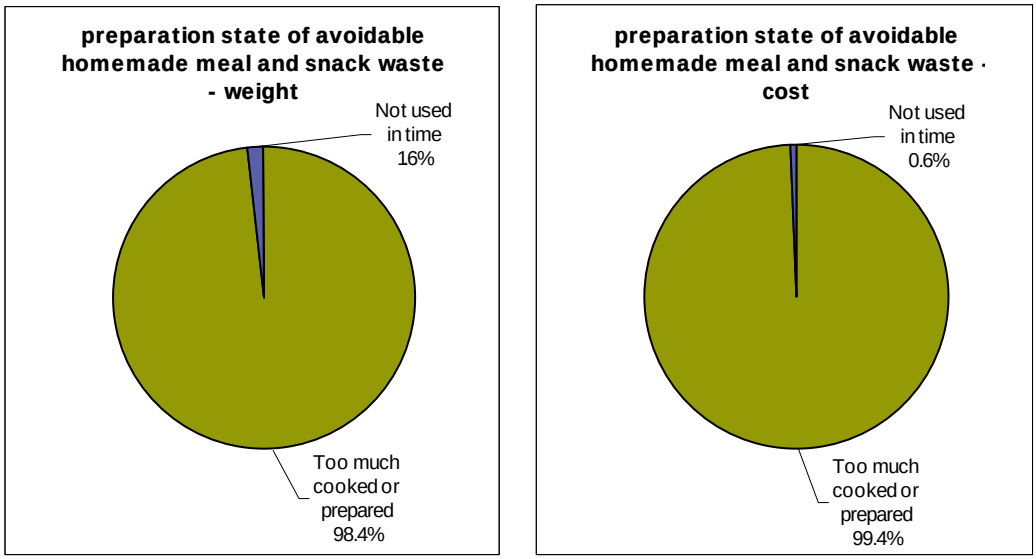
Table 146 The proportions and estimated annual cost of avoidable homemade meal and snack waste from households in Scotland

Type of homemade meal and snack	% of avoidable homemade meal and snack waste cost	Cost (£M)	
		Council collected	Total
Mixed meals	71.8%	£42.4	£53.3
Other homemade meals and snacks	22.9%	£13.8	£17.0
Soups	5.3%	£0.2	£3.9
Total	*100% (7.4% of avoidable waste)*	*£56.3*	*£74.3*

13.2 In what food preparation state is avoidable homemade meal and snack waste thrown away?

13.2.1 Food preparation state of avoidable homemade meal and snack waste

Figures 83 and 84 How different food preparation states make up avoidable homemade meal and snack waste



The above charts illustrate that, of the avoidable homemade meal and snack waste generated, nearly all by weight (98.4%) and by cost (99.4%) is made up of items wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 170) and annual cost (Table 171) of avoidable homemade meal and snack waste in Scotland by food preparation state.

Table 147 The proportions and estimated annual weight of avoidable homemade meal and snack waste from households in Scotland by food preparation state

Food preparation state	% of avoidable homemade meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Too much cooked or prepared	98.4%	12,350	17,620
Not used in time	1.6%	0	290
Total	*100%*	*12,350*	*17,920*

Table 148 The proportions and estimated annual cost of avoidable homemade meal and snack waste from households in Scotland by food preparation state

Food preparation state	% of avoidable homemade meal and snack waste cost	Cost (£M)	
		Council collected	Total
Too much cooked or prepared	99.4%	£56.3	£73.9
Not used in time	0.6%	£0.0	£0.4
Total	*100%*	*£56.3*	*£74.3*

13.2.2 *What types of avoidable homemade meal and snack waste are thrown away because they are not used in time?*

All of the avoidable homemade meal and snack waste thrown away because it is not used in time or is no longer needed is made up of soups. The tables below give the proportions and annual weight (Table 172) and annual cost (Table 173) of avoidable homemade meal and snack waste disposed of by households in Scotland because it is not used in time.

Table 149 The proportions and estimated annual weight of avoidable homemade meal and snack waste from households in Scotland not used in time

Type of homemade meal and snack not used in time	% of avoidable homemade meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Soups	100%	0	290
Total	*100%*	*0*	*290*

Table 150 The proportions and estimated annual cost of avoidable homemade meal and snack waste from households in Scotland not used in time

Type of homemade meal and snack not used in time	% of avoidable homemade meal and snack waste cost	Cost (£M)	
		Council collected	Total
Soups	100%	£0.0	£0.4
Total	*100%*	*£0.0*	*£0.4*

13.2.3 *What types of avoidable homemade meal and snack waste are thrown away because too much has been cooked or prepared?*

Homemade meals make up nearly three-quarters (73.7%) by weight of the avoidable homemade meal and snack waste disposed of because too much has been cooked or prepared. The table below gives the proportions and annual weight of avoidable homemade meal and snack waste disposed of by households in Scotland because too much is cooked or prepared.

Table 151 The proportions and estimated annual weight of avoidable homemade meal and snack waste from households in Scotland disposed of because too much is cooked or prepared

Type of homemade meal and snack where too much is cooked or prepared	% of avoidable homemade meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Mixed meals	73.7%	10,410	12,980
Other homemade meals and snacks	13.3%	1840	2340
Soups	13.0%	100	2300
Total	*100%*	*12,350*	*17,620*

Homemade meals make up more than seven-tenths (71.2%) by cost of the avoidable homemade meal and snack waste disposed of because too much has been cooked or prepared. Pasta meals account for the largest individual proportion, making up more than one-sixth (17.4%). The table below gives the proportions and annual cost of avoidable homemade meal and snack waste disposed of by households in Scotland because too much is cooked or prepared.

Table 152 The proportions and estimated annual cost of avoidable homemade meal and snack waste from households in Scotland disposed of because too much is cooked or prepared

Type of homemade meal and snack where too much has been cooked or prepared	% of avoidable homemade meal and snack waste cost	Cost (£M)	
		Council collected	Total
Mixed meals	70.4%	£42.4	£52.0
Other homemade meals and snacks	22.7%	£13.8	£16.8
Soups	6.9%	£0.2	£5.1
Total	*100%*	*£56.3*	*£73.9*

13.3 What homemade meal and snack items are thrown away in-date?

Due to their source, none of the meals and snacks that are homemade are thrown away in-date. Although some may be thrown away when still fit for consumption, it is not possible to identity these from the waste collected via the council services.

13.4 Summary of chapter

This chapter has described in detail the amount and cost of homemade meal and snack waste produced by households in Scotland.

- Mixed meals are the most commonly disposed of homemade meals and snacks, making up more than seven tenths (72.9%) of the weight of all homemade meal and snack avoidable waste. These homemade meals weigh 13,000 tonnes and cost Scottish households more than £50 million each year.

- Nearly all (98.4% by weight and 99.4% by cost) of homemade meal and snack waste is thrown away because too much is cooked or prepared.

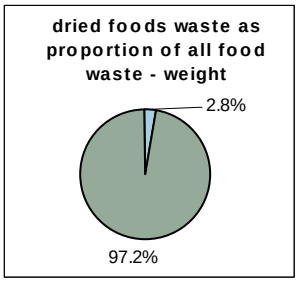
14 Dried foods waste

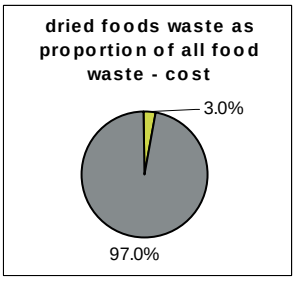
Figure 85 Examples of cooked pasta waste found in household bins in Scotland

14.1 What types of dried foods waste do households throw away?

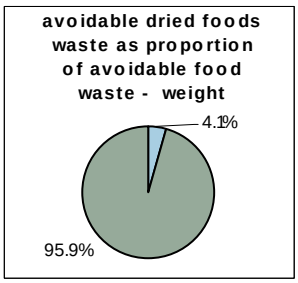
14.1.1 Types of dried foods waste

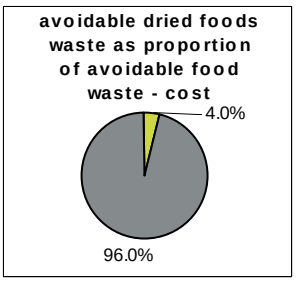
Dried foods waste accounts for 2.8% of the weight and 3.0% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc).





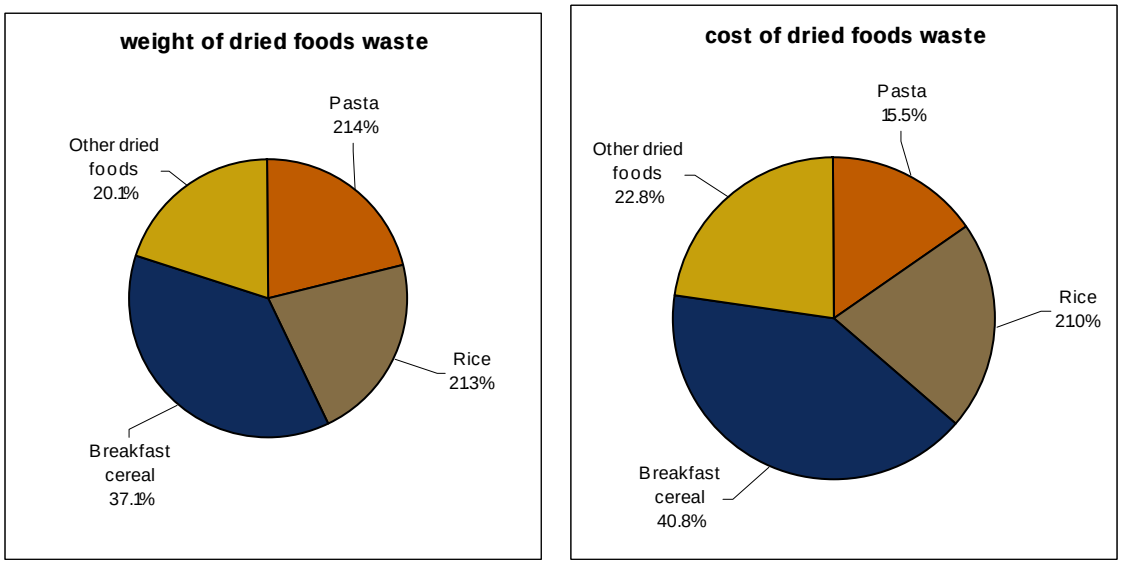
All of the dried foods waste is considered avoidable in that it could have been consumed if it had been better stored or managed. Dried foods make up 4.1% of the weight and 4.0% of the cost of avoidable food and drink waste disposed of (via all methods) in Scotland.





It should be noted that the waste within this food group includes dried foods such as rice and pasta that may be cooked prior to disposal; the weights associated with the cooked rice and pasta waste are cooked weights. The costs, however, are adjusted to reflect the original purchase cost of the dried foods.

Figures 86 and 87 How different types of food make up dried foods waste



The above charts illustrate that, of the dried foods waste generated, more than one-third (37.1%) by weight is made up of breakfast cereal. More than one-fifth is made up by pasta (21.4%) and by rice (21.3%). In terms of cost, four-tenths (40.8%) is made up of breakfast cereal and more than one-fifth (21.0%) is rice.

The tables below give the proportions, annual weight (Table 153) and annual cost (Table 154) of each food type making up dried foods waste in Scotland. The proportions relate to all methods of disposal.

Table 153 The proportions and estimated annual weight of dried foods waste from households in Scotland

Type of dried food	% of dried foods waste weight	Weight (tonnes)	
		Council collected	Total
Breakfast cereal	37.1%	1340	5920
Pasta	21.4%	2160	3410
Rice	21.3%	1860	3400
Other dried foods[31]	20.1%	2640	3200
Total	*100% (2.8% of all waste and 4.1% of avoidable waste)*	*7990*	*15,940*

Table 154 The proportions and estimated annual cost of dried foods waste from households in Scotland

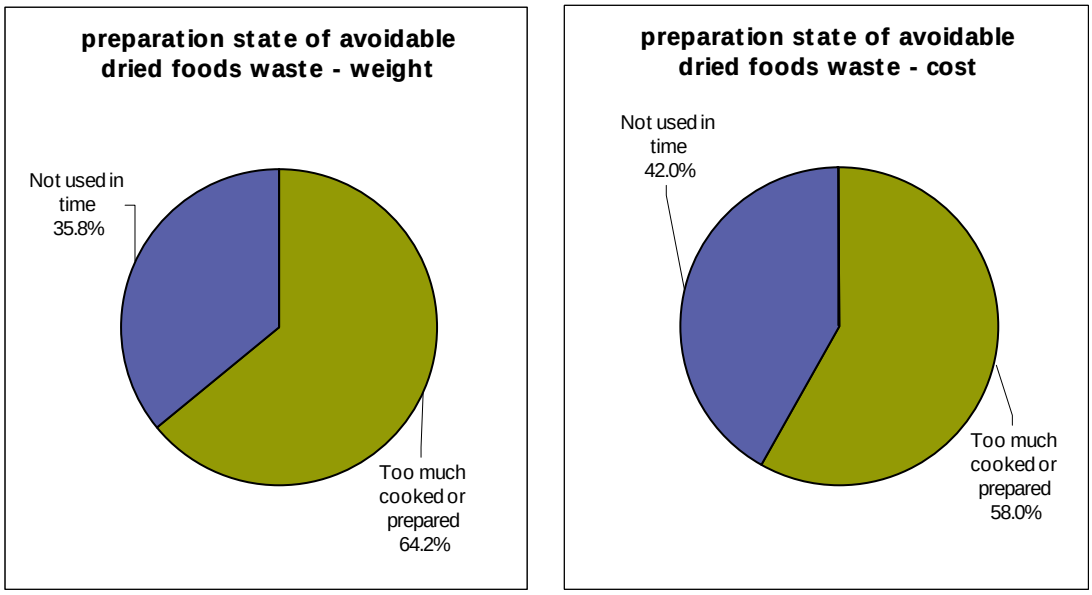
Type of dried food	% of dried foods waste cost	Cost (£M)	
		Council collected	Total
Breakfast cereal	40.8%	£4.3	£16.4
Other dried foods	22.8%	£7.6	£9.2
Rice	21.0%	£6.1	£8.4
Pasta	15.5%	£4.4	£6.2
Total	*100% (3.0% of all waste and 4.0% of avoidable waste)*	*£22.3*	*£40.2*

[31] *Comprises flour, powdered soups, wheat products, stock cubes, rice noodles, dried seeds and pulses and unclassified dried foods. Unclassified dried foods refers to items that were rare in occurrence and/or could not be classified during the survey*

14.2 In what food preparation state is avoidable dried foods waste thrown away?

14.2.1 Food preparation state of avoidable dried foods waste

Figures 88 and 89 How different food preparation states make up avoidable dried foods waste



The above charts illustrate that, of the avoidable dried foods waste generated, nearly two-thirds (64.2%) by weight is made up of items wasted because too much has been cooked or prepared. More than one-third (35.8%) is not used in time. In terms of cost, nearly six-tenths (58.0%) is made up of items wasted because too much has been cooked or prepared, and more than four-tenths (42.0%) is not used in time. The tables below give the proportions, annual weight (Table 155) and annual cost (Table 156) of avoidable dried foods waste in Scotland by food preparation state.

Table 155 The proportions and estimated annual weight of avoidable dried foods waste from households in Scotland by food preparation state

Food preparation state	% of avoidable dried foods waste weight	Weight (tonnes)	
		Council collected	Total
Too much cooked or prepared	64.2%	3200	10,230
Not used in time	35.8%	4790	5710
Total	*100%*	*7990*	*15,940*

Table 156 The proportions and estimated annual cost of avoidable dried foods waste from households in Scotland by food preparation state

Food preparation state	% of avoidable dried foods waste cost	Cost (£M)	
		Council collected	Total
Too much cooked or prepared	58.0%	£8.2	£23.3
Not used in time	42.0%	£14.1	£16.9
Total	*100%*	*£22.3*	*£40.2*

14.2.2 What types of avoidable dried foods waste are thrown away because they are not used in time?

Breakfast cereal makes up the largest proportion of individual food types, accounting for more than one-fifth (21.7%) of dried foods thrown away because they are not used in time. Pasta accounts for more than one-sixth (18.0%). The table below gives the proportions and annual weight of avoidable dried foods waste disposed of by households in Scotland because it is not used in time.

Table 157 The proportions and estimated annual weight of avoidable dried foods waste from households in Scotland not used in time

Type of dried food not used in time	% of avoidable dried foods waste weight	Weight (tonnes)	
		Council collected	Total
Other dried foods	48.4%	2320	2760
Breakfast cereal	21.7%	1040	1240
Pasta	18.0%	860	1030
Rice	11.9%	570	680
Total	*100%*	*4790*	*5710*

Breakfast cereal makes up a quarter (24.4%) of the cost of dried foods waste thrown away because it is not used in time or is no longer wanted. The table below gives the proportions and annual cost of avoidable dried foods waste disposed of by households in Scotland because it is not used in time.

Table 158 The proportions and estimated annual cost of avoidable dried foods waste from households in Scotland not used in time

Type of dried food not used in time	% of avoidable dried foods waste cost	Cost (£M)	
		Council collected	Total
Other dried foods	48.4%	£6.8	£8.2
Breakfast cereal	24.4%	£3.4	£4.1
Pasta	13.4%	£1.9	£2.3
Rice	13.8%	£2.0	£2.3
Total	*100%*	*£14.1*	*£16.9*

14.2.3 What types of avoidable dried foods waste are thrown away because too much has been cooked or prepared?

In terms of weight, breakfast cereal makes up the greatest proportion of avoidable dried foods waste disposed of because too much has been cooked or prepared. Almost half (45.7%) of dried food thrown away for this reason is breakfast cereal. Rice accounts for more than a quarter (26.5%) and pasta makes up a slightly lower proportion (23.4%). The table below gives the proportions and annual weight of avoidable dried foods waste disposed of by households in Scotland because too much is cooked or prepared.

Table 159 The proportions and estimated annual weight of avoidable dried foods waste from households in Scotland disposed of because too much is cooked or prepared

Type of dried food where too much is cooked or prepared	% of avoidable dried foods waste weight	Weight (tonnes)	
		Council collected	Total
Breakfast cereal	45.7%	300	4680
Rice	26.5%	1290	2710
Pasta	23.4%	1300	2400
Other dried foods	4.4%	310	440
Total	*100%*	*3200*	*10,230*

Breakfast cereal accounts for more than half (52.5%) of the cost of the dried foods waste thrown away because too much has been cooked or prepared. Rice makes up more than a quarter (26.1%) and pasta less than one-fifth (17.1%) of the cost. The table below gives the proportions and annual cost of avoidable dried foods waste disposed of by households in Scotland because too much is cooked or prepared.

Table 160 The proportions and estimated annual cost of avoidable dried foods waste from households in Scotland disposed of because too much is cooked or prepared

Type of dried food where too much is cooked or prepared	% of avoidable dried foods waste cost	Cost (£M)	
		Council collected	Total
Breakfast cereal	52.5%	£0.8	£12.3
Rice	26.1%	£4.1	£6.1
Pasta	17.1%	£2.5	£4.0
Other dried foods	4.2%	£0.7	£1.0
Total	*100%*	*£8.2*	*£23.3*

14.3 What dried foods items are thrown away in full packs and in-date?

Of the dried foods waste thrown away via council collections in full packs, more than one-fifth (20.9%) by weight and more than one-seventh (15.1%) by cost is in-date. The following table provides the proportion of dried foods waste in full packs and in-date when disposed of.

Table 161 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of dried foods	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	20.9%	15.1%	390	£0.9
Out-of-date	79.1%	84.9%	1480	£4.9
Total full packs	*100%*	*100%*	*1870*	*£5.8*

14.4 Summary of chapter

This chapter has described in detail the amount and cost of dried foods waste (all of which is avoidable) produced by households in Scotland.

- Breakfast cereal is the most commonly disposed-of dried food, making up more than one-third (37.1%) of the weight of all avoidable dried foods waste. This breakfast-cereal waste weighs nearly 6000 tonnes and costs Scottish households more than £15 million each year.

- More than six-tenths (64.2%) by weight and almost six-tenths (58.0%) by cost of dried foods waste is thrown away because too much is cooked or prepared. Breakfast cereal is the most commonly thrown away dried food for this reason. Rice and pasta each make up around a quarter by weight of the dried foods thrown away because too much is cooked or prepared (26.5% and 23.4% respectively).

- Of all the dried foods disposed of in full packs via council collections, more than one-fifth (20.9%) by weight and one-seventh (15.1%) by cost is thrown away before the food date expires.

15 Other food waste

15.1 Introduction

This chapter combines the 4 individual food groups that were found at relatively low occurrences during the study (see section 1.2 for further details). The groups are:

- Desserts
- Confectionery and snacks
- 'Other' mixed meals and snacks
- Processed fruits

For "other mixed meals and snacks" and "processed fruits" no individual food types occurred at a significantly high level, so data for the food group alone is presented. For the food groups "Desserts" and "Confectionery and snacks", where individual food types do occur in sufficient numbers they are presented separately (e.g "milk puddings" within the food group "Desserts"). For all sections of this chapter weight and cost of total and avoidable waste is presented, along with the food preparation state at the point of disposal and an estimate of food waste disposed of 'in-date' and 'out-of-date'.

15.2 Dessert waste

Dessert waste accounts for 1.3% of the weight and the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). It makes up 1.9% of the weight and 1.7% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored).

Note: All dessert waste is considered avoidable.

More than half (51.6%) by weight is made up of milk-based puddings such as custards. In terms of cost, milk puddings make up nearly a quarter (24.0%). The tables below give the proportions, annual weight (Table 162) and annual cost (Table 163) of the food types making up dessert waste in Scotland. The proportions relate to all methods of disposal.

Table 162 The proportions and estimated annual weight of dessert waste from households in Scotland

Type of dessert waste	% of all dessert waste weight	Weight (tonnes)	
		Council collected	Total
Milk puddings	51.6%	570	3770
Other desserts[32]	48.4%	1620	3530
Total	*100% (1.3% of all waste and 1.9% of avoidable waste)*	*2200*	*7300*

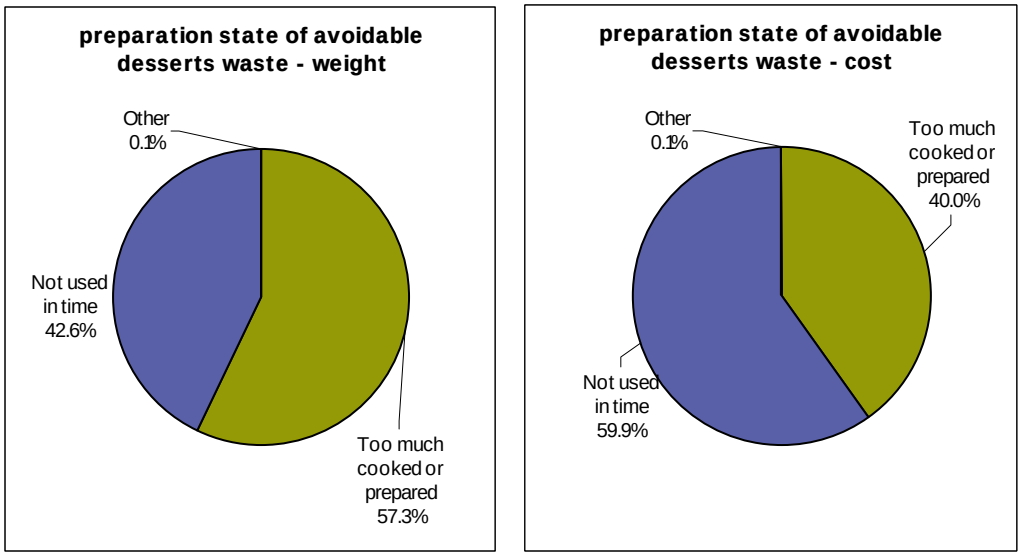
[32] *Comprises Ice creams, Fruit pies and crumbles, Cheesecakes, Mousses, Trifles, Dessert cakes, Jellies, Chocolate desserts and items that could not be classified during the sort process*

Table 163 The proportions and estimated annual cost of dessert waste from households in Scotland

Type of dessert waste	% of all dessert waste cost	Cost (£M)	
		Council collected	Total
Other desserts	76.0%	£6.2	£13.1
Milk puddings	24.0%	£1.3	£4.1
Total	*100% (1.3% of all waste and 1.7% of avoidable waste)*	*£7.5*	£17.2

15.2.1 Food preparation state of avoidable dessert waste

Figures 90 and 91 How different food preparation states make up avoidable dessert waste



The above charts illustrate that, of the avoidable dessert waste generated, more than half (57.3%) by weight is made up of items wasted because too much has been cooked or prepared. More than four-tenths (42.6%) is not used in time or is no longer wanted. By comparison, in terms of cost four-tenths (40.0%) is made up of items wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 164) and annual cost (Table 165) of avoidable dessert waste in Scotland by food preparation state.

Table 164 The proportions and estimated annual weight of avoidable dessert waste from households in Scotland by food preparation state

Food preparation state	% of avoidable dessert waste weight	Weight (tonnes)	
		Council collected	Total
Too much cooked or prepared	57.3%	450	4180
Not used in time	42.6%	1750	3110
Other	0.1%	<10	<10
Total	*100%*	*2200*	*7300*

Table 165 The proportions and estimated annual cost of avoidable dessert waste from households in Scotland by food preparation state

Food preparation state	% of avoidable dessert waste cost	Cost (£M)	
		Council collected	Total
Not used in time	59.9%	£5.8	£10.3
Too much cooked or prepared	40.0%	£1.7	£6.9
Other	0.1%	<£0.1	<£0.1
Total	*100%*	*£7.5*	*£17.2*

15.2.2 Dessert waste not used in time

Milk puddings account for three-tenths (29.3%) by weight of the desserts thrown away because they are not used in time or are no longer wanted. The table below gives the proportions and annual weight of avoidable dessert waste disposed of by households in Scotland because it is not used in time.

Table 166 The proportions and estimated annual weight of avoidable dessert waste from households in Scotland not used in time

Type of dessert not used in time	% of avoidable dessert waste weight	Weight (tonnes)	
		Council collected	Total
Other desserts	70.7%	1180	2200
Milk puddings	29.3%	570	910
Total	*100%*	*1750*	*3110*

Milk puddings make up more a sixth (16.8%) of the cost of desserts not used in time. The table below gives the proportions and annual cost of avoidable dessert waste disposed of by households in Scotland because it is not used in time.

Table 167 The proportions and estimated annual cost of avoidable dessert waste from households in Scotland not used in time

Type of dessert not used in time	% of avoidable dessert waste cost	Cost (£M)	
		Council collected	Total
Other desserts	83.2%	£4.5	£8.6
Milk puddings	16.8%	£1.3	£1.7
Total	*100%*	*£5.8*	*£10.3*

15.2.3 Dessert waste where too much has been cooked or prepared

Milk puddings make up more than two-thirds (68.2%) by weight of avoidable dessert waste disposed of because too much has been cooked or prepared. The table below gives the proportions and annual weight of avoidable dessert waste disposed of by households in Scotland because too much is cooked or prepared.

Table 168 The proportions and estimated annual weight of avoidable dessert waste from households in Scotland disposed of because too much is cooked or prepared

Type of dessert where too much is cooked or prepared	% of avoidable dessert waste weight	Weight (tonnes)	
		Council collected	Total
Milk puddings	68.2%	<10	2850
Other desserts	31.8%	450	1330
Total	*100%*	*450*	*4180*

Milk puddings make up more than one-third (34.6%) of the cost of avoidable dessert waste disposed of because too much has been cooked or prepared. The table below gives the proportions and annual cost of avoidable dessert waste disposed of by households in Scotland because too much is cooked or prepared.

Table 169 The proportions and estimated annual cost of avoidable dessert waste from households in Scotland disposed of because too much is cooked or prepared

Type of dessert where too much is cooked or prepared	% of avoidable dessert waste cost	Cost (£M)	
		Council collected	Total
Other desserts	65.4%	£1.7	£4.5
Milk puddings	34.6%	<£0.1	£2.4
Total	*100%*	*£1.7*	*£6.9*

15.2.4 Dessert waste thrown away in full packs and in-date

Of the dessert waste thrown away via council collections in full packs, more than a quarter by weight and cost (25.2% and 26.8% respectively) is in-date. The following table provides the proportion of dessert waste in full packs and in-date when disposed of.

Table 170 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of desserts	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	25.2%	26.8%	270	£1.1
Out-of-date	74.8%	73.2%	810	£2.9
Total full packs	*100%*	*100%*	*1080*	*£3.9*

15.3 Confectionery and snack waste

15.3.1 Total confectionary and snack waste

Confectionery and snack waste accounts for 0.8% of the weight and 2.3% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). Snacks incorporate foods such as nuts and popcorn.

Of the confectionery and snack waste generated, more than four-tenths (41.3%) by weight is made up of chocolate and sweets. In terms of cost, chocolate and sweets account for more than one-third (34.6%). The tables below give the proportions, annual weight (Table 171) and annual cost (Table 172) of each food type making up confectionery and snack waste in Scotland. The proportions relate to all methods of disposal.

Table 171 The proportions and estimated annual weight of confectionery and snack waste from households in Scotland

Type of confectionery and snack	% of all confectionery and snack waste weight	Weight (tonnes)	
		Council collected	Total
Other confectionery and snacks[33]	58.7%	2270	2710
Chocolate/sweets	41.3%	1590	1900
Total	*100% (0.8% of all waste)*	*3860*	*4610*

Table 172 The proportions and estimated annual cost of confectionery and snack waste from households in Scotland

Type of confectionery and snack	% of all confectionery and snack waste cost	Cost (£M)	
		Council collected	Total
Other confectionery and snacks	65.4%	£17.4	£20.7
Chocolate/sweets	34.6%	£9.1	£11.0
Total	*100% (2.3% of all waste)*	*£26.5*	*£31.7*

15.3.2 Avoidable confectionery and snack waste

Confectionery and snack waste accounts for 1.1% of the weight and 3.1% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households.

Of the avoidable confectionery and snack waste generated, more than four-tenths (43.2%) is made up of chocolate and sweets. In terms of cost, chocolate and sweets account for more than one-third (35.6%). The tables below give the proportions, annual weight (Table 173) and annual cost (Table 174) of each food type making up avoidable confectionery and snack waste in Scotland.

Table 173 The proportions and estimated annual weight of avoidable confectionery and snack waste from households in Scotland

Type of confectionery and snack	% of avoidable confectionery and snack waste weight	Weight (tonnes)	
		Council collected	Total
Other confectionery and snacks	56.8%	2060	2450
Chocolate/sweets	43.2%	1550	1860
Total	*100% (1.1% of avoidable waste)*	*3610*	*4310*

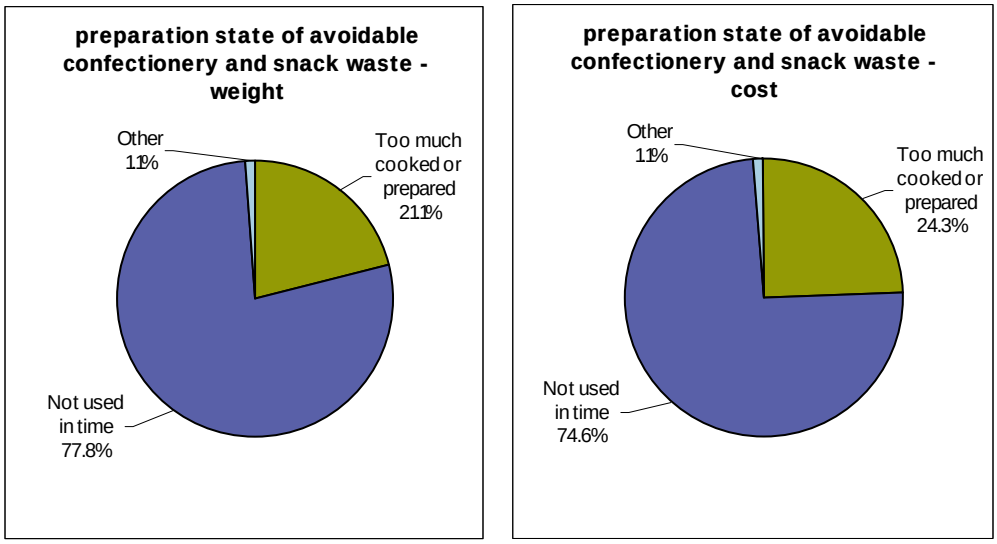
[33] *Incorporates Crisps, Nuts, Cereal bars, Prawn crackers, Popcorn, Savoury snacks and items that could not be classified during the sort process.*

Table 174 The proportions and estimated annual cost of avoidable confectionery and snack waste from households in Scotland

Type of confectionery and snack	% of avoidable confectionery and snack waste cost	Cost (£M)	
		Council collected	Total
Other confectionery and snacks	64.4%	£16.4	£19.7
Chocolate/sweets	35.6%	£9.1	£10.9
Total	*100% (3.1% of avoidable waste)*	*£25.5*	*£30.6*

15.3.3 Food preparation state of avoidable confectionery and snack waste

Figures 92 and 93 How different food preparation states make up avoidable confectionery and snack waste



The above charts illustrate that, of the avoidable confectionery and snack waste generated, in terms of weight, more than three-quarters (77.8%) is not used in time and more than one-fifth (21.1%) is made up of items wasted because too much has been cooked or prepared[34]. In terms of cost, three-quarters (74.6%) is not used in time and nearly a quarter (24.3%) is made up of items wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 175) and annual cost (Table 176) of avoidable confectionery and snack waste in Scotland by food preparation state.

Table 175 The proportions and estimated annual weight of avoidable confectionery and snack waste from households in Scotland by food preparation state

Food preparation state	% of avoidable confectionery and snack waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	77.8%	2820	3360
Too much cooked or prepared	21.1%	750	910
Other	1.1%	40	50
Total	*100%*	*3610*	*4310*

[34] *Cooked snacks include items such as popcorn and prawn crackers*

Table 176 The proportions and estimated annual cost of avoidable confectionery and snack waste from households in Scotland by food preparation state

Food preparation state	% of avoidable confectionery and snack waste cost	Cost (£M)	
		Council collected	Total
Not used in time	74.6%	£19.1	£22.8
Too much cooked or prepared	24.3%	£6.2	£7.4
Other	1.1%	£0.3	£0.3
Total	*100%*	*£25.5*	*£30.6*

15.3.4 Avoidable confectionery and snack waste not used in time

Chocolate and sweets make up more than half (52.2%) by weight of the confectionery and snacks thrown away because they are not used in time. The table below gives the proportions and annual weight of avoidable confectionery and snack waste disposed of by households in Scotland because it is not used in time.

Table 177 The proportions and estimated annual weight of avoidable confectionery and snack waste from households in Scotland not used in time

Type of confectionery and snack not used in time	% of avoidable confectionery and snack waste weight	Weight (tonnes)	
		Council collected	Total
Other confectionery and snacks	47.8%	1350	1610
Chocolate/sweets	52.2%	1470	1750
Total	*100%*	*2820*	*3360*

Chocolate and sweets make up more than four-tenths (44.4%) of the cost of confectionery and snacks thrown away because they are not used in time. The table below gives the proportions and annual cost of avoidable confectionery and snack waste disposed of by households in Scotland because it is not used in time.

Table 178 The proportions and estimated annual cost of avoidable confectionery and snack waste from households in Scotland not used in time

Type of confectionery and snack not used in time	% of avoidable confectionery and snack waste cost	Cost (£M)	
		Council collected	Total
Other confectionery and snacks	55.6%	£10.6	£12.7
Chocolate/sweets	44.4%	£8.5	£10.1
Total	*100%*	*£19.1*	*£22.8*

15.3.5 Avoidable confectionery and snack waste where too much has been cooked or prepared

The table below gives the proportions and annual weight of avoidable confectionery and snack waste disposed of by households in Scotland because too much is cooked or prepared.

Table 179 The proportions and estimated annual weight of avoidable confectionery and snack waste from households in Scotland disposed of because too much is cooked or prepared

Type of confectionery and snack where too much is cooked or prepared	% of avoidable confectionery and snack waste weight	Weight (tonnes)	
		Council collected	Total
Other confectionery and snacks	89.6%	680	820
Chocolate/sweets	10.4%	70	90
Total	*100%*	*750*	*910*

The table below gives the proportions and annual cost of avoidable confectionery and snack waste disposed of by households in Scotland because too much is cooked or prepared.

Table 180 The proportions and estimated annual cost of avoidable confectionery and snack waste from households in Scotland disposed of because too much is cooked or prepared

Type of confectionery and snack where too much is cooked or prepared	% of avoidable confectionery and snack waste cost	Cost (£M)	
		Council collected	Total
Other confectionery and snacks	90.4%	£5.7	£6.7
Chocolate/sweets	9.6%	£0.5	£0.7
Total	*100%*	*£6.2*	*£7.4*

15.3.6 Confectionery and snack items thrown away in full packs and in-date?

Of the confectionery and snack waste thrown away via council collections in full packs, more than a quarter by weight and cost (28.3% and 28.8% respectively) is in-date. The following table provides the proportion of confectionery and snack waste in full packs and in-date when disposed of.

Table 181 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of confectionery and snacks	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	28.3%	28.8%	240	£2.0
Out-of-date	71.7%	71.2%	610	£4.9
Total full packs	*100%*	*100%*	*850*	*£6.9*

15.4 'Other' mixed meal and snack waste

Food waste that consisted of two or more food groups (e.g. a pizza) was categorised as mixed meals and snacks during the sort analysis process. Using the information provided by the sorters, analysts at Exodus Research re-categorised these items to indicate if they were 'homemade' or 'pre-prepared'. Where there was inadequate information, items were classed as 'other' and these items are analysed in this section.

15.4.1 Total Mixed meal and snack waste

Other mixed meal and snack waste accounts for 0.7% of the weight and 1.1% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc.). The following tables give the weight and cost of other mixed meal and snack waste.

Table 182 The estimated annual weight of other mixed meal and snack waste from households in Scotland

Type of other mixed meal and snack	% of all other mixed meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Total	*100% (0.7% of all waste)*	*2770*	*3970*

Table 183 The estimated annual cost of other mixed meal and snack waste from households in Scotland

Type of other mixed meal and snack	% of all other mixed meal and snack waste cost	Cost (£M)	
		Council collected	Total
Total	*100% (1.1% of avoidable waste)*	*£11.4*	*£15.0*

15.4.2 Avoidable other mixed meal and snack waste

Other mixed meal and snack waste accounts for 0.9% of the weight and 1.3% of the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households. Nearly all (91.7%) of other mixed meal and snack waste is avoidable in that it could have been eaten if it had been better prepared or managed. The following tables give the weight and cost of other mixed meal and snack avoidable waste.

Table 184 The estimated annual weight of avoidable other mixed meal and snack waste from households in Scotland

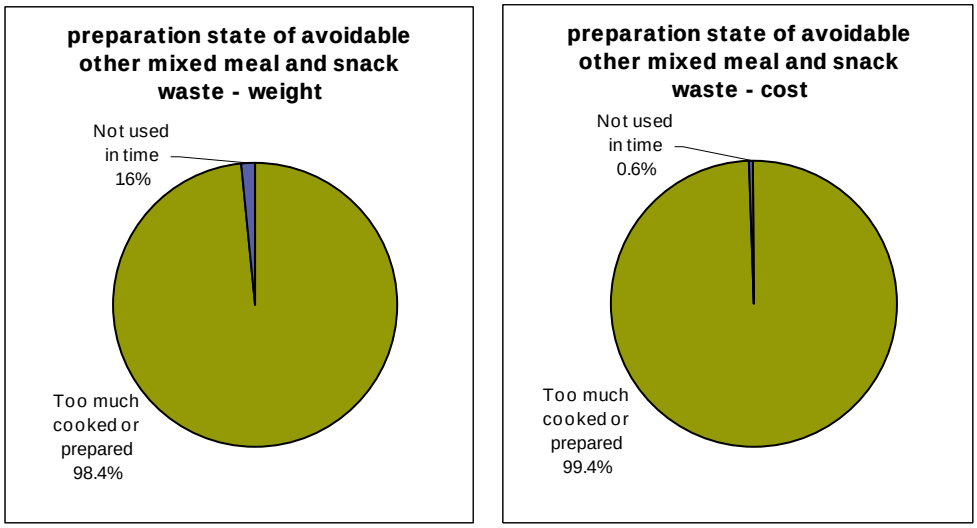
Type of other mixed meal and snack	% of avoidable other mixed meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Total	*100% (0.9% of avoidable waste)*	*2510*	*3640*

Table 185 The estimated annual cost of avoidable other mixed meal and snack waste from households in Scotland

Type of other mixed meal and snack	% of avoidable other mixed meal and snack waste cost	Cost (£M)	
		Council collected	Total
Total	*100% (1.3% of avoidable waste)*	*£10.2*	*£13.2*

15.4.3 Food preparation state of avoidable other mixed meal and snack waste

Figures 94 and 95 How different food preparation states make up avoidable other mixed meal and snack waste



The above charts illustrate that, of the avoidable other mixed meal and snack waste generated, nearly all (98.4% by weight and 99.4% by cost) is made up of items wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 214) and annual cost (Table 215) of avoidable other mixed meal and snack waste in Scotland by food preparation state.

Table 186 The proportions and estimated annual weight of avoidable other mixed meal and snack waste from households in Scotland by food preparation state

Food preparation state	% of avoidable other mixed meal and snack waste weight	Weight (tonnes)	
		Council collected	Total
Too much cooked or prepared	98.4%	2510	3580
Not used in time	1.6%	0	60
Total	*100%*	*2510*	*3640*

Table 187 The proportions and estimated annual cost of avoidable other mixed meal and snack waste from households in Scotland by food preparation state

Food preparation state	% of avoidable other mixed meal and snack waste cost	Cost (£M)	
		Council collected	Total
Too much cooked or prepared	99.4%	£10.2	£13.3
Not used in time	0.6%	£0.0	£0.1
Total	*100%*	*£10.2*	*£13.4*

15.4.4 Avoidable other mixed meal and snack waste thrown away because too much has been cooked or prepared

Mixed meals make up more than eight-tenths (83.9%) by weight and more than three-quarters (76.1%) by cost of avoidable other mixed meal and snack waste disposed of because too much has been cooked or prepared. Vegetable meals account for the largest proportion, making up over three-tenths (30.9%) of the weight of avoidable other mixed meal and snack waste. The table below gives the annual weight and cost of avoidable other

mixed meal and snack waste disposed of by households in Scotland because too much is cooked or prepared, via all methods of disposal.

Table 188 The estimated annual weight and cost of avoidable other mixed meal and snack waste from households in Scotland disposed of because too much is cooked or prepared

Type of other mixed meal and snack where too much is cooked or prepared	% of other mixed meal and snack waste weight	% of other mixed meal and snack waste cost	Weight (tonnes) per year	Cost (£M) per year
Total	*100%*	*100%*	*3580*	*£13.3*

15.5 Processed fruits

15.5.1 Total processed fruit waste

Processed fruit waste accounts for 0.6% of the weight and 0.5% of the cost of all food waste (avoidable, potentially avoidable and unavoidable) that is thrown away by Scottish households by all methods of disposal (council collections, sewer, home composting, feeding animals etc). Processed fruit consists of items that are not fresh, e.g. dried or tinned fruits.

The tables below give the annual weight and annual cost of processed fruit waste in Scotland.

Table 189 The estimated annual weight of processed fruit waste from households in Scotland

Type of processed fruit	% of all processed fruit waste weight	Weight (tonnes)	
		Council collected	Total
Total	*100% (0.6% of all waste)*	*980*	*3570*

Table 190 The estimated annual cost of processed fruit waste from households in Scotland

Type of processed fruit	% of all processed fruit waste cost	Cost (£M)	
		Council collected	Total
Total	*100% (0.5% of all waste)*	*£3.4*	£6.6

15.5.2 Avoidable processed fruit waste

Processed fruit waste accounts for 0.5% of the weight and the cost of avoidable food waste (food that could have been consumed if it had been better managed or stored) that is thrown away by Scottish households regardless of disposal method. The tables below give the annual weight and annual cost of avoidable processed fruit waste in Scotland.

Table 191 The estimated annual weight of avoidable processed fruit waste from households in Scotland

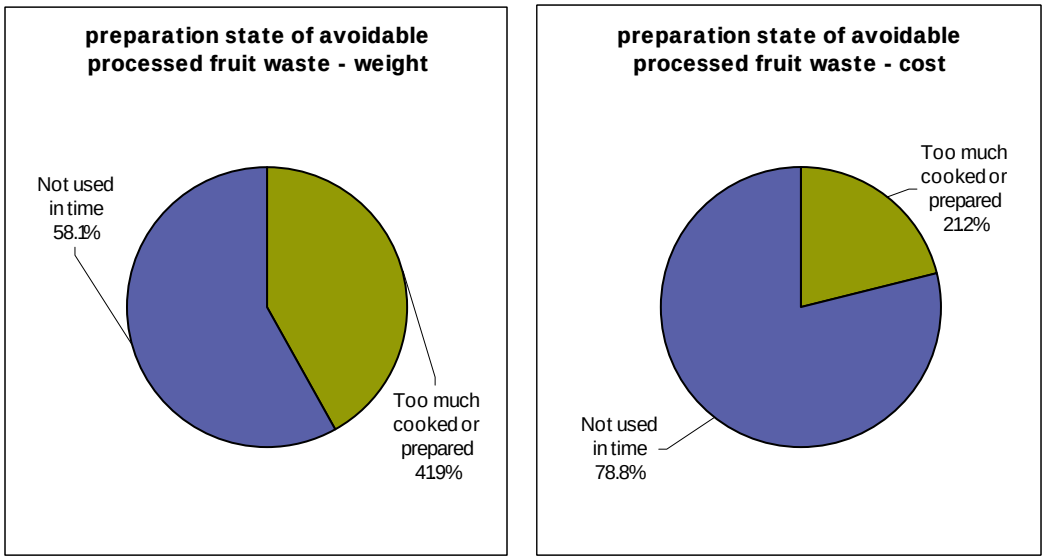
Type of processed fruit	% of avoidable processed fruit waste weight	Weight (tonnes)	
		Council collected	Total
Total	*100% (0.5% of avoidable waste)*	*950*	*1830*

Table 192 The estimated annual cost of avoidable processed fruit waste from households in Scotland

Type of processed fruit	% of avoidable processed fruit waste cost	Cost (£M)	
		Council collected	Total
Total	*100% (0.5% of avoidable waste)*	*£3.3*	*£4.6*

15.5.3 Food preparation state of avoidable processed fruit waste

Figures 96 and 97 How different food preparation states make up avoidable processed fruit waste



The above charts illustrate that, of the avoidable processed fruit waste generated, nearly six-tenths (58.1%) by weight is made up of items not used in time and more than four-tenths (41.9%) is wasted because too much has been cooked or prepared. In terms of cost, more than three-quarters (78.8%) is made up of items not used in time and just over one-fifth (21.2%) is wasted because too much has been cooked or prepared. The tables below give the proportions, annual weight (Table 193) and annual cost (Table 194) of avoidable processed fruit waste in Scotland by food preparation state.

Table 193 The proportions and estimated annual weight of avoidable processed fruit waste from households in Scotland by food preparation state

Food preparation state	% of avoidable processed fruit waste weight	Weight (tonnes)	
		Council collected	Total
Not used in time	58.1%	890	1060
Too much cooked or prepared	41.9%	50	770
Total	*100%*	*950*	*1830*

Table 194 The proportions and estimated annual cost of avoidable processed fruit waste from households in Scotland by food preparation state

Food preparation state	% of avoidable processed fruit waste cost	Cost (£M)	
		Council collected	Total
Not used in time	78.8%	£3.1	£3.7
Too much cooked or prepared	21.2%	£0.2	£1.0
Total	*100%*	*£3.3*	*£4.7*

15.5.4 Avoidable processed fruit waste that is thrown away because they are not used in time

The tables below give the annual weight and cost of avoidable processed fruit waste disposed of by households in Scotland because it is not used in time.

Table 195 The estimated annual weight of avoidable processed fruit waste from households in Scotland not used in time

Type of processed fruit not used in time	% of avoidable processed fruit waste weight	Weight (tonnes)	
		Council collected	Total
Total	*100%*	*890*	*1060*

Table 196 The estimated annual cost of avoidable processed fruit waste from households in Scotland not used in time

Type of processed fruit not used in time	% of avoidable processed fruit waste cost	Cost (£M)	
		Council collected	Total
Total	*100%*	*£3.1*	*£3.7*

15.5.5 Avoidable processed fruit waste thrown away because too much has been cooked or prepared

The tables below give the annual weight and cost of avoidable processed fruit waste disposed of by households in Scotland because too much is cooked or prepared.

Table 197 The estimated annual weight of avoidable processed fruit waste from households in Scotland disposed of because too much is cooked or prepared

Type of processed fruit where too much is cooked or prepared	% of avoidable processed fruit waste weight	Weight (tonnes)	
		Council collected	Total
Total	*100%*	*50*	*610*

Table 198 estimated annual cost of avoidable processed fruit waste from households in Scotland disposed of because too much is cooked or prepared

Type of processed fruit where too much is cooked or prepared	% of avoidable processed fruit waste cost	Cost (£M)	
		Council collected	Total
Total	*100%*	*£0.2*	*£0.9*

15.5.6 Processed fruit items thrown away in full packs and in-date

Of the processed fruit waste thrown away via council collections in full packs, less than one-tenth (8.9%) by weight and more than one-tenth (11.2%) by cost is in-date. The following table provides the proportions of processed fruit waste in full packs and in-date when disposed of.

Table 199 Estimated proportions, weight and cost of full packs thrown away via council collections by households, by food date

Food date of full packs of processed fruit	Proportion of weight	Proportion of cost	Weight (tonnes) per year	Cost (£M) per year
In-date	8.9%	11.2%	50	£0.2
Out-of-date	91.1%	88.8%	540	£1.7
Total full packs	*100%*	*100%*	*590*	*£1.9*

15.6 Summary of chapter

This chapter has described the amount and cost of waste produced by households in Scotland that falls within 4 food groups for which occurrences were too rare to allow analysis by individual food type. The food groups included are 'desserts', 'confectionery and snacks', 'other mixed meals and snacks' and 'processed fruits'.

- Milk puddings such as custards are the most commonly disposed of desserts, making up more than half (51.6%) of the weight of all avoidable dessert waste. This milk pudding waste weighs more than 3500 tonnes and costs Scottish households more than £4 million each year.

- More than half of dessert waste (57.3%) by weight and four-tenths (40.0%) by cost is thrown away because too much is cooked or prepared. The desserts most commonly thrown away for this reason are milk puddings.

- Of all the desserts disposed of in full packs via council collections, more than a quarter by weight and cost (25.2% and 26.8% respectively) are thrown away before the food date expires.

- Chocolate and sweets are the most commonly disposed of confectionery and snacks, making up more than four-tenths (43.2%) of the weight of all avoidable confectionery and snack waste. Chocolate and sweet waste weighs more than 1500 tonnes and costs Scottish households over £10 million each year.

- More than three-quarters (77.8% by weight and 74.6% by cost) of confectionery and snack waste is thrown away because it is not used in time or is no longer wanted. The most commonly thrown away confectionery and snacks for this reason are chocolate and sweets.

- Of all the confectionery and snack waste disposed of in full packs via council collections, more than a quarter by weight and cost (28.3% and 28.8% respectively) is thrown away before the food date expires.

- Other mixed meal and snack waste weighs more than 3000 tonnes and costs Scottish households over £10 million each year. Nearly all (98.4% by weight and 99.4% by cost) of this waste is thrown away because too much has been cooked or prepared.

- Processed fruit waste weighs nearly 2000 tonnes and costs Scottish households more than £4 million each year. Nearly six-tenths (58.1%) by weight and eight-tenths (78.8%) by cost of processed fruit waste is thrown away because it is not used in time or is no longer wanted.

16 Five-a-day fruit and vegetable waste

16.1 Introduction

The Government and health experts recommend an intake of at least five portions of a variety of fruit and vegetables per person per day, to help reduce the risk of some cancers, heart disease and many other chronic conditions. Yet average fruit and vegetable consumption among the population in England is less than three portions a day[35]. One portion is the equivalent of 80 grams of fresh, frozen, chilled, canned or dried fruit, vegetables and salads but excludes starch items such as potatoes or yams and any drainings[36].

This chapter looks at the number of equivalent five-a-day portions of avoidable fruit, vegetable and salad waste disposed of by Scottish households via council collection services (i.e. the household's residual bin and/or separate food waste container if applicable). Avoidable food waste is food that could have been eaten if it had been better stored or managed. It does not include food waste such as bones or used teabags (i.e. unavoidable waste) or peelings (i.e. possibly avoidable waste). It should be noted that this avoidable waste may not have been fit for consumption when disposed of as it may have been mouldy, or rendered inedible during the preparation process.

The analysis here only incorporates individual fruits, vegetables, salads and fruit juices which can contribute to the five-a-day allowance. It does not include fruit and vegetables that form part of mixed waste – for example, although an apple pie or vegetable stew will contribute to the five-a-day allowance, because exclusive information on the quantity of the fruit or vegetable element is not available these items are not included and so there will be some under-reporting. Where food was disposed of in packaging, the weight of the packaging is excluded.

16.2 How many potential five-a-day portions are thrown away by Scottish householders?

The portions are calculated for all avoidable fruit, vegetable and salad waste (including that partially consumed) and then just for those items disposed of uneaten and untouched.

16.2.1 Five-a-day portion equivalents wasted overall

Table 200 Five-a-day portion equivalents wasted by Scottish householders

Type of five-a-day	Five-a-days wasted by all households in Scotland per year			Average number of portions wasted per household		Average number of portions per person per week
	Portions (millions)	Amount (tonnes)	Cost (£M)	Per year	Per week	
Fresh vegetables and salads	517	41,350	£83.6	223.4	4.3	2.0
Fresh fruits	403	32,210	£62.2	174.0	3.3	1.6
Processed vegetables and salads	55	4410	£10.6	23.8	0.5	0.2
Processed fruits and fruit juices	31	2490	£5.8	13.4	0.2	0.2
All five-a-day	*1006*	*80,460*	*£162.2*	*434.7*	*8.4*	*4.0*

[35] *Source http://www.dh.gov.uk/en/Publichealth/Healthimprovement/FiveADay/FiveADaygeneralinformation/DH_4001494*

[36] *80g portions are recommended from 5+ years of age.*

The table shows that the equivalent of 1 billion portions of five-a-day fruit, vegetables and salads are wasted throughout Scotland each year. This equates to four portions for each individual every week.

16.2.2 Five-a-day items thrown away whole/untouched

Table 201 Whole five-a-day portion equivalents wasted by Scottish householders

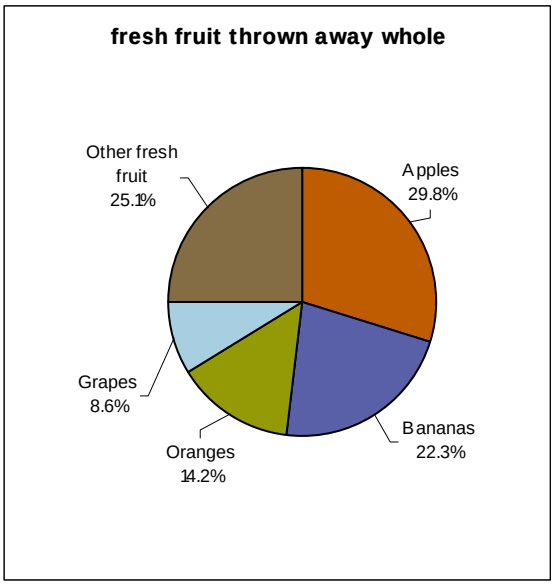
Type of five-a-day	Whole five-a-day equivalents wasted by all households in Scotland per year			Average number of whole portions per household		Average number of portions per person per week
	Portions (millions)	Amount (tonnes)	Cost (£M)	Per year	Per week	
Fresh fruits	338	27,020	£52.8	146.0	2.8	1.3
Fresh vegetables and salads	263	21,040	£44.4	113.7	2.2	1.0
Processed vegetables and salads	13	1010	£2.6	5.4	0.1	<0.1
Processed fruits and fruit juices	15	1220	£3.5	6.5	0.1	0.1
All five-a-day	*628*	*50,280*	*£103.2*	*271.6*	*5.2*	*2.5*

The above table shows that more than 620 million portions of five-a-day fruit, vegetables and salads are wasted untouched throughout Scotland each year. This equates to 2.5 portions for each individual every week.

16.2.3 Untouched fresh fruits equivalent to five-a-day portions

The following chart illustrates the proportions of the different types of fresh fruit disposed of whole that could have been consumed in accordance with the five-a-day recommendations if they had been better stored or managed.

Figure 98 Types of fresh fruit thrown away whole making up five-a-day portion equivalents disposed of by Scottish householders, by weight



Of the fresh fruits disposed of whole and uneaten that could have been eaten in accordance with the five-a-day recommendations, three-tenths (29.8%) by weight are apples and more than one-fifth (22.3%) are bananas. Oranges (including similar fruits such as satsumas) make up one-seventh (14.2%) of the whole fresh fruit thrown away that could have been consumed in accordance with the five-a-day recommendations.

The following table illustrates the number of portions of untouched fresh fruit thrown away by Scottish households. It shows that more than 330 million portion equivalents are thrown away each year, equating to more than one portion per person per week.

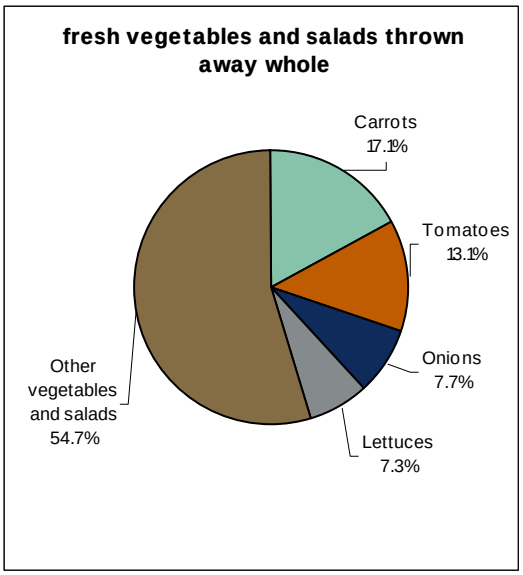
Table 202 Types of fresh fruit thrown away whole making up five-a-day portion equivalents wasted by Scottish householders

Type of fresh fruit thrown away whole	Whole five-a-day fruits wasted by all households in Scotland per year			Average number of whole portions per household		Average number of portions per person per week	Proportion of all fresh fruit portions
	Portions (millions)	Weight (tonnes)	Cost (£M)	Per year	Per week		
Apples	101	8050	£12.3	43.5	0.8	0.4	29.8%
Other fresh fruit[37]	85	6780	£21.1	36.7	0.8	0.3	25.1%
Bananas	75	6020	£6.2	32.5	0.6	0.3	22.3%
Oranges	48	3830	£5.7	20.7	0.4	0.2	14.2%
Grapes	29	2340	£7.5	12.6	0.2	0.1	8.6%
All five-a-day fresh fruit	*338*	*27,020*	*£52.8*	*146.0*	*2.8*	*1.3*	*100%*

16.2.4 Untouched fresh vegetables and salads equivalent to five-a-day portions

The following chart illustrates the proportions of the different types of fresh vegetables and salads disposed of whole that could have been consumed in accordance with the five-a-day recommendations if they had been better stored or managed.

Figure 99 Types of fresh vegetables and salads thrown away whole making up five-a-day portion equivalents disposed of by Scottish householders, by weight



Of the fresh vegetables and salads disposed of whole that could have been eaten in accordance with the five-a-day recommendations, more than one-sixth (17.1%) by weight are carrots and more than one-eighth (13.1%) are tomatoes. Onions and lettuces each make up more than 7% of the whole fresh vegetables and salads thrown away that could have been consumed in accordance with the five-a-day recommendations.

[37] *Comprises Pears, Plums, Kiwis, Strawberries, Peaches, Lemons, Mangoes, Nectarines, Melons, Pineapples, Mixed fruit, Avocados, Limes, Pomegranates, Grapefruits and other fruits that were not classified during the survey*

The following table illustrates the number of portions of untouched fresh vegetables and salads thrown away by Scottish households. It shows that more than 260 million portion equivalents are thrown away each year, equating to one portion per person per week.

Table 203 Types of fresh vegetables and salads thrown away whole making up five-a-day vegetable/salad portion equivalents disposed of by Scottish householders

Type of vegetable and salad thrown away whole	Whole five-a-day vegetables/salads wasted by all households in Scotland per year			Average number of whole portions per household		Average number of portions per person per week	Proportion of all vegetable and salad portions
	Portions (millions)	Amount (tonnes)	Cost (£M)	Per year	Per week		
Other vegetable and salad[38]	145	11,520	£31.4	62.2	1.1	0.5	54.7%
Carrots	45	3600	£3.0	19.5	0.4	0.2	17.1%
Tomatoes	34	2760	£6.7	14.9	0.3	0.1	13.1%
Onions	20	1630	£1.7	8.8	0.2	0.1	7.7%
Lettuces	19	1530	£1.6	8.3	0.2	0.1	7.3%
All five-a-day vegetables and salads	*263*	21,040	*£44.4*	*113.7*	*2.2*	*1.0*	100%

16.3 Summary of chapter

This chapter has described the amount and cost of five-a-day fruit and vegetable equivalent waste produced by households in Scotland.

- Each year 1 billion portions of fruit and vegetables that could contribute to the five-a-day recommendation are thrown away by Scottish households in the residual and/or separate food waste container for collection by the council. This waste costs £160 million per year and is the equivalent of four portions per person per week.

- When partially consumed fruit, vegetables and salads are excluded, Scottish households throw away more than 620 million portions every year costing more than £100 million. The equivalent is 2.5 portions per person per week, with the most commonly disposed (whole) fruits being apples, bananas and oranges.

[38] *Comprises Mushrooms, unclassified vegetables, Beetroot, Sweetcorn, Leeks, Celery, Brussel sprouts, Spring onions, Courgettes, Parsnips, Aubergines, Beans, Peas, Radishes, Spinach, Cabbages, Peppers, Cucumbers, Turnips/Swedes, Broccoli, Mixed vegetables, Mixed salads, Cauliflowers, unclassified salads and Rocket.*

Appendix A: Describing the food waste

Table A1 Food group categories

CODE	GROUP	EXAMPLES
1	Bakery	Bread slice, crusts, sponge cake, doughnut, muffin, crumpet, baguette, naan bread, bourbon biscuit, crisp bread.
2	Meat and fish	Pork chop, ham slice, chicken bones, bacon fat, salmon steak, sausage, burger, pork pie, fish finger.
3	Dairy	Cheddar cheese, milk, crème fraîche, clotted cream, Greek yoghurt, egg shells.
4	Dried foods	Bread mix, breakfast cereal, flour, semolina, pasta shells, spaghetti, rice.
5	Fresh fruit	Apple core, orange skin, plum stone, lemon slice.
6	Processed fruit	Dried apricots, frozen raspberries, tinned peaches.
7	Vegetables and salads	Cucumber ends, tomato seeds, mixed leaves, potato peel, whole carrots, turnip peel, pumpkin pith and seeds.
8	Processed vegetables and salads	Tinned sweetcorn, frozen peas, tinned tomatoes.
9	Confectionery and snacks	Kit Kat, bacon crisps, cashew nuts, dry roast peanuts.
10	Drink	Milk, teabags, coffee granules, Pepsi, dry white wine.
11	Condiments, sauces, herbs and spices	Ketchup, mayonnaise, strawberry jam, sugar cubes, sea salt, gravy, pickles.
12	Desserts	Vanilla ice cream, pavlova, banoffee pie.
13	Mixed meals and snacks	Stew, lasagne, shepherd's pie. This group was further split into: - homemade meals and snacks; and - pre-prepared meals and snacks (store–bought and takeaways).
14	Other	Food that does not fit into the above categories.

Table A2a Food preparation state categories

STAGE	EXPLANATION
Too much cooked or prepared	Avoidable food and drink that can be identified during the sort analysis as having been cooked or prepared in some way and only partially consumed. For foods and drink disposed of via the sewer, this category consists of items described by the diarist as 'leftover'.
Not used in time	These avoidable food and drink items are those disposed of unused in their original container (e.g. cook-in sauces) and whole and unused (e.g. a pot of yoghurt or an uncooked chicken nugget). Items collected in the compositional analysis that would normally require cooking first are also classified as not used in time – such as uncooked rice and pasta. For food and drink disposed of via the sewer, this category consists of items described by the diarist as 'past the food date'.
Other	Avoidable waste for which there was inadequate information to determine which of the above two classifications applied.

Table A2b Examples of food preparation state categories

Food group	Too much cooked or prepared	Not used in time
Bakery	Buttered toast, pieces of pancake, toasted teacake.	Unused bread roll, crumpet, half a loaf.
Meat and fish	Cooked pork chop, bits of salami, cooked bacon rasher.	Corned beef slices, raw chicken breast.
Dairy	Pieces of cheese, scrambled egg.	Full pot of yoghurt, can of squirty cream.
Dried foods	Cooked rice , cooked pasta, remains of porridge.	Uncooked rice, dry breakfast cereal.
Fresh fruit	Sliced kiwi fruit, banana flesh.	Whole apple, whole plum.
Processed fruit	Tinned pineapple pieces, mixed fruit cocktail bits.	Packet of raisins, glacé cherries.
Vegetables and salads	Mashed potato, boiled carrots, tomato slices.	Whole lettuce, bagged leaves.
Processed vegetables and salads	Cooked chips, loose baked beans.	Pot of coleslaw, tub of potato salad.
Confectionery and snacks	Loose crisps, half-eaten chocolate.	Wrapped sweets, unopened packet of crisps.
Drink	(All from sewer study) half cup of tea, glass of milk.	Bottle of cola, carton of juice, jar of coffee.
Condiments, sauces, herbs and spices	Loose marmalade, chopped parsley.	Pack of butter, jar of marmite, bottle of olive oil.
Desserts	Half slice of apple pie, scraps of rice pudding.	Whole apple pie, half dessert gateau, tin of custard.
Mixed meals and snacks (homemade and pre-prepared)	Sandwich remains, slice of cooked pizza.	Uncooked ready-meal, uncooked sausage roll.

Table A3: The sort sheet used to categorise food waste

Date:	Area:	Collection date:	Completed by:
HouseID No	Page number __ of __	Residual Waste Food Waste	Total residual weight

Residual bin but no food waste

Food collection area but no food bin

Full description (food type first)	Flavour/variety	Original source	IF FOOD OR DRINK WASTE IS IN PACKAGING:												Whole UNITS	% left	Food group (1– 14)	State (A – H)	Total food or drink	EXODUS USE ONLY			
			Total pack weight	PACKAGING Material	PACKAGING Code	Origin	Brand	Special offer	Full or part	F / C)	Organic	Date type	Date	Multi-pack						Food type	APU	Cost	L/P

Table A4 Food type categories

FOOD TYPES WITHIN EACH FOOD GROUP
1. BAKERY
1a. Bread loaf
1b. Bread rolls/baguettes
1c. Bread slices
1d. Bread crusts
1e. World breads (naan, tortilla etc)
1f. Cakes
1g. Biscuits/crackers/crisp breads
1h. Yorkshire pudding and other batters
1i. Other bakery
1j. Waffles
1k. Garlic bread
1l. Breadsticks
1m. Scotch pancakes
1n. Scones
1o. Potato cakes
1p. Pie crusts and remains
1q. Pastry
1r. Malt loaf
1s. Hot cross buns
1t. Fruit loaf and fruit buns
1u. Dumplings
1v. Doughnuts
1w. Dough
1x. Danish pastries
1y. Crumpets
1z. Croissants
1aa. Brioche
1bb. Bread scraps and chunks
1cc. Bagels
2. MEAT AND FISH
2a. Pork/ham/bacon
2b. Beef
2c. Poultry (chicken/turkey/duck)
2d. Fish (including fish fingers)
2g. Shell fish (prawns, crab, lobster etc)
2e. Sandwich spreads
2f. Other meat and fish
2h. Cured meat
2i. Minced meat
2j. Meatballs
2k. Lamb
2l. Hotdogs/frankfurters
2m. Unidentifiable/mixed bones
2n. Black pudding
2o. Unidentified meat/offal
2p. Burgers

FOOD TYPES WITHIN EACH FOOD GROUP
3. DAIRY
3a. Milk
3b. Cream
3c. Yoghurt/yoghurt drink
3d. Cheese
3e. Egg
3f. Butter/margarine/lard
3g. Other dairy
3h. Crème fraîche
4. DRIED FOODS
4a. Pasta
4b. Rice
4c. Flour
4d. Wheat products (semolina, tapioca)
4e. Breakfast cereal
4f. Powdered soups and drink
4g. Other dried foods
4h. Dried fruit
5. FRESH FRUIT and 6. PROCESSED FRUIT
5a/6a. Apples
5b/6b. Bananas
5c/6c. Cherries
5d/6d. Grapes
5e/6e. Lemons
5f/6f. Limes
5g/6g. Melons
5h/6h. Oranges, satsumas etc
5i/6i. Pears
5j/6j. Pineapples
5k/6k. Plums
5l/6l. Strawberries
5m/6m. Other fruit
5n/6n. Mangoes
5o/6o. Kiwis
5p/6p. Pomegranates
5q/6q. Nectarines
5r/6r. Peaches
5s/6s. Avocados
5t/6t. Mixed fruit
5u/6u. Grapefruit
7. VEGETABLES AND SALADS and 8. PROCESSED VEGETABLES AND SALADS
7a/8a. Lettuces
7b/8b. Cucumbers
7c/8c. Tomatoes
7d/8d. Spring onions
7e/8e. Coleslaws and houmous
7f/8f. Mixed salads
7g/8g. Other salads (NB peppers are classed as a vegetable)
7h/8h. Rocket
7i/8i. Radish
7j/8j. Potato salad
7k/8k. Beetroot
7l/8l. Celery
7m/8m. Potatoes
7n/8n. Carrots
7o/8o. Parsnips
7p/8p. Onions
7q/8q. Mushrooms
7r/8r. Turnips/swedes

FOOD TYPES WITHIN EACH FOOD GROUP
7s/8s. Cabbages
7t/8t. Mixed vegetables
7u/8u. Other raw vegetables
7v/8v. Sandwich spreads (vegetable-based)
7w/8w. Baked beans
7x/8x. Sweetcorn/corn on the cob
7y/8y. Peppers
7z/8z. Leeks
7aa/8aa. Courgettes
7bb/8bb. Cauliflowers
7cc/8cc. Broccoli
7dd/8dd. Beans (all varieties)
7ee/8ee. Peas (all varieties)
7ff/8ff. Brussel sprouts
7gg/8gg. Spinach
7hh/8hh. Aubergines
9. CONFECTIONERY AND SNACKS
9a. Chocolate/sweets
9b. Crisps
9c. Nuts
9d. Cereal bars
9e. Other confectionery/snacks
9f. Prawn crackers
9g. Popcorn
9h. Savoury snacks/biscuits
10. DRINK
10a. Tea/teabags
10b. Coffee/coffee granules
10c. Sodas
10d. Squash
10e. Other drink
10f. Fruit juice
10g. Milkshake/milk drink
10h. Water
11. CONDIMENTS, SAUCES, HERBS AND SPICES
11a. Sugar
11b. Salt
11c. Herbs/spices
11d. Jams
11e. Gravies
11f. Pickles
11g. Ketchup
11h. Mayonnaise/salad cream
11i. Oils
11j. Other sauces, condiments, sauces, herbs and spices (items that could not be classified further)
11k. Other sauces
11l. Other condiments
11m. Cook-in sauces
11n. Spreads
11o. Dips
11p Olives
11q. Honey
12. DESSERTS
12a. Milk puddings (custard etc)
12b. Ice cream
12c. Other puddings
12d. Fruit pie/strudel/crumbles
12e. Cheesecake
12f. Mousse

FOOD TYPES WITHIN EACH FOOD GROUP
12g. Trifle
12h. Dessert cakes (including gateaux)
12i. Jellies
12j. Chocolate puddings/desserts
13. MIXED FOODS
13a. Soups
13b. Stews
13c. Sandwiches
13d. Other mixed foods (items that could not be classified further)
13e. Mixed meals
13f. Composite snacks
13g. Mixed foods (e.g. grated cheese and carrot)
14. OTHER
14a. Baby milk
14b. Baby food
14c. Other
14d. Gunge (food waste that could not be classified into a food group)

Appendix B: Glossary of food waste terms

Table B1 Definition and explanation of food waste terms used in the report

Food group	Food type	Explanation	Examples of food waste descriptions given on sort sheet		
Mixed meals and snacks	Meat or fish mixed meal	A collection of waste classified by the sorters as being clearly from one meal where meat or fish was the main ingredient of the remains.	Chicken and pasta	Shepherd's pie homemade	Pie, beef and onion, 1/3
Mixed meals and snacks	Rice mixed meal	A collection of waste classified by the sorters as being clearly from one meal where rice was the main ingredient of the remains.	Rice, meal	Rice-based meal	Takeaway fried rice
Mixed meals and snacks	Pasta mixed meal	A collection of waste classified by the sorters as being clearly from one meal where pasta was the main ingredient of the remains.	Pasta meal	Spaghetti bolognaise	Noodle takeaway cooked
Mixed meals and snacks	Vegetable mixed meal	A collection of waste classified by the sorters as being clearly from one meal where vegetables were the main ingredients of the remains.	Potato and spinach curry	Vegetable meal	Roast dinner homemade, mainly potato no meat
Meat and fish	Chicken portion	A piece of chicken where the portion type or cut has been determined at the sort.	Chicken drumsticks, cooked	Chicken, Tesco rotisserie carcass	Chicken breast
Meat and fish	Chicken portion unspecified	A piece of chicken where the portion type or cut has not been specified at the sort.	Chicken leftovers	Chicken, bits	Chicken, pieces, raw
Meat and fish	Chicken product	A chicken-based product manufactured in some way to make it more than a simple cut of chicken.	Chicken nuggets	Chicken bites, breaded	Chicken dippers, frozen, Birds Eye
Mixed meals and snacks	Mixed foods	Waste from multiple food groups that could not be separated by the sorters. They are not necessarily combined as a meal; they have just been found mixed up in the waste and could not be separated for weighing.	Rice/carrot peel	Breadcrumbs and grated cheese	Takeaway pizza crust and spare rib bones
Condiments	Other sauces	Sauces not assigned to specific categories but identifiable as sauces rather than the general category of condiments, sauces etc.	Sauces, takeaway	Mint sauce, Coleman's, 1/3	Tartar sauce
Condiments	Other sauces, condiments etc	Condiment items that do not fit within any of the specific categories listed within the food type.	Miso paste organic Gemini	Lemon curd	Batter for chicken, Super Taste, sealed

Food group	Food type	Explanation	Examples of food waste descriptions given on sort sheet		
Condiments	Other condiments	Condiments not assigned to specific categories but identifiable as condiments rather than the general term of condiments, sauces etc.	Brown sauce	Horseradish	Thousand island dressing
Vegetables	Mixed vegetables	Category used where a mixture of items was found that could not be separated further for weighing but where the contents were identifiable as all being vegetables.	Potato peel/carrot/onion 50/10/40%	Vegetable peel mixed	Potato, onion peel
Vegetables	Other vegetables	Vegetables that did not occur with enough frequency to be allocated a category of their own.	Butternut squash	Asparagus tips cooked	Marrow, whole
Fruit	Mixed fruit	Category used where a mixture of items was found in the sort that could not be separated further for weighing but where the contents were identifiable as all being fruit.	Summer fruits mix, fruit salad	Apple, orange peel	Fruit peel mixed
Fruit	Other fruit	Fruits that did not occur with enough frequency to be allocated to a category of their own.	Guavas x 3	Plantain skin x 2	Lychees

Appendix C: Costing food waste

The food pricing averages file was put together by searching for common items on a number of supermarket websites, such as the Tesco price-check site, in August 2008. To cost items that were not branded, a range of prices were collected in order to calculate an average cost that reflects the variation and availability of each item. An example with costing chicken drumsticks follows.

Table C1 Example of costing chicken drumsticks

	Explanation	*Example*
Food group	Group to which the food waste belongs.	Meat and fish
Food type	Type of food waste.	Chicken drumsticks
Quantity	Quantity or unit of item being costed.	per kg
Brand 1	Example of food from location 1.	Tesco Value bag
Brand 1 price	Price of food (per quantity or unit) from location 1.	£1.53
Brand 2	Example of food from location 2.	Tesco Finest
Brand 2 price	Price of food (per quantity or unit) from location 2.	£5.73
Brand 3	Example of food from location 3.	Sainsbury
Brand 3 price	Price of food (per quantity or unit) from location 3.	£1.76
Brand 4	Example of food from location 4.	Asda
Brand 4 price	Price of food (per quantity or unit) from location 4.	£6.66
Average price specific	Unit price in £.	£3.91875
Average price per gram (pence)	Unit price in £ per gram.	£0.391875

The following tables provide examples of the pricing used for different types of food waste. It should be noted that food waste classified as 'unavoidable' was costed as a proportion of the whole food item. Avoidable food waste was costed for the whole item (as purchased) and will for some foods include an element of costing for the unavoidable part.

Table C2 Examples of dairy food prices

Food type	Quantity	Average price	Price per unit
Milk	1 pint	40p	1 pint = 40p
Butter	250g	92p	1 tbsp (approx. 25g) = 9.2p
Margarine	250g	59p	1 tbsp (approx. 25g) = 5.9p
Butter substitute	250g	44.667p	1 tbsp (approx. 25g) = 4.47p
Yoghurt	4-pack	£1.1425	1 yoghurt (125g) = 28.56p
Tube yoghurts (e.g. Frubes)	Pack of 9	£1.71	1 Frube (40g) = 19p
Fromage frais	Pack of 6	97.5p	1 fromage frais (60g) = 16.25p
Cream	Per 100ml	26.75p	1 tbsp (17ml) = 4.55p
Cheddar cheese	Per kg	£7.115	1 oz (approx. 28g) = 19.92p
Cottage cheese	Per 100g	26.1p	1 tbsp (approx. 25g) = 7.02p
Philadelphia	Per 100g	48.08p	1 tbsp (approx. 25g) = 12.02p
Cheese snacks	Per 100g	81.7p	Each (approx. 20g) = 16.34p
Egg	Box of 6	£1.12	1 egg (60g) = 18.6p
Coleslaw	Per 100g	21p	1 tbsp (approx. 25g) = 5.25p

Table C3 Examples of meat and fish food prices

Food type	Quantity	Average price	Price per unit
Beefsteak	Per kg	£11.185	1 steak (227g) = £2.5389
Beef joint	Per kg	£5.6675	1 joint (approx. 1kg) = £5.67
Pork cuts	Per kg	£6.3825	1 cut (approx. 125g) = 79.78p
Pork joint	Per kg	£4.1825	1 joint (approx. 1.7kg) = £7.11
Lamb cuts	Per kg	£10.625	1 cut (approx. 125g) = £1.328
Lamb joint	Per kg	£6.325	1 joint (approx. 1 kg) = £6.325
Chicken drumsticks	Per kg	£3.919	1 d'stick (approx. 100g) = 39.19p
Chicken thighs	Per kg	£3.03	1 thigh (approx. 125g) = 37.8p
Chicken breasts	Per kg	£9.71	1 breast (approx. 185g) = £1.80
Whole chicken	Per kg	£3.49	1 medium chicken (2kg) = £6.98
Bacon	Per kg	£7.02	1 slice (31.5g) = 22.1p
Sausages	Per kg	£3.46	1 sausage (approx. 57g) = 19.7p
Mince	Per kg	£3.725	1 serving (125g) = 46.56p
Cod fillets	Per kg	£8.88	1 fillet (approx. 170g) = £1.51
Salmon fillets	Per kg	£8.785	1 fillet (approx. 130g) = £1.142
Smoked salmon parcels	Per kg	£26.68	1 parcel (approx. 56g) = £1.494
Rainbow trout (pre-packed)	Per kg	£5.85	1 fillet (approx. 340g) = £1.99
Tuna steak	Per kg	£7.256	1 steak (approx. 140g) = £1.02
Fresh prawns	200g	£2.543	100g = £1.27
Frozen prawns	100g	£0.841	100g = 84.1p
Sliced sandwich ham	Per slice	5.05p	1 slice (25g) = 5.05p
Gammon	Per kg	£4.461	1 joint (750g) = £3.346
Sausage rolls	Per 100g	23.43p	1 roll (33g) = 7.81p

Table C4 Examples of convenience and ready-meal food prices

Food type	Quantity	Average price	Price per unit
Fresh ready-meals	Per 100g	38.04p	1 serving (225g) = £0.864
Fresh pizza	Per 100g	69.37p	88g (¼ of 12" thin pizza) = 61p
Fresh pies	Per 100g	58.75p	1 serving (150g) = 88.13p
Fresh soup	Per 100g	24.96p	1 serving (200g) = 49.92p
Fresh pasta	Per 100g	29.7p	1 serving (100g) = 29.7p

Table C5 Examples of vegetable food prices

Food type	Quantity	Average price	Price per unit
Potatoes	Per kg	77.95p	1 potato (150g) = 11.69p
Sweet potato	Per kg	£2.55	1 potato (150g) = 38.25p
Carrots	Per kg	71.56p	1 carrot (140g) = 10.7p
Frozen peas	Per 100g	9.3p	1 serving (approx 56g) = 5.2p
Tinned peas	Per 100g	8p	½ tin = 12p
Sweetcorn	Per 100g	12.9p	½ tin = 12.9p
Courgettes	Per 100g	19.8p	1 courgette (150g) = 29.7p
Peppers	Each	55.75p	1 pepper (160g) = 55.75p
Tomatoes	Per 100g	16.1p	1 tomato (84g) = 13.5p
French beans	Per 100g	57.7p	1 bean (3g) = 0.173p
Lettuces	Each (600g)	56.5p	1 serving (¼ lettuce) = 14.13p
Onions	Per 100g	7.85p	1 onion (100g) = 7.85p

Food type	Quantity	Average price	Price per unit
Broccoli	Per kg	£1.998	1 serving (¼ broccoli) = 19.63p
Cauliflowers	Each	81p (544g)	1 serving (¼ cauliflower.) = 20.25p
Mushrooms	Per 100g	27.8p	1 mushroom (30g) = 8.3p
Cabbages	Each (700g)	93.78p	1 serving (¼ cabbage) = 23.45p
Turnips	Per kg	£1.598	1 turnip (144g) = 23p
Swedes	Each	69.3p	1 swede (585g) = 69.3p
Leeks	Per kg	£4.50	1 leek (193g) = 86.85p
Avocados	Each	80.25p	1 avocado (160g) = 80.25p
Parsnips	Per g	£1.91	1 parsnip (146g) = 27.886p
Cucumbers	Each	79.5p	½ cucumber (190g) = 39.75p
Bagged salad	Per 100g	83.95p	1 serving (¼ bag) = 20.99p
Brussel sprouts	Per 100g	32p	1 sprout (6g) = 0.192p
Butternut squash	Per kg	1.56	1 squash (1200g) = £1.872

Table C6 Examples of fruit food prices

Food type	Quantity	Average price	Price per unit
Oranges	Per kg	£1.438	1 orange (150g) = 21.57p
Apples	Per kg	£1.48	1 apple (120g) = 17.76p
Lemons	Per lemon	19.575p	1 lemon (150g) = 19.75p
Grapefruit	Per grapefruit	33.75p	1 grapefruit (300g) = 33.75p
Pears	Per kg	£1.685	1 pear (115g) = 19.38p
Bananas	Per kg	£1.21	1 banana (130g) = 15.73p
Kiwis	Per kiwi	15.81p	1 kiwi (120g) = 15.81p
Grapes	Per kg	£2.473	1 grape (5g) = 1.2365p
Melons	Each (800g)	£1.48	1 serving (⅛ melon) = 18.5p
Raisins	Per 100g	25.45p	1 serving (42.5g) = 10.81p
Strawberries	454g punnet	£1.8925	1 punnet = £1.8925
Blueberries	150g punnet	£1.14	1 punnet = £1.14
Blackberries	150g punnet	£1.446	1 punnet = £1.446
Plums	Per kg	£3.656	1 plum (94g) = 34.3664p
Peaches	Per kg	£4.74	1 peach (160g) = 75.84p
Nectarines	Per nectarine	£0.46	1 nectarine (150g) = 46p
Dried apricots	Per 100g	44.35p	1 apricot (5g) = 2.2175p
Pineapple	Each (2400g)	83.75p	¼ pineapple = 20.94p
Mangoes	Each	£1.00	1 mango = £1.00

Table C7 Examples of bakery food prices

Food type	Quantity	Average price	Price per unit
Granary bread	Per loaf	£1.56	1 slice (44g) = 7.8p
White bread	Per loaf	85.5p	1 slice (40g) = 4.275p
Brown bread	Per loaf	66.5p	1 slice (40g) = 3.325p
Rolls	Each	31.53p	1 roll (65g) = 31.53p
Cakes (loaf-type cake)	Each (160g)	£1.0825	1 serving ¼ cake (40g) = 27.06p
Fruit cake bars	Each	16.5p	1 cake bar (40g) = 16.5p
Chocolate cake bars	Each	22p	1 cake bar (30g) = 22p
Tortilla	Each	18.43p	1 tortilla (63g) = 18.43p
Bagels	Each	25.33p	1 bagel (85g) = 25.33p
Croissants	4-pack	59p	1 croissant = 14.8p
Pain au chocolat	4-pack	£1.2175	1 pain au chocolat = 30.43p
Danish pastries	Each	40.83p	1 pastry = 40.83p
Pitta bread	Each	3.77p	1 pitta (80g) = 3.77p
Crumpets	Each	5.8p	1 crumpet (55g) = 5.8p
Pancakes	Each (60g)	7p	1 pancake = 7p

Table C8 Examples of dried foods prices

Food type	Quantity	Average price	Price per unit
Pasta (penne used as example)	Price per 100g	22.5p	1 serving (100g) = 22.5p
Rice (basmati used as example)	Per 100g	27.5p	1 serving (75g) = 20.6p
Couscous	Per 100g	25.16p	1 serving (75g) = 18.87p
Cereal bars	Per 6-pack	£1.8325	1 bar (approx. 32g) = 30.53p
Biscuits	Per 100g	19.2p	1 biscuit (12g) = 2.304p
Crackers	Per 100g	39.15p	1 cracker (5g) = 1.96p
Porridge	Per 100g	27.6p	1 serving (50g) = 13.8p 1 serving, 300g (cooked) = 29.8p
Muesli	Per 100g	18p	1 serving (35g) = 6.3p
Sugary cereal	Per 100g	48.45p	1 serving (35g) = 16.9p
Wheat cereal	Per 100g	28.65p	1 serving (35g) = 10.27p
Crisps	Multi-pack of 6	£1.075	1 bag (25g) = 16.79p
Crisps	Big bag (150g)	£1.133	¼ bag = 28.3p
Large chocolate bars	Per 100g	56.1p	¼ bar = 14p
Single chocolate bars	Each	34.25p	1 bar (40g) = 34.25p
Oatcakes	Per 100g	29.33p	1 oatcake (8g) = 2.64p
Teabags	Per bag	1.8p	1 teabag = 1.8p
Coffee grounds	Per 100g	99.65p	1 serving (7g) = 6.975p
Dried snack meals	Per 100g	73.95p	1 serving (85g) = 62.86p

Table C9 Examples of tinned food prices

Food type	Quantity	Average price	Price per unit
Soup	Per tin	60.35p	½ tin = 30.175p
Tomatoes	Per tin	38p	½ tin = 19p
Spaghetti	Per tin	34.06p	½ tin = 17.03p
Baked beans	Per tin	43p	½ tin = 21.5p
Kidney beans	Per tin	43.75p	¼ tin = 21.88p
Pasta sauce	Per 100g	28.9p	1 serving (125g) = 36.125p
Curry sauce	Per 100g	28.63p	1 serving (125g) = 35.78p
Tinned tuna	Per 100g	44.66p	½ tin = 22.33p
Olive oil	Per 100ml	61.3p	1 tablespoon (17ml) = 10.42p
Vegetable/sunflower oil	Per 100ml	9.1p	1 tablespoon (17ml) = 1.547p

Table C10 Examples of frozen food prices

Food type	Quantity	Average price	Price per unit
Ice cream	Per 100ml (43.5g)	31.25p	1 serving (60g) = 43.1p
Frozen pizza	Per 100g	45.31p	88g (¼ 12" thin pizza) = 39.87p
Frozen chips	Per 100g	10.08p	1 chip (8g) = 0.8064p
Frozen ready-meals	Per 100g	41.28p	1 serving (225g) = 92.88p
Frozen pies	Per 100g	32p	1 serving (150g) = 48p
Quorn	Per 100g	63.83p	1 serving (50g) = 31.15p
Fish fingers	Per 100g	28.88p	1 fish finger (30g) = 2.5p
Aunt Bessie's roast potatoes	Per 100g	18.08p	1 potato (approx. 50g) = 9.4p
Aunt Bessie's Yorks puddings	Per 100g	34.86p	1 pudding (30.83g) = 10.75p

Table C11 Examples of unavoidable food waste prices

Item	Price of original	Proportion	Weight	Price per unit
Apple core	1 apple = 17.76p	1/5 of original	24g	3.552p
Apple peel	1 apple = 17.76p	1/6 of original	20g	2.96p
Orange peel	1 orange = 21.76p	1/5 of original	30g	4.352p
Pear peel	1 pear = 19.38p	1/6 of original	19.2g	3.23p
Pear core	1 pear = 19.38p	1/5 of original	23g	3.876p
Kiwi peel	1 kiwi (120g) = 15.81p	1/6 of original	20g	2.635p
Melon rind	1 melon = £1.48	1/5 of original	160g	29.6p
Grapefruit rind	1 grapefruit = 33.75p	1/5 of original	60g	6.75p
Satsuma peel	1 satsuma = 100g, 18.9p	1/5 of price	20g	3.78p
Pineapple skin	1 pineapple = 83.75p	1/6 of original	400g	16.75p
Banana skin	1 banana = 15.73p	¼ of original	32.5g	3.93p
Lemon skin	1 lemon (150g) = 19.575p	1/5 of price	30g	3.915p
Lemon slices (used)	1 lemon (150g) = 19.575p	1/6 of price	25g	3.2625p
Grape stalk	Grapes = 24.75p per 100g	Stalk for 1 bunch = 16g	16g	3.96p
Plum stone	1 plum = 34.3664p	1/5 of original	18.8g	14.968p
Peach stone	1 peach = 74.84p	1/5 of original	32g	15.168p
Nectarine stone	1 nectarine = 46p	1/5 of original	30g	9.2p
Avocado skin and stone	1 avocado (160g) = 80.25p	¼ of original	38g	20.06p
Spring onion ends	1 = 10g = 4.96p	1/10 of original	1g	0.496p
Lettuce leaves	1 (600g) = 56.5p	1/50 of original	12g	0.02p

Item	Price of original	Proportion	Weight	Price per unit
Tomato stalks	1 tomato (100g) = 16.1p	1/100 of original	1g	0.161p
Tomato ends	1 tomato (100g) = 16.1p	1/10 of original	10g	1.61p
Tomato skin	1 tomato (100g) = 16.1p	1/6 of original	16.6g	2.683p
Potato peelings	1 potato = 11.69p	1/6 of original	25g	1.948p
Carrot peelings	1 carrot = 10.7p	1/6 of original	23.3g	1.783p
Turnip peelings	1 turnip = 23p	1/6 of original	24g	3.83p
Sweet potato peelings	1 sweet potato = 38.25p	1/6 of original	25g	6.375p
Mushroom peelings	1 mushroom (30g) = 8.3p	1/6 of original	5g	1.383p
Parsnip peelings	1 parsnip (146g) = 27.886p	1/6 of original	24.3g	4.648p
Swede peelings	1 swede (585g) = 69.3p	1/6 of original	97.5g	11.55p
Brussel sprout peelings	1 sprout (6g) = 0.192p	1/6 of original	1g	0.032p
Cabbage core and outers	1 cabbage (700g) = 93.78p	1/7 of original	100g	13.4p
Leek peelings	1 leek (193g) = 86.85p	1/5 of original	38.6g	17.37p
Onion peelings	1 onion = 7.85p	1/5 of original	20g	1.57p
Broccoli stalks	1 (419g) = 78.52p	1/5 of original	83.8g	15.704p
Cauliflower outer leaves	1 (544g) = 81p	1/10 of original	54.4g	8.1p
Cucumber peel	1 cucumber = 79.5p	1/6 of original	63.3g	13.25p
Pepper seeds	1 pepper = 55.75p	1/5 of original	32g	11.15p
Courgette tops and tails	1 courgette (150g) = 29.7p	1/10 of original	15g	2.97p
Bacon rinds	1 slice = 22.1p	1/5 original	6.3g	5.95p
Pork fat	1 pork chop = 79.78p	1/6 of original	20.1g	13.3p
Skin from chicken thighs	1 thigh = 37.8p	1/6 of original	20.86g	6.3p
Bones: chicken drumsticks	1 drumstick = 39.19p	¼ of original	25g	9.8p
Bones: chicken thighs	1 thigh = 37.8p	¼ of original	31.3g	9.45p
Bones: chicken carcass	1 chicken = £6.98	¼ of original	500g	£1.745
Bones: pork chops	1 chop = 79.78p	1/5 of original	25g	15.96p
Bones: lamb chops	1 chop = £1.328	1/5 of original	25g	26.6p
Bones: cod	1 fillet = £1.51	1/6 of original	28.3g	25.17p
Bones: trout	1 fillet = £1.99	1/6 of original	56.7g	33.2p
Fat from sliced ham	1 slice (25g) = 5.05p	1/10 of original	2.5g	0.505p
Cooked pasta	100g dried = 22.5p	Increase in weight 100%	100g	11.25p
Cooked rice	100g dried = 27.5p	Increase in weight 100%	100g	13.75p
Cooked couscous	100g dried = 25.16p	Increase in weight 100%	100g	12.58p
Eggshell	1 egg = 18.6p	¼ of original	15g	4.6p
Bread crusts (edges)	1 slice = 4.275p	¼ of original	10g	1.07p
Bread crusts (ends)	1 slice = 4.275p	Same as original	40g	4.275p

Appendix D: Profile of participating households

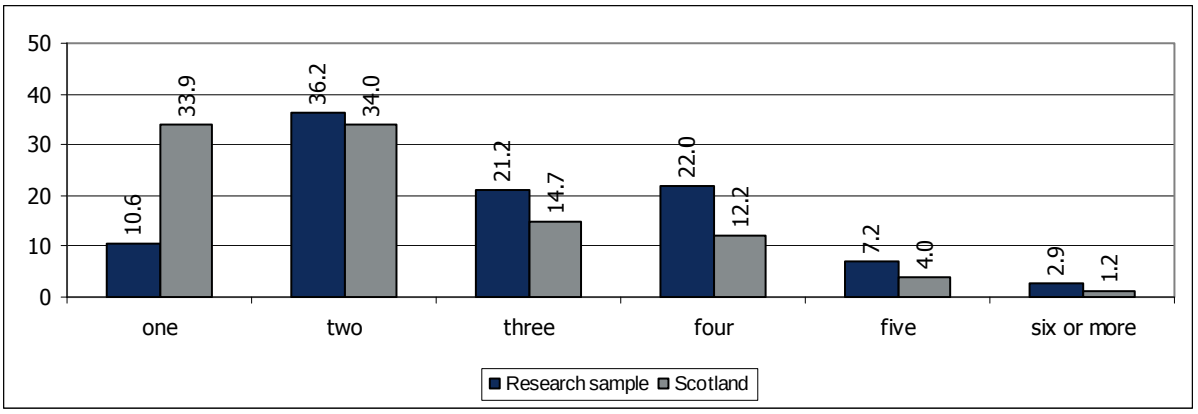
Introduction

The profile of the households included in the waste compositional research is important because it determines the extent to which results can be generalised to all households in Scotland. The households were selected to provide a good cross-section of Scotland with respect to key demographics, location, and waste collection type, frequency and receptacles. This was to enable statistically valid interpretation of the findings and, in particular, to enable the results to be extrapolated to represent the larger population, weighting where necessary.

The following figures illustrate the comparison between the research sample and Scotland as a whole. Information on Scotland was taken from the 2007 mid-year Census estimates (source www.gro-scotland.gov.uk/statistics) for household size and tenure, and from the 2001 Census (source www.scrol.gov.uk) for other variables as 2007 mid-year estimates were not available. It will be noted that, in the reported analysis of demographics associated with this report, the individual demographics do not perfectly align with the Census data for Scotland. This is because, for logistical reasons, this report does not include data collected from flatted properties, which will include single-occupancy households, students, low-income households and council tenants. However, weighting the observed weights and costs of food waste by household size will compensate for the exclusion of flats from the compositional analysis. For further information please see Sections 1.3 and 1.4.

Number of occupants in household

Figure D1 Proportion of respondents within households of different sizes

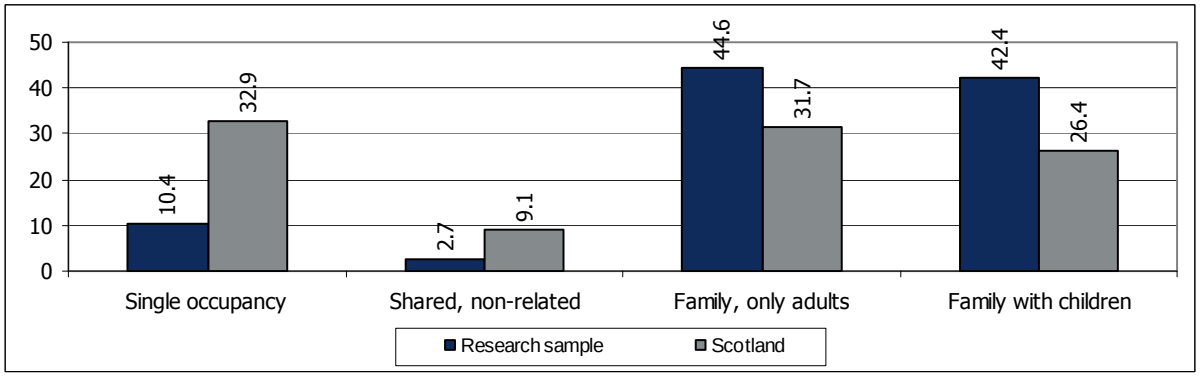


The chart above illustrates the number of occupants within the respondent households and within households in Scotland according to the 2007 mid-year estimates. It should be noted that these estimates provide data only up to houses of three occupants or more and so estimates for households of three, four, five and six or more occupants were derived using 2001 Census proportions.

The chart shows that single-occupancy households are significantly under-represented in this study. This is likely to be because this analysis does not include residents of flats (see Section 1.4). In order to compensate for the lack of small flatted properties' compositional data, the household data is weighted according to household size so that single occupants are fairly represented.

Household composition

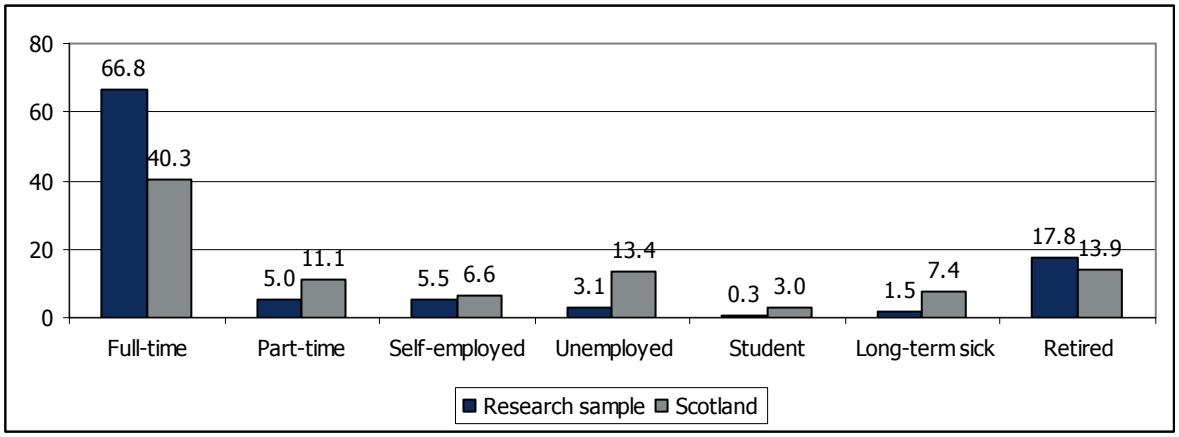
Figure D2 Proportion of respondents within different household compositions



The chart above illustrates the household composition of respondents and of households in Scotland according to the 2001 Census. It shows that single-occupancy households are under-represented whilst families are over-represented. Again this is likely to be due to the fact that flats had to be excluded from this analysis for logistical reasons.

Employment status of head of household

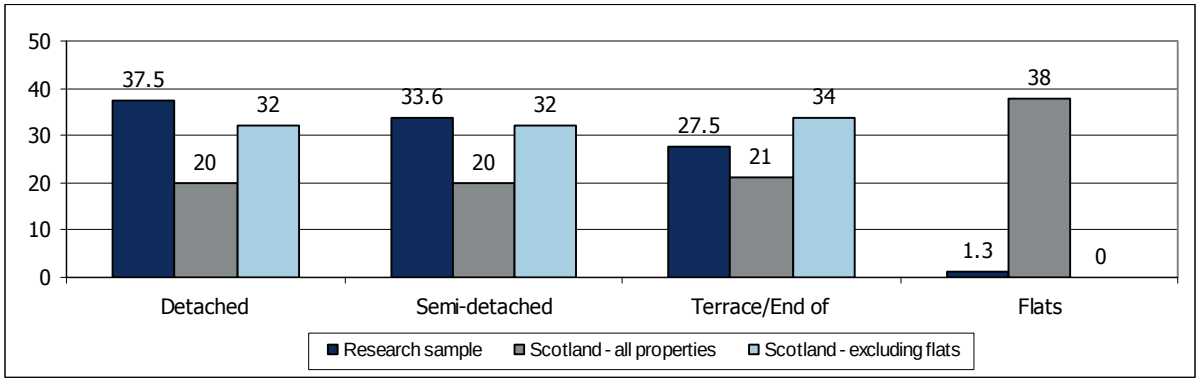
Figure D3 Proportion of respondents according to the main earner's job status



The chart above illustrates the employment status of the head of respondents' households and of households in Scotland according to the 2001 Census. The profile of research participants shows that full-time workers are over-represented, whilst unemployed, part-time and student households are slightly under-represented. This is likely to be due in part to flat-dwellers being excluded from the analysis, but may also reflect the relative scarcity of some groups in the population (e.g. students); despite the relatively large sample size it was not possible to cover every group adequately.

Type of property

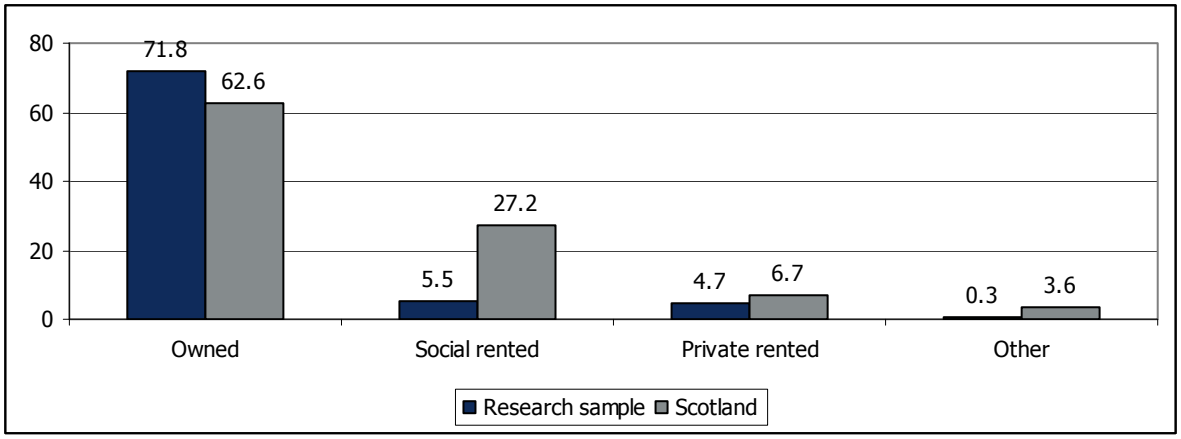
Figure D4 Proportion of respondents within households living in different types of property



The chart above illustrates the types of property lived in by the respondents and the types of property in Scotland according to the 2007 mid-year estimates. The obvious discrepancy is the exclusion of food waste from flatted properties with a communal entrance; when flats are excluded from the estimates, the research sample is better aligned to the population.

Tenure of property

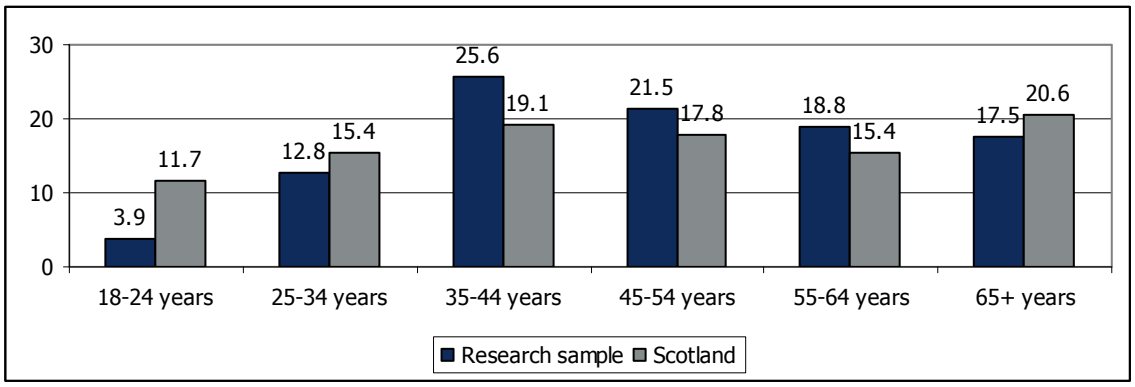
Figure D5 Proportion of respondents by tenure



The chart above illustrates the tenure of the property of the respondents and of households in Scotland according to the 2001 Census. It should be noted that the Census data does not distinguish between properties that are owned outright and those owned through an outstanding loan. The profile of the research participants is different from the Census data, particularly with respect to social housing and private ownership; the discrepancies are almost certainly due to the exclusion of flats from this report (see Section 1.4).

Age group

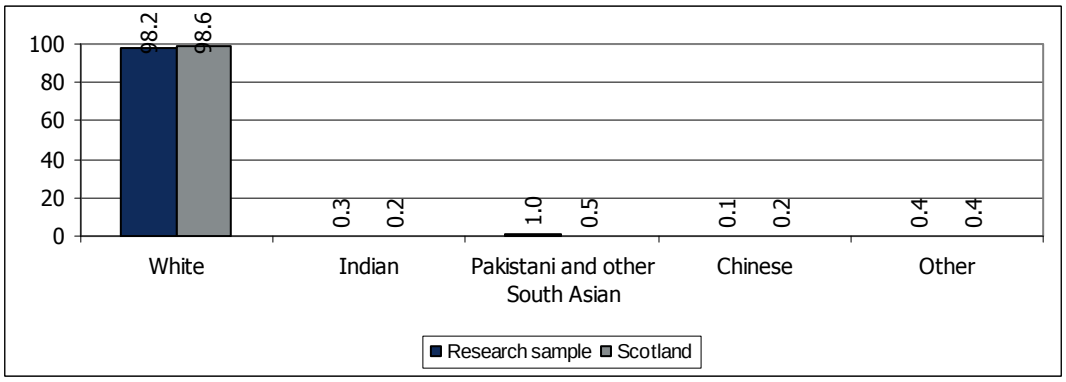
Figure D6 Proportion of respondents within different age groups



The chart above illustrates the age band in which respondents fall and the age of individuals living in Scotland according to the 2007 mid-year estimates. It shows that respondents under 25 years of age are under-represented whilst those aged 35-44 years are over-represented. This is likely to be due to the requirement to interview householders with some responsibility for food shopping and/or preparation.

Ethnic origin

Figure D7 Proportion of respondents living within households by ethnicity



The chart above illustrates the ethnic origin of the participants in the research and of the household reference person living in Scotland according to the 2001 Census. The ethnic origin of the participants nearly mirrors that of the population as a whole.

Implications

Although respondents who were interviewed and subsequently had their waste analysed were selected on a random basis, there are several ways in which the profile of the respondents does not fully represent the national profile of Scotland. The significant ones are as follows:

- number of occupants and household composition, with smaller households being under-represented – this is because more than one-third of properties in Scotland are socially owned flats consisting of a small number of occupants who are likely to be unrelated;
- employment status, with unemployed, long-term sick and student households being under-represented – again, this is most likely to be due to the issue of flatted properties;

- type of property, with shared-entrance flats being absent altogether for methodological and analytical reasons; and
- age band, with individuals under 25 years being under-represented – this is because interviews were conducted with householders with some responsibility for food shopping and/or preparation.

To take account of the shortcomings of the achieved sample, all calculations of food waste have been based on calculating individual estimates for households of different sizes (see Section 1.5). Household size has been deemed to be the most useful factor to use in this way because it takes account, to some extent, of the lack of flat-dwellers in the sample.

Appendix E: Questionnaire used prior to waste collection and analysis

The following questionnaire was used during the doorstep interviews with householders prior to the collection of waste for sorting.

Background details								
Residence	Detached	☐1	Semi-detached	☐2	Terrace / end of	☐3	FLAT	Council ☐4.1 Hillcrest ☐4.2 Private ☐4.3
Local authority								
Mixed collections frequency	2-weekly ☐1							Weekly ☐2
Mixed waste receptacle	Wheelie bin ☐1							Sack ☐2
Food waste collections	2-weekly ☐1				Weekly ☐2			None ☐3

Perceptions of household food waste

Q1a.	**How responsible are you for food shopping in your house?**	
Q1b.	**And how responsible are you for the preparation and cooking of food in your house?**	
	Q1a (shop)	**Q1b (cook)**
I have responsibility for all or most of it	☐1	☐1
I have responsibility for about half of it	☐2	☐2
I have responsibility for less than half of it	☐3	☐3
I'm not responsible for any of it	☐4	☐4

GO TO Q2 IF CODE 1-3 FROM *EITHER* A or B

IF *BOTH* CODE 4 THEN CLOSE

Q2. [*SHOWCARD* of examples of food waste] **Thinking about the different types of food waste that may occur, how much uneaten food, overall, would you say you generally end up throwing away?** [SINGLE CODE ONLY]	Quite a lot	☐1	A reasonable amount	☐2
	Some	☐3	A small amount	☐4
	Hardly any	☐5	None ☐6	Don't know ☐7

Q3. Thinking about when you have to throw food items away, to what extent, if at all, does it bother you?	A great deal	☐1	A fair amount	☐2	A little	☐3
	Not very much	☐4	Not at all	☐5	Don't know	☐7

Q4. How much effort do you and your household go to in order to minimise the amount of uneaten food you throw away?	A great deal	☐1	A fair amount	☐2	A little	☐3
	Not very much	☐4	None at all	☐5	Don't know	☐7

Q5. Compared with this time last year, would you say that the amount of uneaten food that you throw away has increased, decreased or stayed the same? Do you waste… [READ OUT. REVERSE. SINGLE CODE]

Much more	☐1	**GO TO Q7**	Slightly more	☐2	**GO TO Q7**	The same amount	☐3	**GO TO Q7**
Slightly less	☐4	GO TO Q6	Much less	☐5	GO TO Q6	D/K, can't remember	☐6	**GO TO Q7**

Q6. What steps have you taken which have resulted in your household throwing away less food than last year? [PROBE…WRITE IN AND CODE UP AFTER]

More careful about what we buy	☐1	Better at planning meals so that food isn't wasted	☐2
Better at using up food before we buy new food	☐3	Better at using leftovers	☐4
Better at measuring the correct portion sizes	☐5	Now buy more food produced in Scotland	☐6
Better at judging when food is still good to eat	☐7	Now understand date labels better	☐8
Better at using our freezer	☐9	Use fruit and vegetables in new ways	☐10
Now make a list before we go shopping	☐11	Now do a 'stock check' before we go shopping	☐12
Now store more fruit and vegetables in the fridge	☐13	Other (specify)	☐14
Don't know ☐15		No steps taken; we waste less because of a change in diet or household composition	☐16

VERBATIM

Food shopping activity

Q7. Where do you normally do your **main** food shopping? And where do you normally go to top-up your food shopping? [TICK USUAL OPTIONS ONLY]		Main food shop		Top up food shop	
	1. National supermarket (write in)	☐1	*1.*	☐1	*1.*
	2. Local shop	☐2		☐2	
	3. Farmer's market	☐3	*4.*	☐3	*4.*
	4. Internet (specify)	☐4		☐4	
	5. Box scheme	☐5	*6.*	☐5	*6.*
	6. Other (write in)	☐6		☐6	

Q8. Before you do your main food shopping, how regularly do you do the following?	Always	Most times	Some times	Rarely	Never
A. Check what food is already in the house	☐1	☐2	☐3	☐4	☐5
B. Plan the meals to be cooked on the next few days	☐1	☐2	☐3	☐4	☐5
C. Write a list and stick to it as much as possible	☐1	☐2	☐3	☐4	☐5

Q9. When you do your food shopping, how regularly do you do the following?
NB – fresh foods are items that are not tinned or frozen such as bread, yoghurts, cheese, crisps, cereals, vegetables and fruit

	Always	Most times	Some times	Rarely	Never
A. Buy fresh foods that are on offer (e.g. 50% extra free)	☐1	☐2	☐3	☐4	☐5
B. Buy fresh foods that are 'Buy One Get One Free'	☐1	☐2	☐3	☐4	☐5
C. Buy fresh foods that are reduced to clear	☐1	☐2	☐3	☐4	☐5
D. Buy fresh foods that are sold in multi-packs	☐1	☐2	☐3	☐4	☐5
E. Buy larger pack sizes of fresh foods because they are cheaper	☐1	☐2	☐3	☐4	☐5

VERBATIM

If all in Q9 are coded 5 go to Q11

Q10. And how frequently do you find you have to throw away fresh food that was purchased in the following circumstances? [READ OUT. SINGLE CODE] If **always / most times** ask which types of food and write in below

	Always	Most times	Some times	Rarely	Never
A. Items that were on offer, 'Buy One Get One Free', reduced to clear, in a multi-pack or in a larger pack size which have **gone off or past its food date**	☐1	☐2	☐3	☐4	☐5
B. Items that were sold in multi-packs that are **unwanted** – for example unwanted flavours	☐1	☐2	☐3	☐4	☐5

Types of food A	Types of food B

Q11. Do you grow your own fruit or vegetables?						
	Fruit trees/bushes	☐1	**Go to Q12**	No	☐3	**Go to Q13**
	Vegetables/salads	☐2	**Go to Q12**			

Q12. Thinking about the times when you have home grown fruit or vegetables that your household does not want to eat, what do you tend to do with the surplus? READ OUT. TICK ALL THAT APPLY

Sell or give it away	☐1	Freeze it (or cook and freeze)	☐2	VERBATIM
Compost it	☐3	Feed it to animals	☐4	
Throw it in the residual bin	☐5	Throw it in the council's food waste collection	☐6	
Leave it on the tree/ground to rot	☐7	Other (write in)	☐8	

Storage of food and food dates

Q13. How do you usually store these types of foods.. [*SHOWCARD*] ***1. when you get home from shopping?*** ***2. after they have been opened or partly used?***		**1. When bought**					**2. When opened or used**				
		LOOSE	AIRTIGHT	OPEN PACK	NOT BOUGH	OTHER	LOOSE	AIRTIGHT	OPEN PACK	N/A	OTHER
	Bread	☐1	☐2	☐3	☐4		☐1	☐2	☐3	☐4	
	Sliced meats	☐1	☐2	☐3	☐4		☐1	☐2	☐3	☐4	
	Apples	☐1	☐2	☐3	☐4		☐1	☐2	☐3	☐4	
	Bananas	☐1	☐2	☐3	☐4		☐1	☐2	☐3	☐4	
	Carrots	☐1	☐2	☐3	☐4		☐1	☐2	☐3	☐4	
	Cheese	☐1	☐2	☐3	☐4		☐1	☐2	☐3	☐4	
	Potatoes	☐1	☐2	☐3	☐4		☐1	☐2	☐3	☐4	

Q15. In general, where do you store the following types of foods *(exclude not bought in Q13 above)*? *SHOWCARD*					
	In open	Cup board / dark	Fridge	Freezer	Other (specify)
Bread	☐1	☐2	☐3	☐4	
Sliced meats	☐1	☐2	☐3	☐4	
Apples	☐1	☐2	☐3	☐4	
Bananas	☐1	☐2	☐3	☐4	
Carrots	☐1	☐2	☐3	☐4	
Cheese	☐1	☐2	☐3	☐4	
Potatoes	☐1	☐2	☐3	☐4	
Leftover main meals	☐1	☐2	☐3	☐4	

Q16. When shopping, how often do you check how long is left before the food date is reached for the following food items? [READ OUT. SINGLE CODE EACH]							
	Always	Most times	Sometimes	Rarely	Never	N/A	COMMENTS
Fresh fruit	☐1	☐2	☐3	☐4	☐5	☐6	
Vegetables	☐1	☐2	☐3	☐4	☐5	☐6	
Fresh meat or fish	☐1	☐2	☐3	☐4	☐5	☐6	
Milk	☐1	☐2	☐3	☐4	☐5	☐6	
Eggs	☐1	☐2	☐3	☐4	☐5	☐6	
Cheese	☐1	☐2	☐3	☐4	☐5	☐6	
Yoghurts	☐1	☐2	☐3	☐4	☐5	☐6	
Bread	☐1	☐2	☐3	☐4	☐5	☐6	
Potatoes	☐1	☐2	☐3	☐4	☐5	☐6	
Ready meals	☐1	☐2	☐3	☐4	☐5	☐6	

Q17. To what extent do you get rid of the following types of food when the food date has been reached, regardless of what it looks like? [READ OUT. SINGLE CODE EACH]							
	Always	Most times	Sometimes	Rarely	Never	N/A	COMMENTS
Fresh fruit	☐1	☐2	☐3	☐4	☐5	☐6	
Vegetables	☐1	☐2	☐3	☐4	☐5	☐6	
Fresh meat or fish	☐1	☐2	☐3	☐4	☐5	☐6	
Milk	☐1	☐2	☐3	☐4	☐5	☐6	
Eggs	☐1	☐2	☐3	☐4	☐5	☐6	
Cheese	☐1	☐2	☐3	☐4	☐5	☐6	
Yoghurts	☐1	☐2	☐3	☐4	☐5	☐6	
Bread	☐1	☐2	☐3	☐4	☐5	☐6	
Ready meals	☐1	☐2	☐3	☐4	☐5	☐6	
Bagged salads/leaves	☐1	☐2	☐3	☐4	☐5	☐6	
Coleslaws	☐1	☐2	☐3	☐4	☐5	☐6	

Q18. There are several types of food date that food manufacturers and shops put on packaging. Looking at the statements on the card, which would you say relates to a (1) best before date? And which to a (2) sell by date? And which to a (3) use by date? [*SHOWCARD*. SINGLE CODE EACH]						
		1. Best before	2. Sell by	3. Use by date	Don't know	COMMENTS
A	It is not safe to eat food after this date	☐1	☐2	☐3	☐4	
B	After this date food is safe to eat, but it may not be at its best quality	☐1	☐2	☐3	☐4	
C	Food is safe to eat but should not be displayed in the store after this date for stock control reasons	☐1	☐2	☐3	☐4	

Food preparation in the household

Q19. In a normal week, how many days does your household do the following? READ OUT. SINGLE CODE					
	5-7 times a week	3-4 x wkly	1-2 x wkly	Less than weekly	N/A
Cook a meal from scratch	☐1	☐2	☐3	☐4	☐5
Eat out or eat a takeaway	☐1	☐2	☐3	☐4	☐5
Eat pre-prepared foods like a ready meal or pizza	☐1	☐2	☐3	☐4	☐5
All members of the household eat the same main meal (tick N/A if single occupant)	☐1	☐2	☐3	☐4	☐5

Q20. And how has this changed compared to this time last year? Would you say you *<<read out activity>>* **a lot more, a little more, about the same, a little less, a lot less now?** [SINGLE CODE EACH]						
	A lot more frequent	A little more frequent	About the same	A little less frequent	A lot less frequent	N/A
Cook a meal from scratch	☐1	☐2	☐3	☐4	☐5	☐6
Eat out or eat a takeaway	☐1	☐2	☐3	☐4	☐5	☐6
Eat pre-prepared foods like a ready meal or pizza	☐1	☐2	☐3	☐4	☐5	☐6
All members of household eat same main meal	☐1	☐2	☐3	☐4	☐5	☐6

Q21. When preparing or serving a meal, how often do you consider portion sizes? [SINGLE CODE]					**VERBATIM**
	Always	☐1	Most of the time	☐2	
	Sometimes	☐3	Rarely	☐4	
	Never	☐5			

Q22. How often do you throw away the following types of food because the portion sizes were too big? [READ OUT. SINGLE CODE EACH]		Always	Most times	Sometimes	Rarely	Never	N/A
	Rice	☐1	☐2	☐3	☐4	☐5	☐6
	Pasta	☐1	☐2	☐3	☐4	☐5	☐6
	Meat or fish	☐1	☐2	☐3	☐4	☐5	☐6
	Potatoes	☐1	☐2	☐3	☐4	☐5	☐6
	Other vegetables	☐1	☐2	☐3	☐4	☐5	☐6
	Homemade meals	☐1	☐2	☐3	☐4	☐5	☐6

Disposal of household waste

Q23. Has your household ever composted waste at home?				**VERBATIM**
	Currently compost at home	☐1	**Go to Q24**	
	Used to compost but no longer do so	☐2	**Go to Q25**	
	Have never composted at home	☐3	**Go to Q25**	

Q24. Which of the following do you use to make compost at home?					VERBATIM
	Compost bin bought privately	☐1			
	Compost bin from council/Waste Aware Scotland (*SHOWCARD*)	☐2			
	Home made bin	☐3	Loose compost heap	☐4	
	Green-cone/digester	☐5	Wormery	☐6	
	Leafmoulder/plastic bags	☐7	Other -specify	☐8	

Q25. Overall, how much of your food waste like vegetable peelings, plate scrapings and mouldy or unwanted food, meat and fish would you say is disposed of in the following ways? [READ OUT…TICK ALL THAT APPLY]

	All (100%)	Most (75-99%)	About half (25-74%)	A little (< 25%)	None	VERBATIM
Home compost	☐1	☐2	☐3	☐4	☐5	
Regular waste	☐1	☐2	☐3	☐4	☐5	
Council food waste collection scheme	☐1	☐2	☐3	☐4	☐5	
Sink, toilet or drain	☐1	☐2	☐3	☐4	☐5	
Fed to animals	☐1	☐2	☐3	☐4	☐5	
Other (specify)	☐1	☐2	☐3	☐4	☐5	

Q26. How often do you have a clear out of food that is no longer wanted from each of these storage areas?

	Every food shop	Weekly	Fortnightly	Monthly	Quarterly	Yearly	Less than yearly	Never
Cupboard	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
Fridge	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
Freezer	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8

Q27. How often do you check food stocks in these storage areas to ensure the oldest is consumed first?

	More than weekly	Weekly	Fortnightly	Monthly	Quarterly	Yearly	Less than yearly	Never
Cupboard	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
Fridge	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8
Freezer	☐1	☐2	☐3	☐4	☐5	☐6	☐7	☐8

Q28. What do you do usually do with food that is left over ***1. on the plate after serving?*** ***2. in cooking pan or dish unserved?*** SINGLE CODE EACH		1. Food left on the plate	2. Food left in pan or dish
	Residual bin	☐1	☐1
	Separate council food collection	☐2	☐2
	Fed to animals	☐3	☐3
	Sink / toilet / drain	☐4	☐4
	Kept for another meal ***Does it usually get eaten?***	☐5 *Always/mostly* ☐1 *Sometimes* ☐2 *Rarely/never* ☐3	☐5 *Always/mostly* ☐1 *Sometimes* ☐2 *Rarely/never* ☐3
	Other (write in)		
	Not applicable	☐0	☐0

Perceptions on food waste issues

Q29. I'm going to read out some statements about different issues….. Please indicate the extent to which you agree or disagree with each.

	Strongly agree	Agree	Disagree	Strongly disagree	N/A	VERBATIM
A. When I buy fresh fruit and vegetables I try to buy items that are available loose rather than pre-packed, so I can buy the amount I need	☐1	☐2	☐3	☐4	☐5	
B. I prefer to buy foods that are organic	☐1	☐2	☐3	☐4	☐5	
C. I prefer to buy foods that are produced in Scotland	☐1	☐2	☐3	☐4	☐5	
D. The current economic climate means I am careful	☐1	☐2	☐3	☐4	☐5	

Q29. I'm going to read out some statements about different issues..... Please indicate the extent to which you agree or disagree with each.						
	Strongly agree	Agree	Disagree	Strongly disagree	N/A	VERBATIM
about buying only foods that I know will be fully eaten						
E. Due to the current economic climate I try to buy cheaper brands even though they may not always be fully eaten	☐1	☐2	☐3	☐4	☐5	
F. I worry about how safe it is to reheat leftovers that have been kept in the fridge for one or two days	☐1	☐2	☐3	☐4	☐5	
G. I am good at making up meals from random ingredients that need eating up	☐1	☐2	☐3	☐4	☐5	

Profile / demographics

Q30. What is your household composition and size?	Single occupancy	☐1	Shared, non-related	☐2	number
	Family, only adults (16+)	☐3	Family with children	☐4	

Q31. Into which of the following age groups do YOU fall?	18-24 years	☐1	25-34 years	☐2	35-44 years	☐3
	45-54 years	☐4	55-64 years	☐5	65 years & older	☐6

Q32. How old are the other occupants? (write in number of occupants within each age band)	0-5 yrs		6-9 yrs		10-15 yrs		16-17 yrs	
	18-24 yrs		25-34 yrs		35-44 yrs		45-54 yrs	
	55-64 yrs		65 yrs & older					

Q33. Do you own your house or are you renting?	Owned outright	☐1	Mortgage	☐2	Other (specify)	
	Council/HA rented	☐3	Private rent	☐4		

Q34. What is the employment status and occupation of the household's <u>main earner</u>? Give full details If retired give previous job	Full time	☐1	DETAILS OF JOB
	Part time	☐2	
	Self-employed	☐3	
	Unemployed	☐4	
	Unemployed – in education	☐5	
	Unemployed - housewife	☐6	
	Long term sick / disabled	☐7	
	Retired	☐8	

Q35. What is your ethnic group?	White British	01	White Irish	02
	White other	03	Mixed-white & black Caribbean	04
	Mixed-white & black African	05	Mixed- white & Asian	06
	Mixed- other	07	Asian / Asian British- Indian	08
	Asian / Asian British- Pakistani	09	Asian / Asian British- Bangladeshi	10
	Asian / Asian British- other	11	Black/Black British- Caribbean	12
	Black/Black British- African	13	Black/Black British- other	14
	Chinese	15	Other	16

Acknowledgement of survey participation

I have taken part in a bona-fide market research interview conducted by Exodus Research and have received a letter from WRAP and my local council that provides an explanation of why this research is being carried out. The interview was carried out to my satisfaction and confirms that I am happy to participate in this research study. This survey is completely anonymous and this validation is for Exodus Research's internal quality control purposes to ensure that your views are accurately expressed and that you have consented to take part in the programme of research.

Signed or initialled:	eXodus MARKET RESEARCH
Date:	

Appendix F: Courtauld Commitment signatories

The Courtauld Commitment is a voluntary agreement between WRAP and major UK grocery organisations that supports less packaging and food waste ending up in household bins. In 2008 it led to zero growth in packaging despite increases in sales and population. The following 41 organisations are signatories to the Courtauld Commitment, as of July 2009.

- Alliance Boots
- apetito
- Asda
- Associated British Foods plc
- British Pepper & Spice
- Britvic
- Burton's Foods
- Cadbury
- Coca-Cola Enterprises
- Constellation Europe
- Dairy Crest
- Danone Waters UK & Ireland
- Duchy Originals
- Foster's EMEA
- Greencore Group UK
- H J Heinz
- Iceland
- Innocent drinks
- Kellogg's
- Marks & Spencer
- Mars UK (formerly Masterfoods)
- Molson Coors UK
- Morrisons
- Müller Dairy UK
- Musgrave (Bugdens and Londis)
- Nestlé UK
- Northern Foods
- Premier Foods
- Procter & Gamble
- Robert McBride Ltd
- Robert Wiseman Dairies
- Sainsbury's
- Stella Artois
- Tesco
- The Co-operative Group
- Uni Foods
- United Biscuits
- Waitrose
- Warburtons
- Weetabix
- Young's Seafood

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recycle