Material change for a better environment

Food waste report

The food we waste

A report of the ground-breaking study that provides, for the first time, reliable information about the nature, amount and origin of food waste produced by UK households. The purpose of the report is to assist WRAP, government, 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.

Written by: Lorrayne Ventour

Compositional food waste analysis by:

Front cover photograph: Selection of fruit and vegetables © copyright WRAP

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Key facts

What do we waste?

- UK households waste 6.7 million tonnes of food every year, around one third of the 21.7 million tonnes we purchase. Most of this food waste is currently collected by local authorities (5.9 million tonnes or 88%). Some of this will be recycled but most is still going to landfill where it is liable to create methane, a powerful greenhouse gas. The remaining 800,000 tonnes is composted by people at home, fed to animals or tipped down the sink.

- Most of the food we throw away (4.1 million tonnes or 61%) is avoidable and could have been eaten if it had been managed better. Truly unavoidable food waste, like vegetable peelings, meat carcasses and teabags, accounts for 1.3 million tonnes a year or 19% of the total, with the remainder being 'possibly avoidable' food waste – items such as bread crusts that some people choose not to eat and potato skins which can be eaten when food is prepared in certain ways but not in others.

- The type of avoidable food we waste in the largest quantity is potato; 359,000 tonnes of potato goes uneaten every year, including 177,400 tonnes of potatoes thrown away whole and untouched (49%). Other commonly wasted types of food are slices of bread (328,000 tonnes a year), apples (190,000 tonnes including 178,800 tonnes thrown away whole and untouched), and meat and fish meals (161,000 tonnes).

- The food that is bought and then thrown away uneaten in the greatest proportion is salad; in the UK 45% by weight of all purchased salad is thrown away (60% by cost). Other foods that are wasted in high proportions include bakery items (31% of that purchased is thrown away) and fruit (26% of that purchased is thrown away).

- Nearly half (46%) of the avoidable food we throw away is in a fresh, raw or minimally processed state, with an additional 27% thrown away having been cooked or prepared in some way and 20% ready to consume when purchased. Starchy foods are most commonly thrown away after being prepared, with 45,000 tonnes of rice, 33,000 tonnes of pasta and 105,000 tonnes of potato thrown away each year, suggesting people prepare too much.

- Over one quarter of the avoidable food thrown away each year (nearly 1.2 million tonnes) is thrown away still in its packaging, either opened or unopened.

- Nearly 1 million tonnes of food is thrown away whole or unopened; this is nearly one quarter of all avoidable food waste. Foods most commonly thrown away whole are individual items of fruit; 2.9 billion items are thrown away every year. Vegetables and bakery items are also routinely thrown away whole and untouched; 1.9 billion whole vegetables are thrown away each year and 1.2 million bakery items.

- Items of note that are thrown away whole and unused include:
  - Grapes (4.8 billion a year)
  - Potatoes (1.9 billion a year)
  - Apples (1.6 billion as year)
  - Slices of bread (2.6 billion a year)
  - Tomatoes (1 billion a year)

- Bread rolls (775 million a year)
- Yoghurts and yoghurt drinks (484 million a year)
- Sausages (440 million a year)
- Chocolate and sweets (259 million a year)
- Rashers of bacon (200 million)
- Meat-based meals – mainly ready meals and takeaways (120 million a year)

- At least 8% of all avoidable food waste is in date at the point of disposal. This is particularly common for drinks (49% of all drinks are thrown away in date), confectionery (27% is thrown away in date) and condiments (35% are thrown away in date).

How much does it cost us?

- Food waste is costly; the UK as a whole pays for but does not eat £10.2 billion of good food each year. That's £420 of avoidable food for the average household each year.

- The food that costs us the most because we buy it and then don't eat it is meat and fish meals. The meat and fish meals that we throw away cost UK households £602 million a year. Other costly items are slices of bread (£360 million a year), apples (£317 million a year) and potatoes (£302 million a year).

- Food thrown away whole and unopened is particularly costly at more than £2.3 billion a year for the UK as a whole. Whole and unopened fruit costs UK households £570 million while whole and unopened vegetables cost £250 million and whole and unopened bakery items cost £300 million a year.

- Food thrown away still in date costs UK households at least £950 million every year.

Who is wasting this food?

- We **all** waste food unnecessarily. On average, every one of us throws away 70kg of avoidable food a year – that's the weight of an average person.

- And we don't realise how much we throw away. Even householders who are adamant that their household wastes no food at all are throwing away 88kg of avoidable food a year; that's a typical 50l kitchen bin full.

- Larger households waste more avoidable food than smaller households; certain types of households (e.g. households with children) appear to waste more food but that is mainly because they contain more people.

- Single person households waste the most food on a per capita basis.

- Contrary to accepted wisdom, older people waste as much avoidable food as younger people (1.2kg per person per week); retired households appear to waste less but that is because they tend to be smaller.

- Households that have never composted at home waste more food than households that either currently compost or used to compost (3.3kg per week compared with 2.5 and 2.1kg per week respectively).

- Households that are committed to recycling waste slightly less food than non-committed households (3.2kg per week of avoidable food compared with 3.9kg per week).

Why do we waste food?

- The main reasons for throwing away food that could have been eaten if it had been managed better are:
  - left on the plate after a meal (1,225,700 tonnes worth £3.3 billion);
  - passed its date (808,000 tonnes worth £2.2 billion);
  - looked, smelt or tasted bad (750,500 tonnes worth £1.8 billion);
  - went mouldy (465,700 tonnes worth £960 million); and
  - left over from cooking (360,600 tonnes worth £830 million).

- Reasons are different for different types of food. For example:
  - bread:
    out of date 29%, looked bad 21%, went mouldy 20%;
  - breakfast cereals:
    73% left over after a meal;
  - cheese:
    out of date 37%, went mouldy 23%;
  - eggs:
    out of date 56%, left over 25%;
  - fresh fruit:
    mouldy 37%, looked bad 25%;
  - salads:
    out of date 48%;
  - fresh meat and fish:
    out of date 35%, left over 26%;
  - milk:
    smelt or tasted bad 38%, out of date 37%;
  - pasta:
    left over 50%;
  - rice:
    left on plate 48%, left in saucepan 44%; and
  - condiments:
    out of date 34%, left over after cooking 26%, left on plate 20%.

Contents

1 Background and methodology

1.1 Introduction

WRAP 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 England, Scotland, Wales and Northern Ireland. More information on WRAP's work can be found on www.wrap.org.uk.

The reduction and recycling of food waste produced by people in their own homes is a major strategic priority for WRAP. Activities on food waste take several forms. Since 2004 WRAP has run a home composting programme working with local authority partners to provide heavily discounted compost bins to households. At the same time an organics programme was launched to develop the composting market, initially to enable more green waste to be processed but latterly also to encourage the centralised treatment of food waste. In 2006 the Recycling and Organics Technical Advisory Team (ROTATE) programme, which provides technical support to local authorities, launched a programme of separate food waste collection trials; this is due to report in spring 2008. In parallel WRAP's Retail Programme has worked to develop the Courtauld Commitment, to which more than 30 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 had a target to reduce consumer food waste by 100,000 tonnes by April 2008[1], with further targets expected to April 2011.

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 2005, believed to be the first of its kind in the world, to quantify the nature, scale, origin and causes of post-consumer food waste.

The programme consisted of several linked elements (the reports will shortly be available on the food waste area of WRAP's website at www.wrap.org.uk/retail/food_waste/index.html):

- a qualitative and ethnographic study to investigate why people throw away food (Ipsos MORI 2006);
- a pilot study to investigate the feasibility of quantifying the nature, scale and origin of food waste through a compositional analysis technique whereby waste is collected, sorted, categorised and weighed, which resulted in an analysis protocol (M·E·L 2006);
- quantitative research, building on Ipsos MORI's qualitative work, to better understand why people throw food away (Exodus Market Research 2006 and Brook Lyndhurst 2006);
- a food waste diary to provisionally quantify the amounts and types being thrown away and also to link the reasons for disposal with the types of food disposed (Exodus Market Research 2007); and

[1] *The achievements against the target, and WRAP's targets for 2008 to 2011, will be reported in WRAP's Business Plan for 2008 to 2011 due for release in June 2008.*

- a major study to estimate in detail the nature, scale and origin of food waste through a compositional analysis technique combined with survey work on household attitudes, claimed behaviour and socio-demographics (this report).

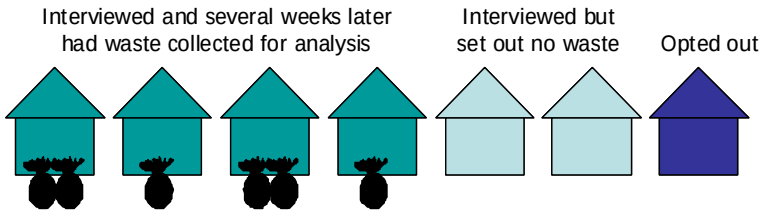
In Chapter 7 of this report, the results of the diary work on the reasons for food waste disposal are used because they provide more detail on why food is thrown away than the compositional analysis approach allows. The diary exercise took place during the week Wednesday 7 February to Tuesday 13 February 2007. For every incidence of food waste disposal, households were asked to record the type of waste, approximate amount (in terms such as 'a flat handful' or 'a cupful' for items not expressed in units), the method of disposal and the reason for disposal. A total of 284 diaries were returned and the information provided a better understanding of the types of uneaten food that was being thrown away, the circumstances for the waste and how it was dealt with by householders. A full report of the diary work is available in the food waste area of WRAP's website.

The remainder of this chapter describes the approach taken in this study, referring to the diary work as appropriate.

1.2 Research methodology

The research was designed not only to quantify the amounts and types of food waste being produced in the UK but also to make explicit links between the amounts and types of waste a household disposes and the attitudes, socio-demographics and disposal options available to that household. The study consisted of two linked elements – a survey and a physical analysis of the contents of bins.

Figure 1 Depiction of the research method



In total, 2715 householders were interviewed and several weeks later the waste from 2138 of them was collected. The study commenced in July 2007 with a phase of doorstep interviews with householders within nine local authorities in England and two local authorities in Wales. It was not possible to carry out research in Scotland during 2007 but this may take place at a later date. Northern Ireland is not currently covered by WRAP's work on food waste; however, the results have been extended to cover Northern Ireland and Scotland in order to provide a complete UK picture. There is anecdotal evidence that food consumption may vary by country of the UK; future research in Scotland and Northern Ireland should throw some light on this. In the meantime we have assumed that the nature of food waste in Scotland and Northern Ireland is the same as in England and Wales.

The local authorities were selected to cover a range of regions, types of waste receptacle, frequency of collection and the availability of separate food waste collections. The local authorities provided details of their waste collection rounds and, within each local authority, two areas were selected for the research. The selection was based on economic and social factors to ensure a statistically valid sample at the level of England and Wales combined. Table 1 gives details of the local authorities that were included in the research.

Table 1 Details of the selected local authorities

Local authority	Residual waste		Separate food waste		Home compost partner
Newcastle upon Tyne	Wheeled bin	Weekly	No; pilots but not in research area		Yes
Bradford	Wheeled bin	Weekly	No; pilots but not in research area		Yes
Manchester	Wheeled bin	Weekly	No		Yes
North Shropshire	Wheeled bin	Fortnightly alternate weeks	Yes – with garden & card in green bin	Fortnightly alternate weeks	Yes
Mendip	Wheeled bin	Weekly	Yes – in brown bin	Weekly	Yes
Northampton	Sacks	Weekly	No		Yes
Ealing	Sacks	Weekly	Yes	Weekly	Yes
Norwich	Wheeled bins OR sacks (50:50)	Weekly	No		Yes
Milton Keynes	Sacks BUT wheeled bin for 60K homes with garden waste collection & sacks	Weekly	No – available but not in research area		Yes
Rhondda Cynon Taf	Sacks or wheeled bin (if food waste available)	Weekly	Yes – in half of research area	Weekly	No
Powys	Sacks	Weekly	No		No

All householders within the selected areas (two areas for each local authority) were hand-delivered a letter that provided information about the research objectives (including the fact that their waste would be collected and taken away for analysis) and contact details in case of queries. A freephone number was set up to enable householders that did not wish to take part in the research to opt out at any time. This 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. Warning people in advance and allowing opt-outs was deemed necessary in order to avoid potential concerns from residents (e.g. regarding identity theft) and adverse media coverage. We do not believe that this has had an effect on the reliability of the results.

After a period of at least two weeks had elapsed from delivery of the letter inviting opt-outs, a team of interviewers visited the area. Households that had not opted out were interviewed on a random basis, although flats were specifically excluded as it was likely that any waste put out for collection could not be attributed to an individual property.

A total of 2715 households were interviewed. 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 interviews were conducted in England between 23 July and 10 August 2007 and in Wales between 27 September and 4 October 2007.

Details of the households that had been interviewed and provided written consent were then forwarded to the waste analysis company, WastesWork, so that the residual waste and separate food waste (if the household was provided with 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.

Figure 2 Food waste being sorted

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 13 food groups (e.g. 'meat and fish'; see Appendix A, Table A1) and assigned a food stage category (e.g. 'fresh or raw' or 'home cooked or prepared'; see Appendix A, Table A2) prior to being weighed. The information for each food item was entered onto a sort sheet (see Appendix A, Table A3) and returned to Exodus Research. The data was checked, validated and each entry was 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:

- 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. This is 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 waste 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.

Figure 3 Categorising the waste

After analysis and recording, the waste was disposed of securely and sensitively with the assistance of the local authority contractor.

The waste analysis was conducted in England between 3 September and 5 October 2007 and in Wales between 12 and 16 November 2007. A total of 2138 households' residual and food waste was analysed. This gives an overall confidence interval of ± 2.1%, so we can be 95% confident that the headline findings of this research are within 2.1% of the results that would have been obtained had everyone in England and Wales had their waste analysed.

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. If the 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 according to the weight in grammes of the food waste. Inedible parts of food such as skins, cores and bones were costed based on a percentage of the original whole-item cost. Inedible items such as teabags and coffee grinds were costed at full price. The analysis within this report focuses on the weight and costs associated with the avoidable waste, however. Information and examples of the costing process can be found in Appendix C.

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. The households were selected to provide a good cross-section of the England and Wales population to enable statistically-valid interpretation of the findings and in particular in extrapolating the data to represent a larger population.

Although respondents that were interviewed and subsequently had their waste analysed were selected on a random basis, there are several factors for which the profile of the respondents does not fully represent the national profile. The significant ones are:

- number of occupants and household composition, with smaller households being under-represented;
- employment status, with part-time, self-employed, unemployed, long-term sick and student households being under-represented;
- type of property, with flats being absent altogether for methodological reasons; and
- ethnic origin, with Asian households being over-represented.

No research study of this type could expect to represent all these factors adequately without employing complex quota-sampling systems, which in this case would have been unworkable due to the constraints imposed by working within local authority waste collection rounds.

To take account of the shortcomings of the achieved sample with respect to household composition, all calculations of food waste have been based on calculating individual estimates for different types of household and then adding the results together (see Section 1.4 below). Household composition has been deemed to be the most useful factor to use in this way because it takes account to some extent of household size, in particular the lack of flat-dwellers in the sample as these tend to be smaller, and of the over-representation of Asian households as these tend to be larger.

1.4 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. Using Office for National Statistics (ONS) census data, the number of households by composition was obtained and the average costs and weights were applied to each to obtain an estimate of waste weight and cost for each country and the UK. The household composition variable was selected because it

accounts for many of the differences observed between the sample make-up and the census (see Section 1.3 above and also Appendix D).

In 2006/07, as a separate exercise, WRAP collated and analysed more than 100 household waste compositional analysis studies to produce an estimate of the typical composition of household waste in England. These compositional studies were commissioned by Defra's Waste Implementation Programme Local Authority Support Unit and were carried out between 2005 and 2007. The results of this work showed that just over 19% of UK municipal waste, which includes household waste, is waste food. WRAP applied this percentage to official statistics on household waste from Defra, the Scottish Government, the Northern Ireland Environment and Heritage Service and the Welsh Assembly to calculate that, in 2006/07, UK local authorities collected 5.9 million tonnes of food from households as part of their mixed ('residual') waste and recycling and/or composting collections. In addition to this amount of food waste thrown away as part of the normal waste collection, it was estimated that approximately 800,000 tonnes of food waste is dealt with through home composting, feeding to pets and wild animals, sink and other sewer disposal, and also found in the 'unclassified' element of the waste composition analyses. This gives a total of approximately 6.7 million tonnes of household food waste produced in the UK.

Using data from the 2138 households that had their waste analysed, the estimated annual weight of food waste collected from UK homes, based on the model of average weight by type of household, is 5.4 million tonnes. This is an estimate of the food waste arising from the residual and separate food waste collections. The comparable figure derived from WRAP's calculations is 5.9 million tonnes. Given that this study did not cover unusual events that generate more food waste, such as Christmas and other holidays, and that the sample did not include some elements of the population (e.g. occupants living in flats), this can be considered to be exceptionally close. To maintain consistency with other WRAP data releases and minimise the effect of holiday waste, the figure of 5.9 million tonnes of food waste in the residual waste has been used as a weighting factor within this report.

1.5 This report

The remainder of the report is divided into two parts. Part One provides information on the weight and cost of wasted food including:

- UK overview (Chapter 2);
- by type of food (Chapter 3);
- by state of preparation (Chapter 4);
- focusing just on foods that are thrown away whole or unopened (Chapter 5); and
- focusing just on foods that are thrown away while still in date (Chapter 6).

Part Two looks at possible causes of food waste covering:

- reasons given for throwing away different types of food (Chapter 7);
- socio-demographics and their impact on the generation of food waste (Chapter 8); and
- household attitudes and behaviours that might be related to food waste generation (Chapter 9).

There are also Appendices which provide more detail and examples on the categorising of the food waste by group, type and state and how the food waste was costed. A copy of the questionnaire used during the interviews prior to the waste collection is also included.

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. In each case the pie chart refers to the total amount referred to within the section heading. These should be read carefully to avoid misinterpretation.

Part One: The weight and cost of food waste in the UK

2 The weight and cost of food waste in the UK: an overview

2.1 Introduction

This chapter provides information on the average financial cost and weight of the different types of food disposed of by householders in the UK, based on extrapolating the results of this study. Because no sampling was carried out in Scotland or Northern Ireland (this may be addressed at a later date), we have assumed that the England and Wales results apply equally in Scotland and Northern Ireland but it should be pointed out that this assumption is untested.

The chapter first summarises the results for all food waste, regardless of whether it could have been eaten ('avoidable') or not ('unavoidable', e.g. peelings and bones). It then moves on to look at just the avoidable food waste since that is the priority for waste minimisation and is the focus of WRAP's *Love Food Hate Waste* campaign. It should be noted that because weights have been converted from grammes to kilogrammes and then rounded and annual costs have been rounded to the nearest £10, rounding anomalies may occur.

2.2 How much food do we throw away?

2.2.1 Estimated weight of all food waste that is collected by local authorities

This section includes all food waste produced by UK households, including that which is unavoidable such as peelings, bones and cores. In this section the analysis is for food waste collected by local authorities via the residual waste and separate food waste collections only.

Table 2 Tonnes of food waste collected from households in the UK each year via residual and food waste collection

Country	Single-occupancy households	Shared households of unrelated adults	Households of related adults	Households of related adults with children	Other[2]	Total
England	908,000	288,000	1,711,000	2,027,000	0	4,934,000
Scotland[2]	106,000	63,000	138,000	195,000	15,000	517,000
Wales	52,000	15,000	103,000	123,000	0	293,000
Northern Ireland[3]	25,000	8000	47,000	77,000	0	157,000
UK	1,091,000	374,000	1,998,000	2,422,000	15,000	5,900,000

Using the average weight by household composition of all food waste arising from the compositional analysis at a household level and weighting the data up to allow for the impact of flats and waste arising from holiday seasons (see section 1.4), it can be seen in the above table that the total weight of food waste collected by local authorities via the regular collections and separate food waste collections is estimated to be 5.9 million tonnes per year. As

[2] *The census in Scotland has a pre-determined set of classifications to determine household composition. These categories include an 'other' option. For the purposes of this analysis the food waste has been taken to be equivalent to that of a single-occupancy household. Source: www.scrol.gov.uk*

[3] *Source: www.nisra.gov.uk*

would be expected, England is responsible for most of the food waste, followed by Scotland, Wales then Northern Ireland.

Local authorities use kg per household per week and per year as a means of monitoring their schemes. The equivalent figure is 240kg per household per year or 4.6kg per household per week, assuming a 52-week collection schedule. There are differences between the different types of household, as Table 3 shows.

Table 3 The average weight (kg) of food waste collected from households in the UK each year via residual and food waste collection by household composition

Type of household	Average weight (kg) of food waste collected by local authorities	
	Per year	Per week
Single-occupancy households	150	2.8
Shared households of unrelated adults	320	6.1
Households of related adults	230	4.5
Households of related adults with children	340	6.5
Other[2] (Scotland only)	150	2.8
Average England household	240	4.6
Average Scotland household	240	4.5
Average Wales household	240	4.7
Average Northern Ireland household	250	4.8
Average UK household	240	4.6

2.2.2 Estimated weight of all food waste produced and disposed via all methods of disposal

This section includes all food waste produced by UK households, including that which is unavoidable such as peelings, bones and cores. The analysis is for food 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.

Table 4 Weight of food waste (tonnes per year) produced by households in the UK (all methods of treatment and disposal)

Country	Single-occupancy households	Shared households of unrelated adults	Households of related adults	Households of related adults with children	Other[2]	Total
England	1,031,000	327,000	1,943,000	2,302,000	0	5,602,000
Scotland[2]	121,000	71,000	156,000	221,000	17,000	587,000
Wales	59,000	17,000	117,000	140,000	0	333,000
Northern Ireland	29,000	9000	53,000	87,000	0	178,000
UK	1,240,000	424,000	2,269,000	2,750,000	17,000	6,700,000

Table 4 shows that English households produce 5.6 million tonnes of food waste, those in Wales produce 0.3 million tonnes, households in Scotland produce 0.6 million tonnes and those in Northern Ireland are estimated to produce 0.2 million tonnes of food waste each year. The weight of food waste that is produced by the average household in the UK is calculated to be around 270kg per year, or 5.3kg per household per week. There are differences between the different types of household, as Table 5 shows.

Table 5 The average weight (kg) of food waste produced by households in the UK each year (all methods of treatment and disposal) by household composition

Type of household	Average weight (kg) of food waste produced	
	Per year	Per week
Single-occupancy households	170	3.2
Shared households of unrelated adults	360	6.9
Households of related adults	260	5.1
Households of related adults with children	380	7.4
Other (Scotland only)[2]	170	3.2
Average England household	270	5.3
Average Scotland household	270	5.1
Average Wales household	280	5.3
Average Northern Ireland household	280	5.5
Average UK household	270	5.3

2.3 How much money does the food waste we produce cost us?

2.3.1 Estimated cost of all food waste that is collected by local authorities

This section includes all food waste produced, including that which is unavoidable. The analysis is for food waste collected by local authorities via the residual waste and separate food waste collections only.

Table 6 Estimated cost (£ million per year) of the food waste that is collected by local authorities via residual and food waste collection

Country	Single-occupancy households	Shared households of unrelated adults	Households of related adults	Households of related adults with children	Other[2]	Total
England	£1942	£589	£3652	£4481	£0	£10,664
Scotland[2]	£228	£128	£294	£430	£32	£1112
Wales	£111	£30	£220	£272	£0	£634
Northern Ireland	£54	£17	£100	£170	£0	£340
UK	£2335	£765	£4266	£5353	£32	£12,750

Using the average cost by household composition of all food waste arising from the compositional analysis and weighting this up to allow for the impact of flats and waste arising from holiday seasons (see section 1.4), it can be seen in the above table that the total cost of food waste collected by local authorities via the regular collections and separate food waste collections is estimated to be £12.8 billion. Please see Appendix C for more details on how food waste was costed.

The cost of food waste that is put out for council collection (residual and/or separate collections) by the average household in the UK is calculated to be approximately £520 per year. There are differences between the different types of household, as Table 7 shows.

Table 7 The average cost (£) of food waste collected from households in the UK each year via residual and food waste collection by household composition

Type of household	Average cost (£) of food waste produced	
	Per year	Per week
Single-occupancy households	£320	£6.20
Shared households of unrelated adults	£650	£12.50
Households of related adults	£500	£9.60
Households of related adults with children	£740	£14.20
Other[2] (Scotland only)	£320	£6.20
Average England household	£520	£10.00
Average Scotland household	£510	£9.80
Average Wales household	£520	£10.00
Average Northern Ireland household	£540	£10.40
Average UK household	£520	£10.00

2.3.2 Estimated cost of all food waste via all methods of disposal

From previous research (see section 1.4), the cost of food waste disposed of via regular and separate food waste collections accounts for nearly 90% of all food waste (the rest is home-composted, fed to pets and put down the sink). If the cost of collected food waste is £12.8 billion, it can be estimated that the cost of all food waste thrown away throughout the UK is around £14.5 billion each year. Table 8 shows that the food we waste costs English households £12.1 billion, Welsh households £0.7 billion, Scottish households £1.3 billion and Northern Irish households £0.4 billion each year.[4]

Table 8 Estimated cost (£ million per year) of all food waste produced, regardless of treatment or disposal method

Country	Single-occupancy households	Shared households of unrelated adults	Households of related adults	Households of related adults with children	Other[2]	Total
England	£2205	£669	£4147	£5088	£0	£12,110
Scotland[2]	£258	£146	£334	£489	£36	£1263
Wales	£126	£34	£250	£309	£0	£720
Northern Ireland	£62	£19	£113	£193	£0	£387
UK	£2651	£868	£4844	£6079	£36	£14,479

The cost of food waste that is thrown away by the average household in the UK is calculated to be approximately £590 per year. There are differences between the different types of household, as Table 9 shows.

[4] *Throughout this report 1 billion = 1000 million.*

Table 9 The average cost (£) of food waste produced by households in the UK each year (all methods of treatment and disposal) by household composition

Type of household	Average cost (£) of food waste produced	
	Per year	Per week
Single-occupancy households	£360	£6.90
Shared households of unrelated adults	£730	£14.00
Households of related adults	£560	£10.80
Households of related adults with children	£840	£16.20
Other[2] (Scotland only)	£360	£6.90
Average England household	£590	£11.30
Average Scotland household	£580	£11.20
Average Wales household	£600	£11.50
Average Northern Ireland household	£620	£11.90
Average UK household	£590	£11.30

2.4 How much of the food waste we produce could have been avoided?

The following sections look only at the food waste that could have been avoided. This incorporates foods that could have been eaten if they had not been allowed to go mouldy or spoilt or if they 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 ('unavoidable food waste') and waste that some people choose not to eat such as potato or carrot peelings or bread crusts ('potentially avoidable food waste').

2.4.1 Estimated weight of avoidable food waste that is collected by local authorities

Table 10 illustrates the weight of food waste collected by local authorities either in the residual waste or through food waste collections that could have been avoided. It can be seen in the table below that the weight of avoidable food waste collected by local authorities via the regular collections and separate food waste collections is estimated to be 3.6 million tonnes. Therefore, around six tenths (60.9%) of all food waste by weight that is collected by local authorities could have been avoided.

Table 10 Tonnes of **avoidable** food waste collected from households in the UK each year via residual and food waste collection

Country	Single-occupancy households	Shared households of unrelated adults	Households of related adults	Households of related adults with children	Other[2]	Total
England	539,000	175,000	996,000	1,293,000	0	3,004,000
Scotland[2]	63,000	38,000	80,000	124,000	9000	315,000
Wales	31,000	9000	60,000	78,000	0	178,000
Northern Ireland	15,000	5000	27,000	49,000	0	96,000
UK	648,000	227,000	1,164,000	1,544,000	9000	3,593,000

The weight of avoidable food waste that is put out for council collection (residual and/or separate collections) by the average household in the UK is calculated to be around 150kg year. There are differences between the different types of household, as Table 11 shows.

Table 11 The average weight (kg) of **avoidable** food waste collected in the UK each year via residual and food waste collection by household composition

Type of household	Average weight (kg) of food waste produced	
	Per year	Per week
Single-occupancy households	90	1.7
Shared households of unrelated adults	190	3.7
Households of related adults	140	2.6
Households of related adults with children	210	4.1
Other[2] (Scotland only)	90	1.7
Average England household	150	2.8
Average Scotland household	140	2.8
Average Wales household	150	2.8
Average Northern Ireland household	150	3.0
Average UK household	150	2.8

2.4.2 Estimated weight of avoidable food waste produced by households regardless of method of treatment or disposal

Table 12 illustrates the weight of all food waste that could have been avoided, regardless of whether it is collected by the local authority or not. It has been seen in section 1.4 that the amount of food waste disposed of via regular and separate food waste collections accounts for nearly 90% of all food waste. If the collected waste is 3.6 million tonnes per year, it can be estimated that the weight of all avoidable food waste thrown away throughout the UK is around 4.1 million tonnes each year. This means that around six tenths (60.9%) of all food waste by weight could have been avoided.

Table 12 Weight of **avoidable** food waste (tonnes per year) produced by households in the UK (all methods of treatment and disposal)

Country	Single-occupancy households	Shared households of unrelated adults	Households of related adults	Households of related adults with children	Other[2]	Total
England	612,000	199,000	1,132,000	1,468,000	0	3,411,000
Scotland[2]	72,000	43,000	91,000	141,000	10,000	357,000
Wales	35,000	10,000	68,000	89,000	0	203,000
Northern Ireland	17,000	6000	31,000	56,000	0	109,000
UK	736,000	258,000	1,322,000	1,754,000	10,000	4,080,000

The above table shows that English households produce 3.4 million tonnes of avoidable food waste compared with those in Wales that produce 0.2 million tonnes, those in Scotland that produce 0.4 million tonnes and those in Northern Ireland that produce 0.1 million tonnes of avoidable food waste each year.

The weight of avoidable food waste that is thrown away by the average household in the UK is calculated to be around 170kg per year. There are differences between the different types of household, as Table 13 shows.

Table 13 The average weight (kg) of **avoidable** food waste from households in the UK each year (all methods of treatment and disposal) by household composition

Type of household	Average weight (kg) of food waste produced	
	Per year	Per week
Single-occupancy households	100	1.9
Shared households of unrelated adults	220	4.2
Households of related adults	150	3.0
Households of related adults with children	240	4.7
Other[2] (Scotland only)	100	1.9
Average England household	170	3.2
Average Scotland household	160	3.1
Average Wales household	170	3.2
Average Northern Ireland household	170	3.4
Average UK household	170	3.2

2.5 How much money does the avoidable waste we produce cost us?

2.5.1 Estimated cost of avoidable food waste that is collected by local authorities

Table 14 illustrates the cost of food waste that could have been avoided. Using the average cost by household composition of avoidable food waste, it can be seen that the cost of avoidable food waste collected by local authorities via the regular collections and separate food waste collections is estimated to be around £9 billion. This means that around seven tenths (70.3%) of all food waste by cost that is collected by councils could have been avoided.

Table 14 Estimated cost (£ million per year) of the **avoidable** food waste that is collected by local authorities via residual and food waste collection

Country	Single-occupancy households	Shared households of unrelated adults	Households of related adults	Households of related adults with children	Other[2]	Total
England	£1328	£419	£2487	£3264	£0	£7498
Scotland[2]	£156	£91	£200	£313	£22	£782
Wales	£76	£21	£150	£198	£0	£446
Northern Ireland	£37	£12	£68	£124	£0	£241
UK	£1597	£543	£2906	£3899	£22	£8967

The cost of avoidable food waste that is put out for council collection (residual and/or separate collections) by the average household in the UK is calculated to be approximately £370 per year. There are differences between the different types of household, as Table 15 shows.

Table 15 The average cost (£) of **avoidable** food waste collected from households in the UK each year via residual and food waste collection by household composition

Type of household	Average cost (£ million) of food waste produced	
	Per year	Per week
Single-occupancy households	£220	£4.20
Shared households of unrelated adults	£460	£8.80
Households of related adults	£340	£6.50
Households of related adults with children	£540	£10.40
Other[2] (Scotland only)	£220	£4.20
Average England household	£370	£7.10
Average Scotland household	£360	£6.90
Average Wales household	£370	£7.10
Average Northern Ireland household	£380	£7.30
Average UK household	£370	£7.10

2.5.2 Estimated cost of avoidable food waste via all methods of disposal

Table 16 illustrates the cost of all food waste that could have been avoided, regardless of disposal method. It has been seen in section 1.4 that the cost of food waste disposed of via regular and separate food waste collections accounts for approximately 90% of all food waste. If collected food waste costs £9 billion, it can be estimated that the cost of avoidable food waste thrown away throughout the UK is around £10.2 billion each year. This means that around seven tenths (70.3%) of the total cost of food waste could have been avoided.

The table shows that the avoidable food waste produced by English households costs £8.5 billion, that produced by households in Wales costs £0.5 billion, in Scotland it costs £0.9 billion and in Northern Ireland £0.3 billion each year.

Table 16 Estimated cost (£ million per year) of the **avoidable** food waste produced, regardless of disposal/treatment method

Country	Single-occupancy households	Shared households of unrelated adults	Households of related adults	Households of related adults with children	Other[2]	Total
England	£1508	£476	£2825	£3706	£0	£8515
Scotland[2]	£177	£104	£228	£356	£25	£889
Wales	£86	£24	£170	£225	£0	£506
Northern Ireland	£42	£13	£77	£141	£0	£273
UK	£1814	£617	£3300	£4428	£25	£10,183

The cost of avoidable food waste that is thrown away by the average household in the UK is calculated to be approximately £420 per year. There are differences between the different types of household, as Table 17 shows.

Table 17 The average cost (£) of **avoidable** food waste from households in the UK each year (all methods of treatment and disposal) by household composition

Type of household	Average cost (£) of food waste produced	
	Per year	Per week
Single-occupancy households	£250	£4.80
Shared households of unrelated adults	£520	£10.00
Households of related adults	£380	£7.30
Households of related adults with children	£610	£11.70
Other[2] (Scotland only)	£250	£4.80
Average England household	£420	£8.10
Average Scotland household	£410	£7.90
Average Wales household	£420	£8.10
Average Northern Ireland household	£440	£8.50
Average UK household	£420	£8.10

2.6 The top 100 foods thrown away

The following tables list the top 100 types of food making up avoidable food waste in terms of the estimated annual weight (Table 18) and cost (Table 19) for all UK households. 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 such as bones or items that some people choose not to eat like vegetable peelings or bread crusts. These tables include both items thrown away whole and those partially consumed.

2.6.1 Estimated weight of the top 100 items making up avoidable food waste via all methods of disposal

Table 18 Estimated weight (tonnes per year) of the top 100 items making up **avoidable** food waste produced, regardless of disposal/treatment method

	Food type	Weight in tonnes per annum	% weight of all avoidable food waste
1	Potatoes	359,000	9.7%
2	Bread slices	328,000	8.8%
3	Apples	190,000	5.1%
4	Meat or fish mixed meals	161,000	4.2%
5	World breads (e.g. naan, tortilla)	102,000	2.7%
6	Vegetable mixed meals	96,000	2.6%
7	Pasta mixed meals	87,000	2.3%
8	Bread rolls/baguettes	86,000	2.3%
9	Rice mixed meals	85,000	2.3%
10	Mixed meals	85,000	2.3%
11	Bananas	84,000	2.3%
12	Bread loaves	75,000	2.0%
13	Yoghurts/yoghurt drinks	67,000	1.8%
14	Sandwiches	63,000	1.7%
15	Cakes	62,000	1.7%
16	Lettuces	61,000	1.7%
17	Tomatoes	61,000	1.7%
18	Cabbages	56,000	1.5%
19	Cooked rice	55,000	1.5%

	Food type	Weight in tonnes per annum	% weight of all avoidable food waste
20	Mixed vegetables	53,000	1.4%
21	Oranges	51,000	1.4%
22	Carrots	46,000	1.2%
23	Onions	43,000	1.2%
24	Pears	42,000	1.1%
25	Sodas	42,000	1.1%
26	Milk	40,000	1.1%
27	Cheese	40,000	1.1%
28	Mixed salads	37,000	1.0%
29	Cooked pasta	36,000	1.0%
30	Mixed snacks	36,000	1.0%
31	Melons	35,000	0.9%
32	Coleslaw	33,000	0.9%
33	Pizzas	32,000	0.9%
34	Chicken portions	32,000	0.9%
35	Cucumbers	32,000	0.9%
36	Chocolate/sweets	31,000	0.8%
37	Sweetcorn/corn on the cob	30,000	0.8%
38	Sausages	30,000	0.8%
39	Pork portions	29,000	0.8%
40	Biscuits/crackers/crisp breads	27,000	0.7%
41	Water	27,000	0.7%
42	Beans (excluding baked beans)	26,000	0.7%
43	Grapes	22,000	0.6%
44	Ham	22,000	0.6%
45	Plums	20,000	0.6%
46	Squashes/cordials	20,000	0.5%
47	Breakfast cereals	20,000	0.5%
48	Cook-in sauces	19,000	0.5%
49	Fruit juices	19,000	0.5%
50	Eggs	19,000	0.5%
51	Fish	19,000	0.5%
52	Beef portions	18,000	0.5%
53	Dough	18,000	0.5%
54	Celery	17,000	0.5%
55	Strawberries	16,000	0.4%
56	Peppers	15,000	0.4%
57	Chicken drumsticks	15,000	0.4%
58	Flour	15,000	0.4%
59	Chicken breasts	15,000	0.4%
60	Mushrooms	15,000	0.4%
61	Broccoli	15,000	0.4%
62	Sandwich spreads	14,000	0.4%
63	Baked beans	14,000	0.4%
64	Bacon	14,000	0.4%
65	Peaches	13,000	0.4%
66	Milkshakes/milk drinks	13,000	0.4%
67	Crisps	12,000	0.3%
68	Lemons	12,000	0.3%
69	Beetroots	12,000	0.3%
70	Fruit pies/strudels/crumbles	12,000	0.3%
71	Jams	11,000	0.3%

	Food type	Weight in tonnes per annum	% weight of all avoidable food waste
72	Pheasants[5]	11,000	0.3%
73	Dips	10,000	0.3%
74	Mixed fruits	10,000	0.3%
75	Butter/margarine	10,000	0.3%
76	Herbs/spices	10,000	0.3%
77	Dessert cakes/gateaux	9000	0.2%
78	Cream	9000	0.2%
79	Pineapples	9000	0.2%
80	Crumpets	9000	0.2%
81	Pastry	9000	0.2%
82	Chicken products	9000	0.2%
83	Pet food	9000	0.2%
84	Yorkshire pudding and other batters	8000	0.2%
85	Cauliflowers	8000	0.2%
86	Uncooked pasta	8000	0.2%
87	Leeks	8000	0.2%
88	Milk puddings (custard etc)	8000	0.2%
89	Doughnuts	8000	0.2%
90	Oils	8000	0.2%
91	Mayonnaise/salad cream	7000	0.2%
92	Spring onions	6000	0.2%
93	Peas	6000	0.2%
94	Turnips/swedes	6000	0.2%
95	Parsnips	6000	0.2%
96	Burgers	6000	0.2%
97	Lamb	6000	0.2%
98	Pickles	6000	0.2%
99	Nuts	6000	0.2%
100	Mangos	6000	0.2%

2.6.2 Estimated cost of the top 100 items making up avoidable food waste via all methods of disposal

Table 19 Estimated cost (£ million per year) of the top 100 items making up **avoidable** food waste produced, regardless of disposal/treatment method

	Food type	Cost (£ million) per annum	% cost of all avoidable food waste
1	Meat or fish mixed meals	£602	5.8%
2	World breads (e.g. naan, tortilla)[6]	£389	3.8%
3	Bread slices	£360	3.5%
4	Apples	£317	3.1%
=5	Potato	£302	3.0%
=5	Mixed meals	£302	3.0%
7	Vegetable mixed meals	£272	2.7%

[5] *The pheasants found in the food waste appeared to come from hunts and will therefore be seasonal.*

[6] *Even though nearly six tenths of the weight (55.8%) and cost (57.6%) of world bread waste arises from White British households, it is possible that the slight over-sampling of Asian households (see Chapter 1) will have had some impact on the estimated weight and cost.*

	Food type	Cost (£ million) per annum	% cost of all avoidable food waste
8	Rice mixed meals	£247	2.4%
9	Cheese	£246	2.4%
10	Pasta mixed meals	£242	2.1%
11	Cakes	£194	1.9%
12	Pizzas	£170	1.7%
13	Yoghurts/yoghurt drinks	£169	1.7%
14	Mixed snacks	£159	1.6%
15	Mixed salads	£156	1.5%
16	Herbs/spices	£150	1.5%
17	Pork portions	£142	1.4%
18	Chocolate/sweets	£142	1.4%
19	Cooked rice	£142	1.4%
20	Fish	£142	1.4%
21	Bread rolls/baguettes	£135	1.3%
22	Pheasants	£128	1.3%
23	Tomatoes	£121	1.2%
24	Sandwiches	£121	1.2%
25	Chicken portions	£120	1.2%
26	Beef portions	£112	1.1%
27	Sausages	£106	1.0%
28	Bananas	£102	1.0%
29	Chicken breasts	£99	1.0%
30	Bacon	£95	0.9%
31	Ham	£92	0.9%
32	Beans (excluding baked beans)	£85	0.8%
33	Bread loaves	£84	0.8%
34	Coleslaws	£83	0.8%
35	Crisps	£82	0.8%
36	Cooked pasta	£82	0.8%
37	Biscuits/crackers/crisp breads	£77	0.8%
38	Oranges	£76	0.7%
39	Cabbages	£75	0.7%
40	Plums	£74	0.7%
41	Pears	£74	0.7%
42	Sandwich spreads	£70	0.7%
43	Melons	£70	0.7%
44	Sodas	£68	0.7%
45	Breakfast cereals	£66	0.6%
46	Cucumbers	£66	0.6%
47	Lettuces	£64	0.6%
48	Mixed vegetables	£63	0.6%
49	Strawberries	£63	0.6%
50	Peaches	£62	0.6%
51	Eggs	£59	0.6%
52	Cook-in sauces	£57	0.6%
53	Chicken drumsticks	£56	0.5%
54	Grapes	£55	0.5%
55	Peppers	£54	0.5%
56	Shellfish	£43	0.4%
57	Prawn crackers	£41	0.4%
58	Mushrooms	£41	0.4%
59	Onions	£40	0.4%

	Food type	Cost (£ million) per annum	% cost of all avoidable food waste
60	Fruit pies/strudels/crumbles	£39	0.4%
61	Sweetcorn/corn on the cob	£39	0.4%
62	Chicken products	£38	0.4%
63	Lamb	£37	0.4%
64	Dessert cakes/gateaux	£36	0.4%
65	Leeks	£36	0.4%
66	Celery	£36	0.4%
67	Dips	£35	0.3%
68	Carrots	£35	0.3%
69	Nuts	£32	0.3%
70	Spring onions	£32	0.3%
71	Coffee	£31	0.3%
72	Beef steaks	£30	0.3%
73	Broccoli	£30	0.3%
74	Milk	£29	0.3%
75	Pastry	£28	0.3%
76	Cream	£28	0.3%
77	Squashes/cordials	£27	0.3%
78	Crumpets	£26	0.3%
79	Mayonnaise/salad cream	£24	0.2%
80	Mixed fruits	£23	0.2%
81	Burgers	£22	0.2%
82	Uncooked pasta	£22	0.2%
83	Jams	£22	0.2%
84	Fruit juices	£21	0.2%
85	Pet food	£21	0.2%
86	Beef products	£21	0.2%
87	Mangos	£21	0.2%
88	Sandwich spreads (vegetable-based)	£20	0.2%
89	Butter/margarine	£20	0.2%
90	Beetroots	£19	0.2%
91	Milkshakes/milk drinks	£19	0.2%
92	Powdered soups/drinks	£19	0.2%
93	Water	£19	0.2%
94	Yorkshire puddings and other batters	£18	0.2%
95	Lemons	£18	0.2%
96	Unidentifiable meat/offal	£17	0.2%
97	Avocados	£16	0.2%
98	Turkey portions	£16	0.2%
99	Fruit loaves and fruit buns	£15	0.2%
100	Mixed food groups (e.g. carrot mixed with apple)	£15	0.2%

2.7 The amount of food wasted of that purchased

This section provides an assessment of the proportion of the cost of avoidable food that is wasted of that purchased in the UK. In May 2007, Defra published *Family Food 2005-06,* the latest in a series of annual reports on the results of the rolling Family Food and Expenditure Survey (FFES).[7] The report includes estimates of household food and drink purchases, expenditure, and energy and nutrient intakes per person in the UK in 2005-06. It also includes estimates of food and drink purchased and consumed outside the home (i.e. eating out), longer-term

[7] *http://statistics.defra.gov.uk/esg/publications/efs/datasets/default.asp*

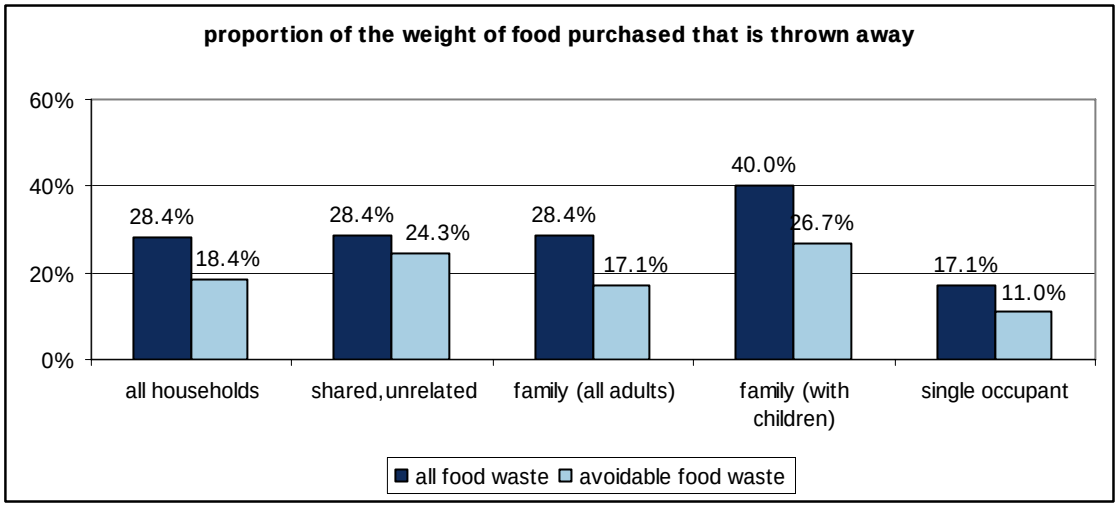
trends, regional analyses and demographic analyses. This section compares the amounts of food thrown away with the amounts purchased to provide a different perspective on the extent to which we waste food.

In order to enable a comparison to be made between the FFES food purchases data (which is presented at a grammes/pence per person level) and the food waste data (presented at a household level), the two sets of research had to be transformed into comparable units. Where possible the sub-categories of the FFES food purchases categories were assigned one of the food types used in this study (see Appendix A, Table A1). The food waste data was converted into grammes/pence per person per week to give an indicative average weight of food waste within each of the sub-categories. Due to the assumptions and estimated conversions used in this chapter, the results should be regarded as indicative of the likely scale of wastage only. In addition, drinks were removed from the analysis due to problems with comparability.

2.7.1 What proportion of the food we buy do we throw away needlessly?

In the UK we purchase 21.7 million tonnes a year of food (excluding drinks) for consumption at home at a cost of £42.4 billion. The charts below illustrate the estimated proportion of the food that is bought needlessly because the food is thrown away. This is shown for all waste and avoidable food, i.e. food (but not drinks) that could have been eaten had it been planned, stored and managed better. It includes food thrown away whole and unused as well as plate scrapings, cooked leftovers and other partially eaten items.

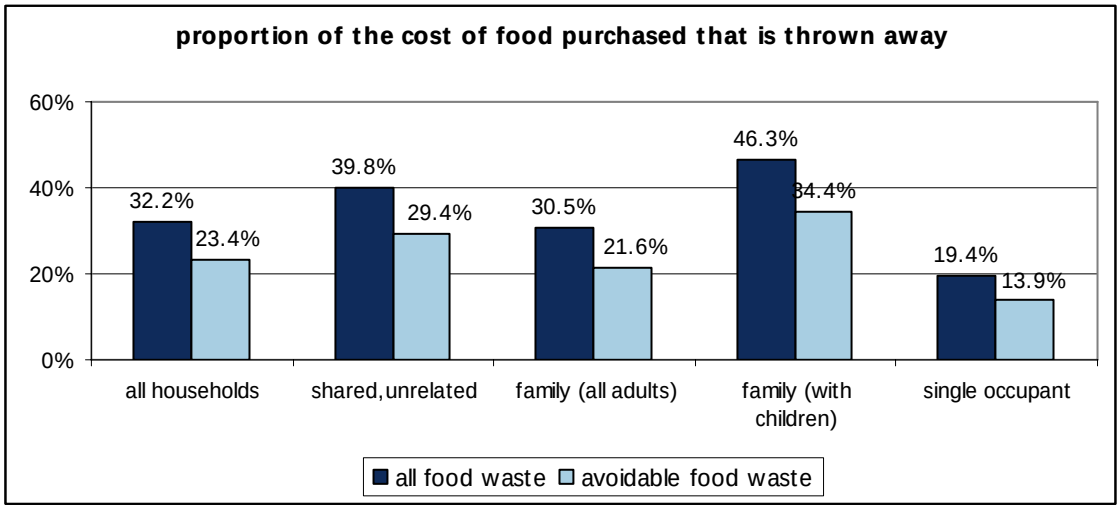
Figure 4 Estimate of the proportion of purchased food (weight) that is thrown away



Overall, households in the UK throw away 6.7 million tonnes of food waste (excluding drinks). UK households throw away nearly a fifth (18.4%) or 4.1 million tonnes a year of **avoidable** food purchased, i.e. food that could have been eaten if it had been stored or managed better.

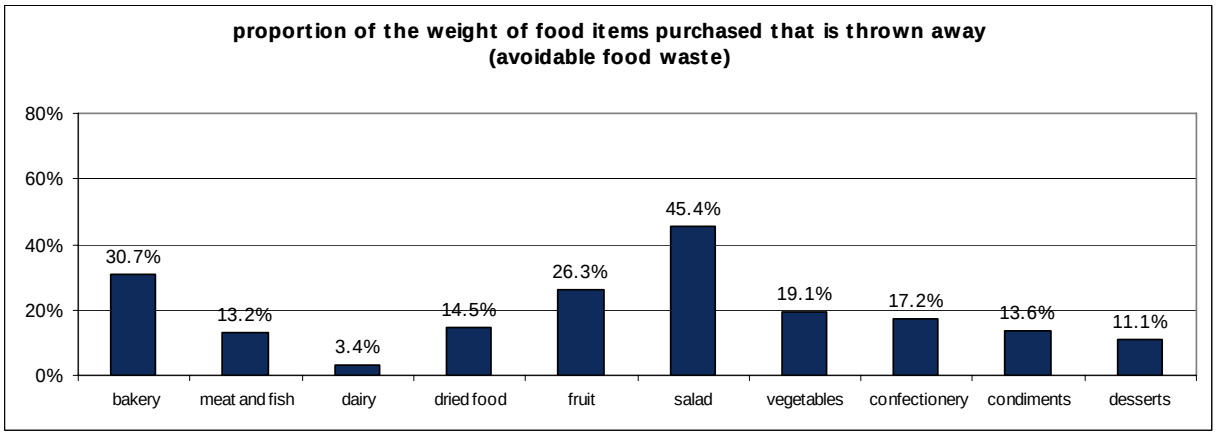
Families with children throw away the greatest proportion of purchased avoidable foods, closely followed by households comprising of unrelated individuals. Each of these households wastes around a quarter of the food that is purchased that could have been consumed if it had been better stored or managed. Single occupants throw away just over a tenth (11%) of the food bought and could have been consumed if it had been better managed or stored.

Figure 5 Estimate of the proportion of purchased food (cost) that is thrown away



Overall, households in the UK throw away £14.5 million of food waste which equates to just less than a third of all food purchased. UK households throw away nearly a quarter (23.4%) or £10.2 billion a year of **avoidable** food purchased, i.e. food that could have been eaten if it had been stored or managed better.

Figure 6 Estimate of the proportion of purchased food (weight) that is thrown away by food group

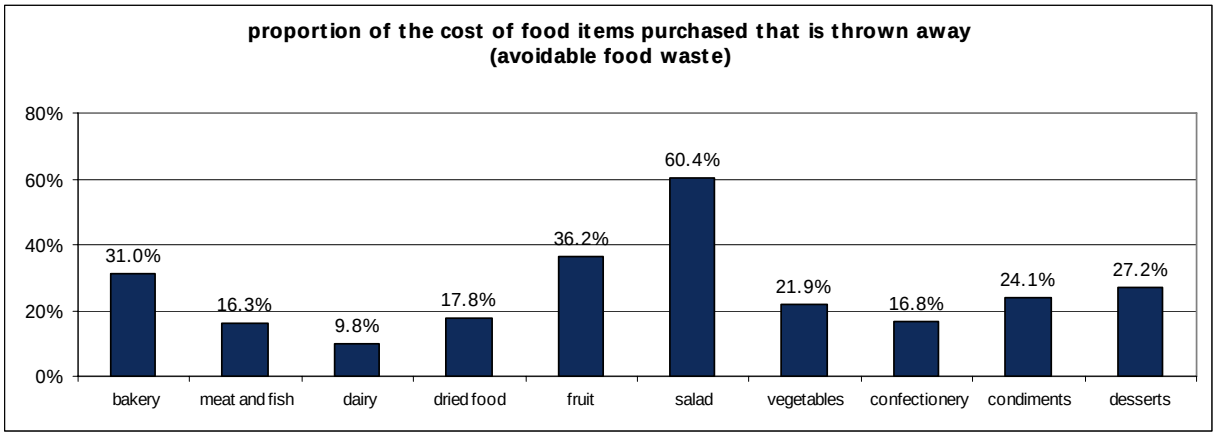


The above chart illustrates the estimated proportions of the different groups of food purchased that are thrown away when they could have been eaten if managed or stored better. Salad items are the most likely avoidable foods by weight, with more than four tenths of these items being thrown away. Three tenths of the bakery items are thrown away and more than a quarter of fruit. The table below shows the estimated weight of avoidable food waste that is thrown away each year.

Table 20 The weight of food that is purchased and then thrown away

Types of food	Kg per person per year		'000 tonnes in the UK per year		% thrown away[8]
	Amount purchased	Amount thrown away that could have been avoided	Amount purchased	Amount thrown away that could have been avoided[9]	
Bakery	56	17	2,580	790	30.7%
Meat and fish	46	6	2,150	280	13.2%
Dairy	120	4	5,500	190	3.4%
Dried food	24	3	1,110	160	14.5%
Fruit	49	13	2,220	580	26.3%
Salad	13	6	610	280	45.4%
Vegetables	86	17	4,030	770	19.1%
Confectionery	8	1	360	60	17.2%
Condiments	23	3	1,060	140	13.6%
Desserts	11	1	510	60	11.1%
All food[10]	469	86	21,700	3,990	18.4%

Figure 7 Estimate of the proportion of purchased food (cost) that is thrown away by food group



The above chart illustrates the estimated proportions of the different groups of food purchased that are thrown away when they could have been eaten if managed or stored better. Salad items are the most likely avoidable foods by cost, with six tenths of these items being thrown away. More than a third of fruit items are thrown away and nearly three tenths of bakery. The following table shows the estimated cost of avoidable food waste that is thrown away each year in the UK.

[8] *Percentages have been worked out on the unrounded data.*

[9] *The total in this column is different to the 4.1 million avoidable food waste reported elsewhere in this document. This is because drinks have been removed from the analysis to ensure comparability between the FFES data and the data in this report.*

[10] *Includes mixed foods and 'other' which could not be compared across the two datasets.*

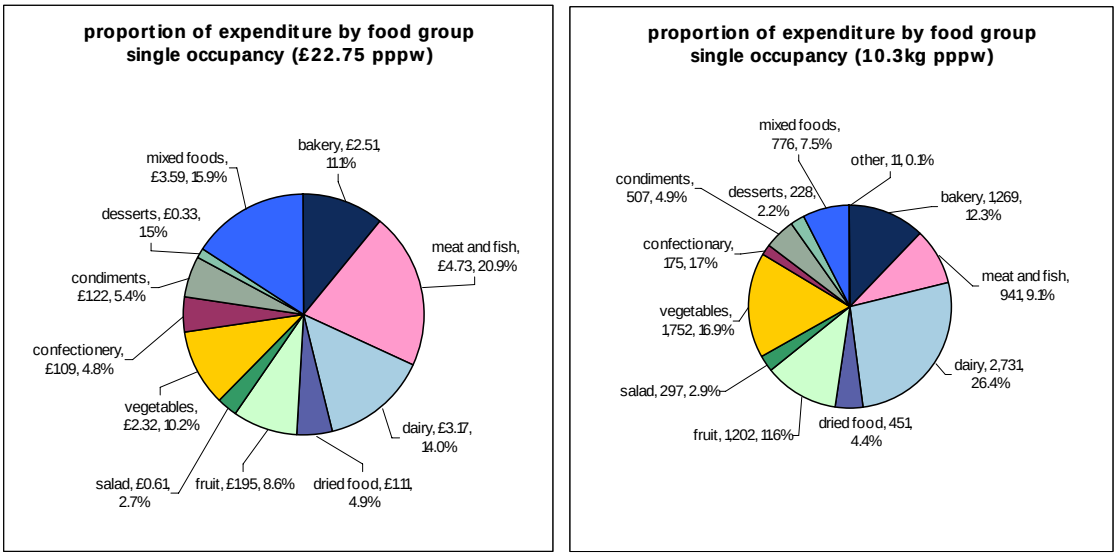
Table 21 The cost of food that is purchased and then thrown away

Types of food	£ per person per year		£ million in the UK per year		% thrown away[11]
	Amount purchased	Amount thrown away that could have been avoided	Amount purchased	Amount thrown away that could have been avoided[12]	
Bakery	£110	£30	£4,600	£1,400	31.0%
Meat and fish	£220	£40	£9,100	£1,500	16.3%
Dairy	£140	£10	£5,700	£600	9.8%
Dried food	£60	£10	£2,400	£400	17.8%
Fruit	£80	£30	£3,100	£1,100	36.2%
Salad	£20	£20	£1,000	£600	60.4%
Vegetables	£110	£20	£4,600	£1,000	21.9%
Confectionery	£50	£10	£2,000	£300	16.8%
Condiments	£50	£10	£2,300	£600	24.1%
Desserts	£20	£0	£600	£200	27.2%
All food[13]	£1,010	£240	£42,400	£9,900	23.4%

2.7.2 What proportion of food purchases do single-occupancy households throw away needlessly?

This section examines in more detail the extent to which single-occupancy households throw away the food (excluding drinks) they buy. Again when looking at the amount wasted by the different types of food, only the avoidable waste is considered and the proportions are based on weights.

Figures 8 and 9 How single-occupancy households spend their money on food (£/g per person per week)



According to the FFES, single occupants spend £22.75 per person per week (pppw) on food to be consumed at home. The above charts illustrate how this amount is spent in each food group according to the cost and the weight (kg). A fifth (20.9%) of expenditure is on meat and fish and more than a tenth on mixed foods (15.9%) and

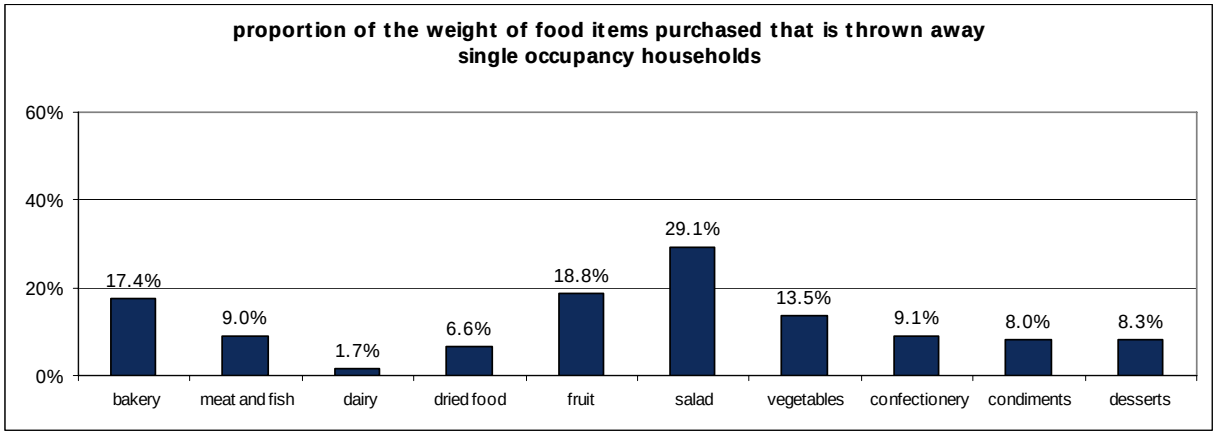
[11] *Percentages have been worked out on the unrounded data.*

[12] *The total in this column is different to the £10 billion cost of avoidable food waste reported elsewhere in this document. This is because drinks have been removed from the analysis to ensure comparability between the FFES data and the data in this report.*

[13] *Includes mixed foods and 'other' which could not be compared across the two datasets.*

dairy (14%). These occupants buy 10.3kg of food each week with dairy products making up more than a quarter of this.

Figure 10 Estimated proportion of the weight of food purchased that is wasted needlessly by food group for single-occupancy households

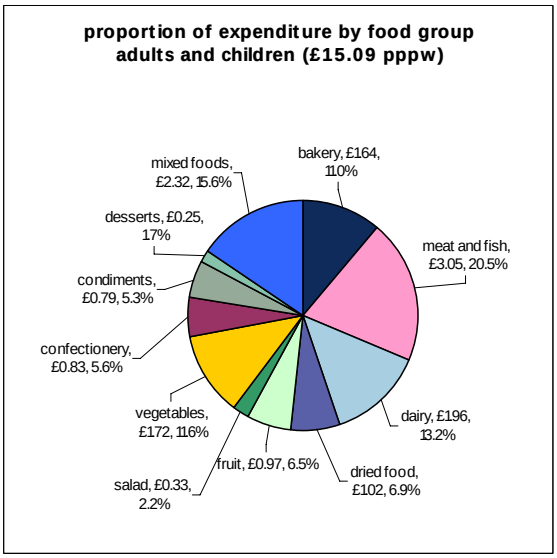


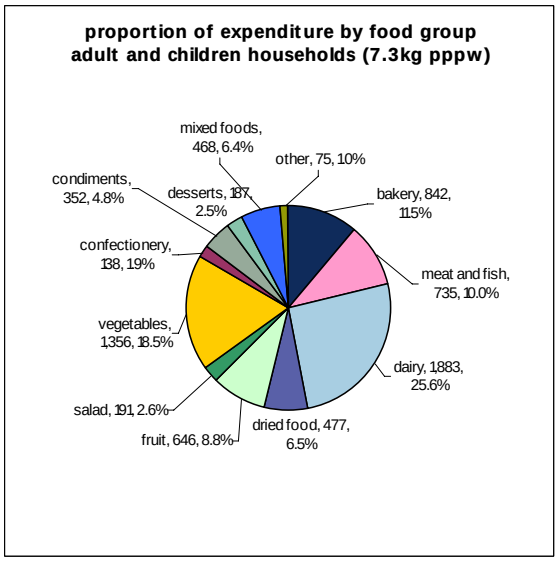
The above chart illustrates the estimated proportion of avoidable food waste within each food group against the weight of food purchased by single-occupancy households. This shows that more than a quarter of the weight of purchased salad items ends up as waste that could have been avoided. It was seen that the greatest proportion of food expenditure is on meat and fish and just less than a tenth of this becomes avoidable waste.

2.7.3 What proportion of food purchases do households of both adults and children throw away needlessly?

This section examines in more detail the extent to which households that contain both adults and children throw away the food they buy. Again when looking at the amount wasted by type, only the avoidable waste is considered. For simplicity and for consistency with the FFES data, a child has been allocated an equal share of the household's expenditure to an adult. This category of household is one of three used within the FFES and will include both unrelated and related adults and children.

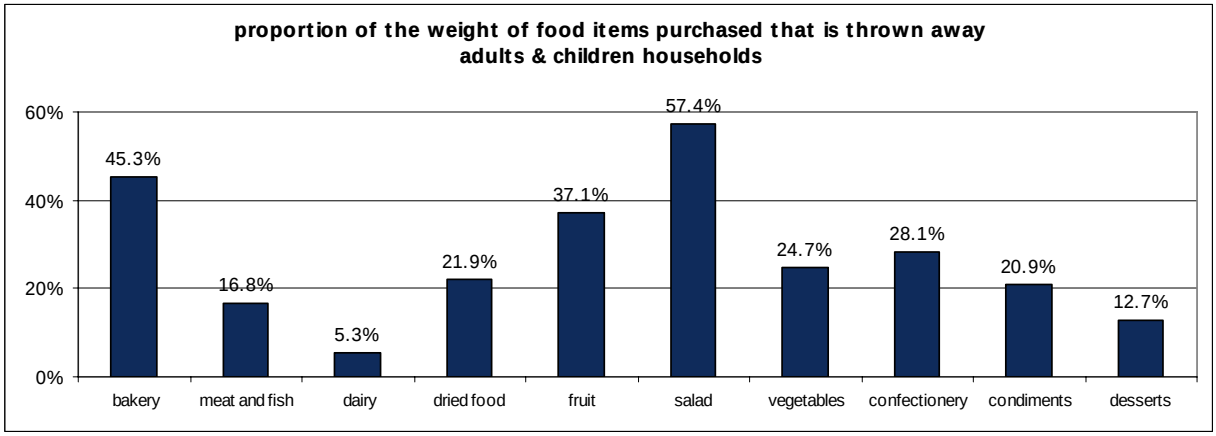
Figures 11 and 12 How households of adults and children spend their money on food (£/g per person per week)





According to the FFES, households comprising of adults and children spend £15.09 per person per week on food (excluding drinks). The above charts illustrate how this amount is spent in each food group. A fifth (20.5%) of the financial expenditure is on meat and fish and more than a tenth on mixed foods (15.6%) and dairy (13.2%). The weight of food purchased is 7.3kg per person per week and just over a quarter of this is dairy.

Figure 13 Estimated proportion of the weight of food purchased that is wasted needlessly by food group for households of adults and children

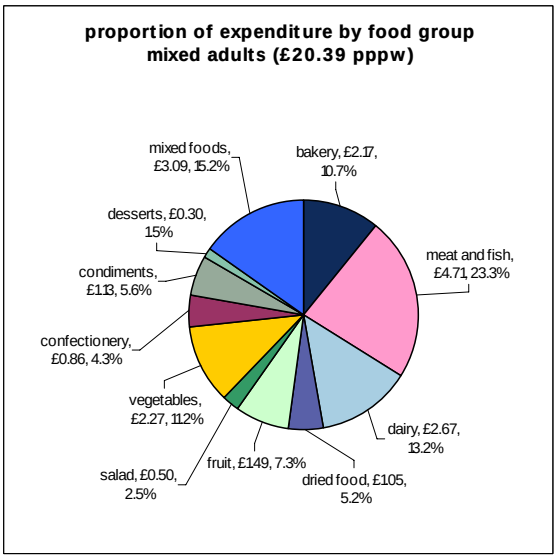


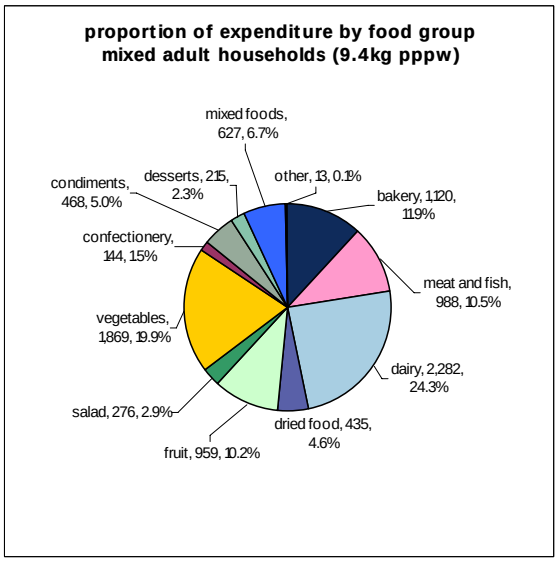
The above chart shows that households with children throw away the equivalent of nearly six tenths of all salad bought and more than four tenths of bakery items; all of this could have been avoided had the food been managed better. For households with children the greatest proportion of food expenditure is on meat and fish and nearly a fifth of this becomes waste that could have been avoided.

2.7.4 What proportion of food purchases do households of mixed adults throw away needlessly?

This section examines in more detail the extent to which households that contain mixed adults throw away the food they buy. Again when looking at the amount wasted, only the avoidable waste is considered. This category of household is one of three used within the FFES and will include both unrelated and related adults.

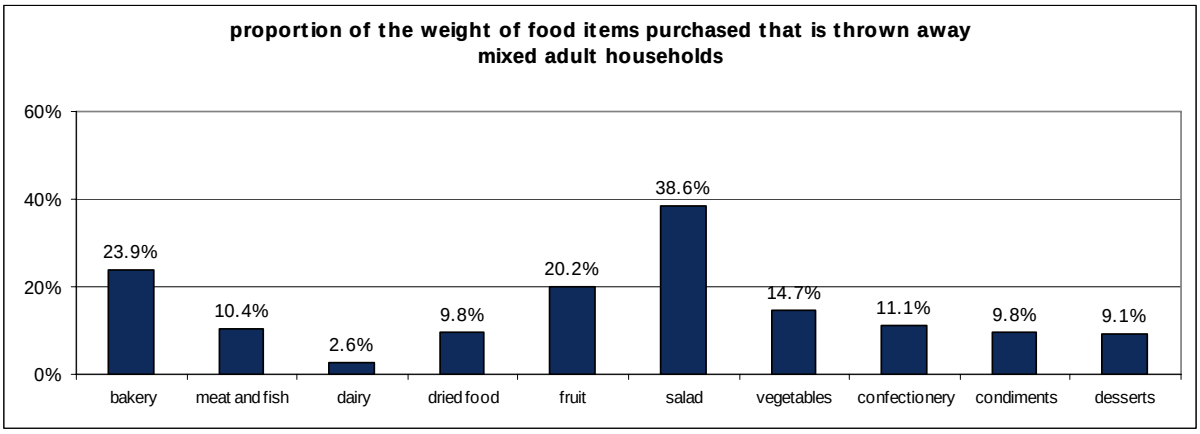
Figures 14 and 15 How households of mixed adults spend their money on food (£/g per person per week)





According to the FFES data, households comprising of mixed adults spend £20.39 per person per week on food (excluding drinks). The above charts illustrate how this amount is spent in each food group. Nearly a quarter (23.3%) of all financial expenditure is on meat and fish and more than a tenth on mixed foods (15.2%) and dairy (13.2%). The weight of the food purchased is 9.4kg per person per week and nearly a quarter (24.3%) is dairy foods and a fifth (19.9%) is vegetables.

Figure 16 Estimated proportion of the weight of food purchased that is wasted needlessly by food group for households of mixed-adults



The above chart illustrates the proportion of avoidable food waste within each food group against the expenditure by households comprising of two or more adults. This shows that nearly four tenths of the expenditure on salad items ends up as avoidable food waste. More than a quarter of the expenditure on mixed foods is thrown away. It was seen that the greatest proportion of non-drink expenditure is on meat and fish and a tenth of the expenditure on this becomes avoidable waste.

2.8 Summary of chapter

- Households within the UK dispose of 6.7 million tonnes of food each year of which around six tenths (4.1 million tonnes) could have been avoided. This equates to nearly one third (all food waste) and nearly a fifth (avoidable food waste) of the weight of all food that is purchased. Food waste that could have been avoided is food that could have been eaten if it had been stored or managed better. It does not include foods that could not have been eaten (unavoidable food waste) such as meat bones and teabags or foods that some people choose not to eat (possibly avoidable food waste) such as soft vegetable peelings or bread crusts.

- Households within the UK dispose of £14.5 billion of food each year of which around six tenths (£10.2 billion) could have been avoided. This equates to a third (all food waste) and a quarter (avoidable food waste) of the cost of all food that is purchased.

- The average household within the UK throws away around 270kg of food each year (5.3kg per household per week) of which 170kg (3.2kg per household per week) or 61% could have been avoided.

- There are differences in the amounts thrown away depending on the make-up of the household, with single-occupancy households wasting the least and households with adults and children wasting the most in total. A different picture emerges when per capita amounts are examined; this is covered in more detail in Chapter 8.

- The average household within the UK throws away £590 of food each year and £420 of this could have been avoided.

- In terms of weight the top five foods thrown away, in order, are:
  1. potatoes;
  2. bread slices;
  3. apples;
  4. meat or fish mixed meals; and
  5. world breads such as naan, ciabatta etc.

- In terms of cost the top five foods thrown away, in order, are:
  1. meat or fish mixed meals;
  2. world breads such as naan, ciabatta etc;
  3. bread slices;
  4. apples; and
  5. potato, and mixed meals (not known if meat, fish or vegetable-based).

3 The average weight and cost of food waste by food group and type

3.1 Introduction

This chapter provides information on the financial cost and weight of each broad type of wasted food (e.g. bakery). It also examines the amounts and cost of each specific type of food waste within each broad food group (e.g. loaves of bread). The food items may have been thrown away whole, partially consumed, raw or cooked. An analysis by food preparation state can be found in Chapter 4 and data regarding items thrown away whole is in Chapter 5. More information about the food groups and types can be found in Appendix A.

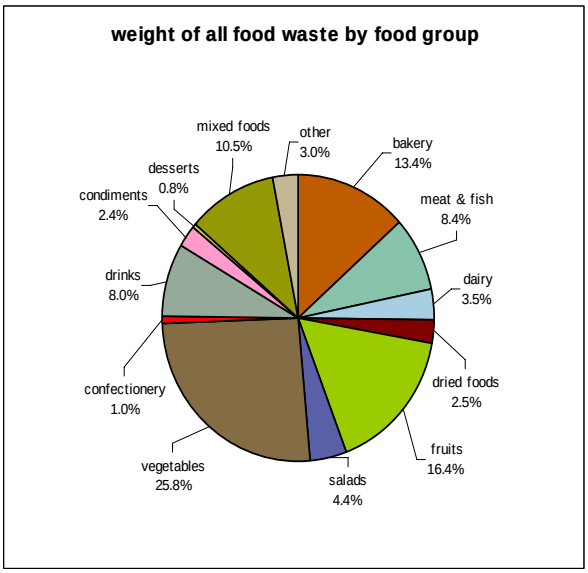
Cost and weight information is provided for all food waste including the inedible portion. It could be argued that the inedible portion should be discounted; however, although the cost of inedible food is unavoidable in most cases (you can't buy a whole apple without a core, for example), the quantity is still relevant as much of it goes to landfill. The chapter focuses, however, on avoidable food waste; that 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 and bread crusts.

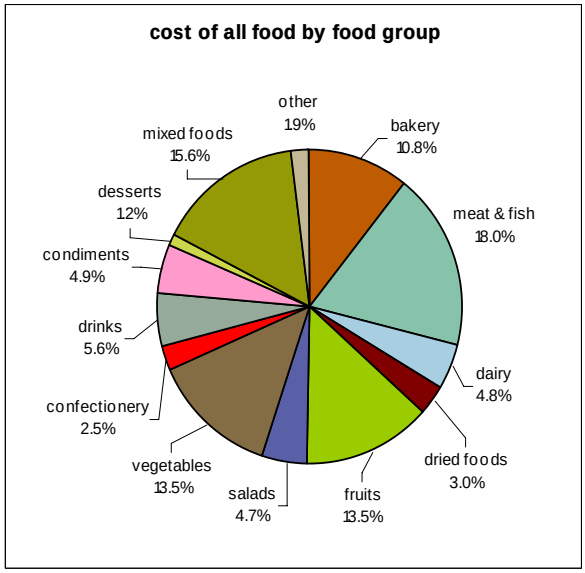
The data has been grossed up to provide an estimation of the weight and cost of food waste for all UK households each year. Information on the number of units of key food items disposed of by UK households can be found in Chapter 5. Unless otherwise indicated, weights are rounded to the nearest 100 tonnes and costs to the nearest £10 million so rounding anomalies may occur. In order to keep charts legible, labels for items making up small proportions of waste are excluded from the charts but the detailed information is provided in the corresponding tables.

3.2 What is our food waste made up of?

3.2.1 The weight and cost of all food waste

Figures 17 and 18 The food groups making up all food waste (avoidable, possibly avoidable and unavoidable)

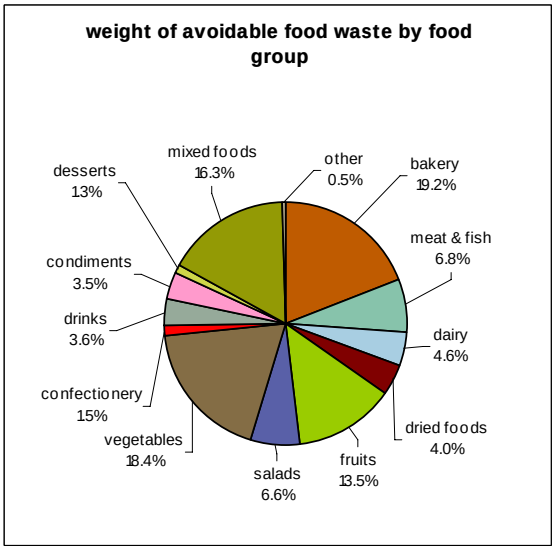


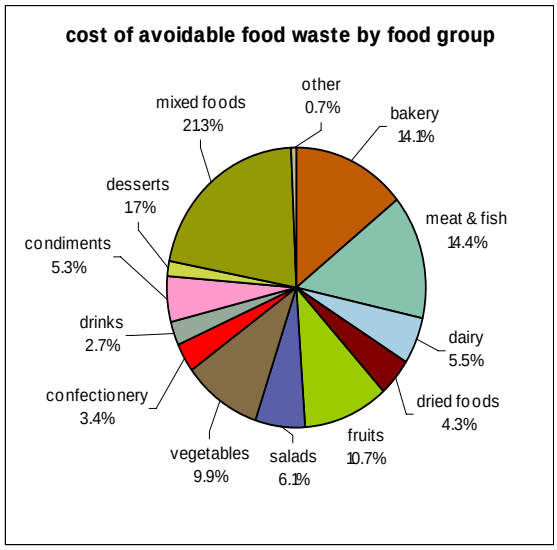


The above charts illustrate that of all food waste arising, more than a quarter (25.8%) by weight is made up of vegetables and just under a fifth (16.4%) consists of fruits. In terms of cost, nearly a fifth (18%) of all food waste is attributable to meat and fish and a slightly smaller proportion (15.6%) consists of mixed foods or meals such as pizza, shepherd's pie or lasagne.

3.2.2 The weight and cost of avoidable food waste

Figures 19 and 20 The food groups making up avoidable food waste





The above charts illustrate that of the avoidable food waste generated, a fifth (19.2%) by weight is made up of bakery food items and slightly less (18.4%) consists of vegetables. In terms of cost, more than a fifth (21.3%) of avoidable food waste is attributable to mixed foods or meals such as pizza, shepherd's pie or lasagne.

3.2.3 The proportion and tonnage of all food waste

Table 22 The proportion of all food waste and avoidable food waste made up of different food groups

Food group	All food waste		Avoidable food waste	
	% weight	% cost	% weight	% cost
Bakery	13.4%	10.8%	19.2%	14.1%
Vegetables	25.8%	13.5%	18.4%	9.9%
Mixed foods	10.5%	15.6%	16.3%	21.3%
Fruit	16.4%	13.5%	13.5%	10.7%
Meat and fish	8.4%	18.0%	6.8%	14.4%
Salad	4.4%	4.7%	6.6%	6.1%
Dairy	3.5%	4.8%	4.6%	5.5%
Dried food	2.5%	3.0%	4.0%	4.3%
Drinks	8.0%	5.6%	3.6%	2.7%
Condiments	2.4%	4.9%	3.5%	5.3%
Confectionery	1.0%	2.5%	1.5%	3.4%
Desserts	0.8%	1.2%	1.3%	1.7%
Other	3.0%	1.9%	0.5%	0.7%
Total	100.0%	100.0%	100.0%	100.0%
Fresh vegetables and salad	*27.8%*	*16.3%*	*21.1%*	*13.3%*
Fresh vegetables	*24.1%*	*12.5%*	*15.7%*	*8.5%*
Fresh fruit	*16.3%*	*13.4%*	*13.3%*	*10.5%*
Fresh salad	*3.7%*	*3.8%*	*5.4%*	*4.8%*

The above table provides data regarding the proportion of all food waste and avoidable food waste generated and how it is proportioned across the key food groups in terms of weight and cost. It should be noted that four additional food groups involving fresh food items (not processed) were also analysed to meet WRAP's requirements and these four groups appear in italics at the bottom of the table.

Table 23 The tonnage (to the nearest 1000 tonnes) of all food waste and avoidable food waste made up of different food groups

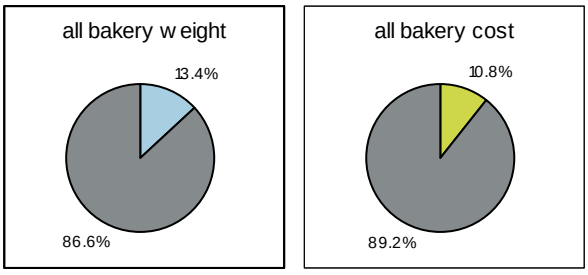
Food group	All food waste		Avoidable food waste	
	weight (tonnes pa)	cost (£ million pa)	weight (tonnes pa)	cost (£ million pa)
Bakery	897,000	£1560	782,000	£1430
Vegetables	1,730,000	£1950	753,000	£1000
Mixed foods	705,000	£2250	666,000	£2170
Fruit	1,100,000	£1960	551,000	£1090
Meat and fish	560,000	£2610	279,000	£1470
Salad	297,000	£690	271,000	£620
Dairy	234,000	£700	187,000	£560
Dried food	166,000	£440	165,000	£440
Drinks	536,000	£810	148,000	£280
Condiments	158,000	£710	142,000	£540
Confectionery	65,000	£370	63,000	£350
Desserts	54,000	£170	54,000	£170
Other	198,000	£270	18,000	£70
Total	6,700,000	£14,480	4,080,000	£10,180
Fresh vegetables and salad	*1,864,000*	*£2370*	*861,000*	*£1360*
Fresh vegetables	*1,617,000*	*£1810*	*641,000*	*£870*
Fresh fruit	*1,093,000*	*£1940*	*544,000*	*£1070*
Fresh salad	*246,000*	*£560*	*220,000*	*£490*

The above table provides data regarding the tonnage and cost per year of all food waste and avoidable food waste generated within each food group.

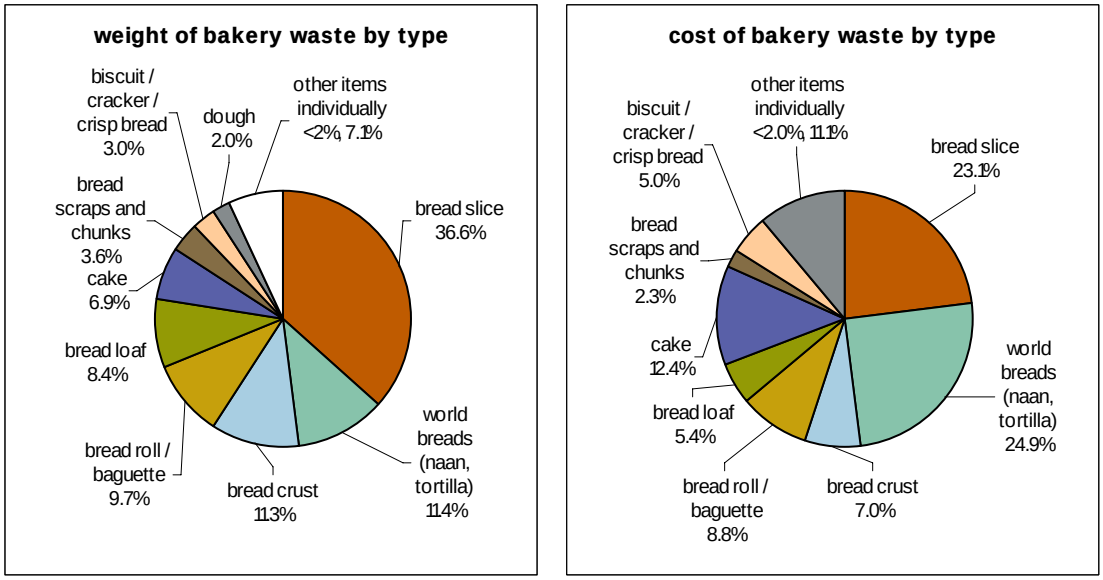
3.3 What types of bakery waste are we producing?

3.3.1 The weight and cost of all bakery waste

Bakery waste accounts for 13.4% of the weight and 10.8% of the cost of all food waste (avoidable, potentially avoidable and unavoidable).



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



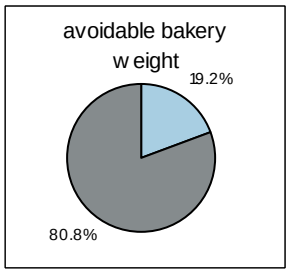
The above charts illustrate that of all the bakery food waste arising, more than a third (36.6%) by weight is made up of bread slices and just over a tenth is world breads (11.4%) and bread crusts (11.3%). In terms of cost, a quarter (24.9%) of bakery waste is attributable to world breads and a similar proportion (23.1%) consists of bread slices. Bakery items that make up less than 2% of all bakery waste are not labelled on the charts. However, the table below gives the proportions, annual tonnage and cost of each food type making up all bakery waste.

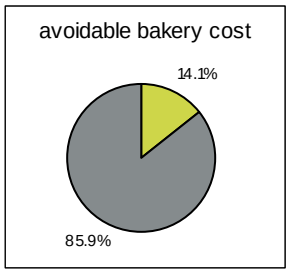
Table 24 The proportion and annual tonnage of all bakery waste

Bakery type	Weight of all bakery waste	Cost of all bakery waste	Weight (tonnes pa)	Cost (£ million pa)
All bakery waste	100% (13.4% of all food waste)	100% (10.8% of all food waste)	897,000	£1560
Bread slices	36.6%	23.1%	328,000	£360
World breads (naan, tortilla etc)	11.4%	24.9%	102,000	£390
Bread crusts	11.3%	7.0%	101,300	£110
Bread rolls/baguettes	9.7%	8.8%	87,200	£140
Bread loaves (whole or part)	8.4%	5.4%	75,300	£80
Cakes	6.9%	12.4%	61,600	£190
Bread scraps and chunks	3.6%	2.3%	32,200	£40
Biscuits/crackers/crisp breads	3.0%	5.0%	27,300	£80
Dough	2.0%	0.8%	17,900	£10
Crumpets	1.0%	1.7%	8900	£30
Pastry	1.0%	1.8%	8900	£30
Yorkshire puddings/batters	0.9%	1.2%	8300	£20
Doughnuts	0.9%	0.9%	7900	£10
Fruit loaves and fruit buns	0.6%	1.0%	5600	£20
Scones	0.5%	0.4%	4300	£10
Garlic bread	0.4%	0.6%	3700	£10
Other bakery	0.4%	0.5%	3700	£10
Bagels	0.3%	0.5%	2500	£10
Hot cross buns	0.2%	0.2%	1600	<£10
Potato cakes	0.2%	0.2%	1500	<£10
Croissants	0.2%	0.2%	1400	<£10
Malt loaf	0.1%	0.2%	1200	<£10
Pie crusts and remains	0.1%	0.3%	900	<£10
Dumplings	0.1%	0.1%	900	<£10
Danish pastries	0.1%	0.2%	800	<£10
Brioche	0.1%	0.1%	500	<£10
Scotch pancakes	0.1%	<0.1%	500	<£10
Waffles	<0.1%	0.1%	300	<£10
Breadsticks	<0.1%	<0.1%	300	<£10

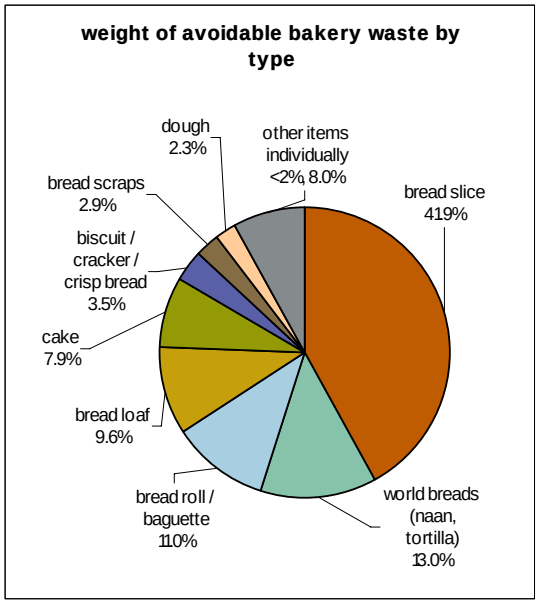
3.3.2 The weight and cost of avoidable bakery waste

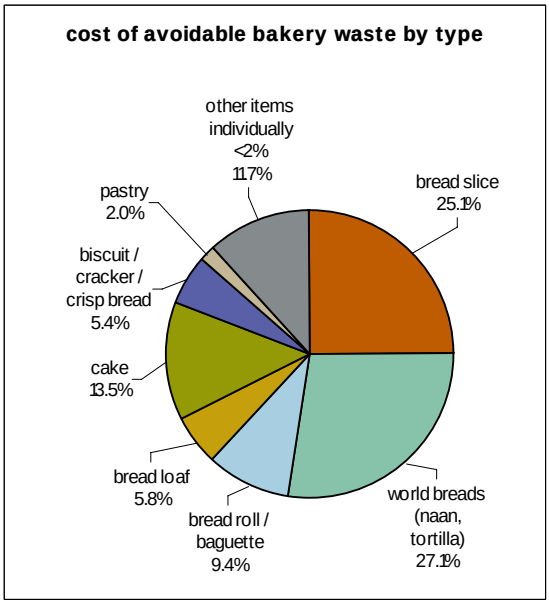
Bakery waste accounts for 19.2% of the weight and 14.1% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).





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





The above charts illustrate that of the avoidable bakery waste generated, four tenths (41.9%) of the weight is made up of bread slices. More than a tenth (13%) is made up of world breads. In terms of cost, more than a quarter (27.1%) of avoidable food waste is attributable to world breads and a quarter (25.1%) to bread slices. Bakery items accounting for less than 2% of avoidable bakery waste are not labelled on the charts. However, the table below gives the proportions, annual tonnage and cost of each food type making up avoidable bakery waste.

Table 25 The proportion and annual tonnage of avoidable bakery waste

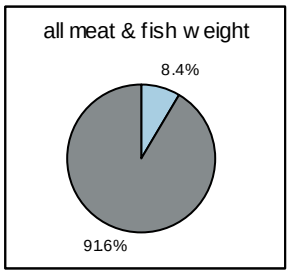
Bakery type	Weight of avoidable bakery waste	Cost of avoidable bakery waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable bakery waste	100% (19.2% of avoidable food waste)	100% (14.1% of avoidable food waste)	782,400	£1430
Bread slices	41.9%	25.1%	327,900	£360
World breads (naan, tortilla etc)	13.0%	27.1%	101,800	£390
Bread rolls/baguettes	11.0%	9.4%	85,800	£130
Bread loaves (whole or part)	9.6%	5.8%	75,200	£80
Cakes	7.9%	13.5%	61,500	£190
Biscuits/crackers/crisp breads	3.5%	5.4%	27,300	£80
Dough	2.3%	0.9%	17,800	£10
Crumpets	1.1%	1.8%	8900	£30
Pastry	1.1%	2.0%	8900	£30
Yorkshire puddings/batters	1.1%	1.3%	8300	£20
Doughnuts	1.0%	1.0%	7900	£10
Fruit loaves and fruit buns	0.7%	1.1%	5300	£20
Scones	0.6%	0.5%	4300	£10
Other bakery	0.5%	0.6%	3700	£10
Garlic bread	0.4%	0.5%	3200	£10
Bagels	0.3%	0.5%	2500	£10
Hot cross buns	0.2%	0.2%	1600	<£10
Potato cakes	0.2%	0.2%	1500	<£10
Croissants	0.2%	0.3%	1400	<£10
Malt loaves	0.2%	0.2%	1200	<£10

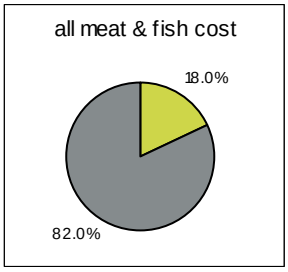
Bakery type	Weight of avoidable bakery waste	Cost of avoidable bakery waste	Weight (tonnes pa)	Cost (£ million pa)
Dumplings	0.1%	0.2%	900	<£10
Danish pastries	0.1%	0.2%	800	<£10
Brioche	0.1%	0.1%	500	<£10
Scotch pancakes	0.1%	<0.1%	500	<£10
Waffles	<0.1%	0.1%	300	<£10
Breadsticks	<0.1%	<0.1%	200	<£10

3.4 What types of meat and fish waste are we producing?

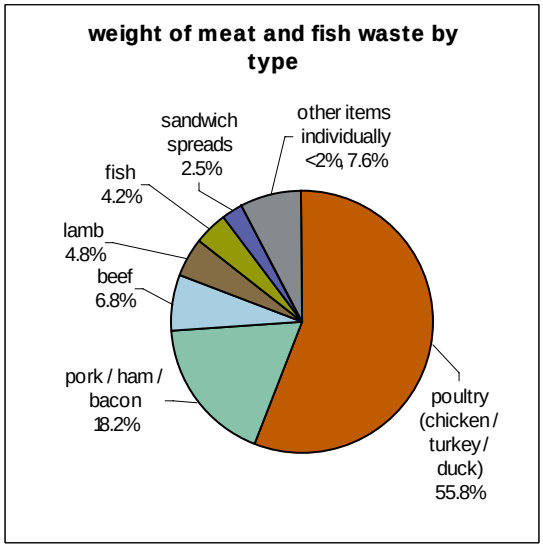
3.4.1 The weight and cost of all meat and fish waste

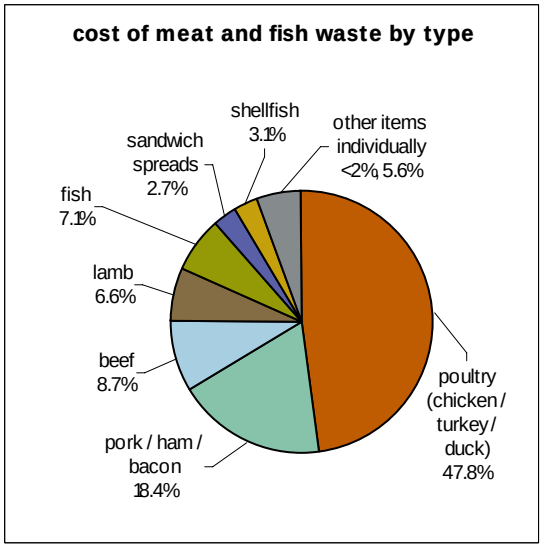
Meat and fish waste accounts for 8.4% of the weight and 18% of the cost of all food waste (avoidable, potentially avoidable and unavoidable).





Figures 25 and 26 How different types of food make up all meat and fish waste





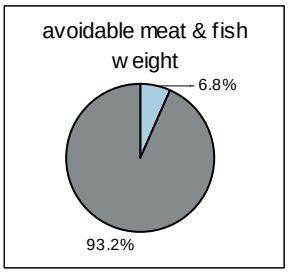
The above charts illustrate that of all the meat and fish food waste arising, more than half (55.8%) by weight is made up of poultry and nearly a fifth (18.2%) is pork, ham or bacon. In terms of cost, just less than a half (47.8%) of meat and fish waste is attributable to poultry and less than a fifth (18.4%) to pork, ham or bacon. Meat and fish items that make up less than 2% of all meat and fish waste are not labelled on the charts. However, the table below gives the proportions, annual tonnage and cost of each food type making up all meat and fish waste.

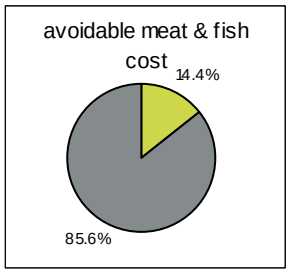
Table 26 The proportion and annual tonnage of all meat and fish waste

Meat and fish type	Weight of all meat and fish waste	Cost of all meat and fish waste	Weight (tonnes pa)	Cost (£ million pa)
All meat and fish waste	100% (8.4% of all food waste)	100% (18% of all food waste)	560,100	£2610
Poultry (chicken/turkey/duck)	55.8%	47.8%	312,400	£1250
Pork/ham/bacon	18.2%	18.4%	102,200	£480
Beef	6.8%	8.7%	37,800	£230
Lamb	4.8%	6.6%	27,100	£170
Fish	4.2%	7.1%	23,800	£180
Sandwich spreads	2.5%	2.7%	14,300	£70
Unidentifiable meat/offal	1.6%	1.4%	9100	£40
Shellfish	1.5%	3.1%	8700	£80
Unidentifiable/mixed bones	1.4%	1.2%	7900	£30
Burgers	1.1%	0.8%	6300	£20
Minced meat	0.7%	0.6%	3700	£10
Meatballs	0.3%	0.4%	1700	£10
Hotdogs/frankfurters	0.3%	0.2%	1500	<£10
Cured meats	0.3%	0.3%	1400	£10
Other meat and fish	0.2%	0.3%	1300	£10
Black pudding	0.2%	0.3%	1100	£10

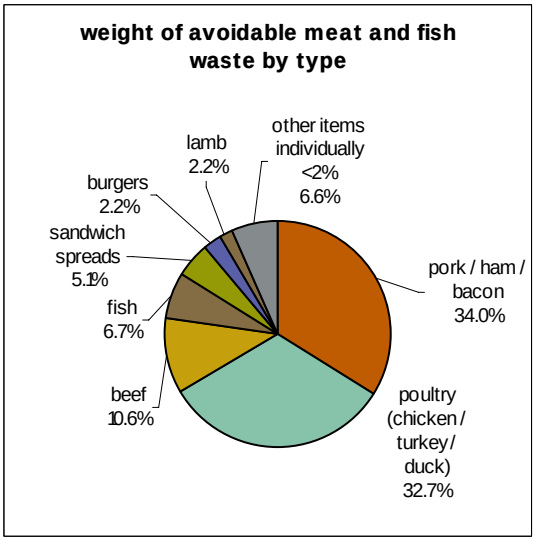
3.4.2 The weight and cost of avoidable meat and fish waste

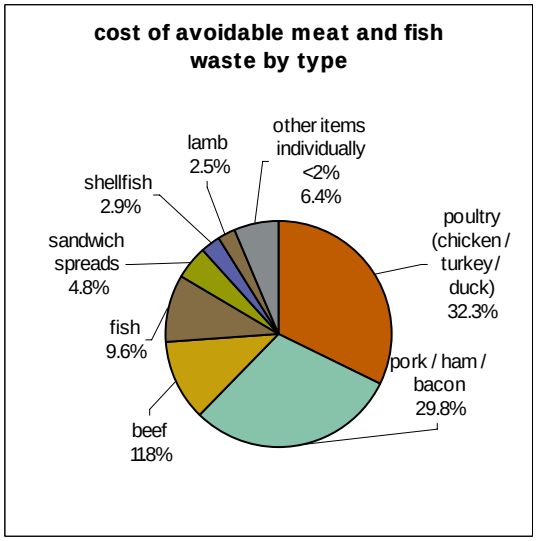
Meat and fish waste accounts for 6.8% of the weight and 14.4% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 27 and 28 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, just over a third (34%) by weight is made up of pork, ham and bacon and a similar proportion (32.7%) is poultry food items. In terms of

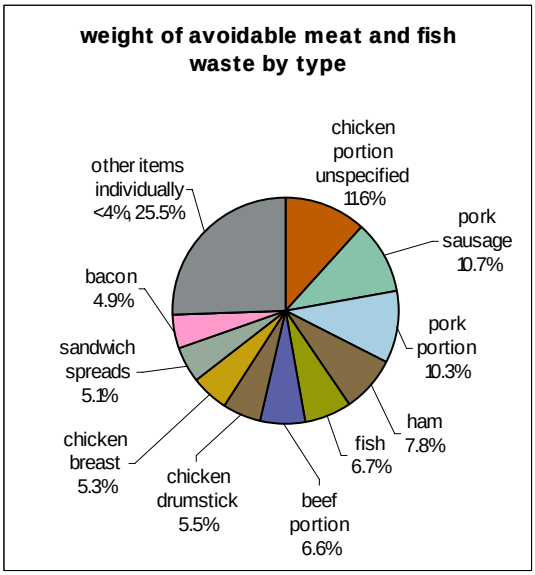
cost, a third (32.3%) of avoidable meat and fish waste is attributable to poultry and three tenths (29.8%) to pork, ham and bacon. Meat and fish items accounting for less than 2% of avoidable meat and fish waste are not labelled on the charts. However, the following table gives the proportions, annual tonnage and cost of each food type making up avoidable meat and fish waste.

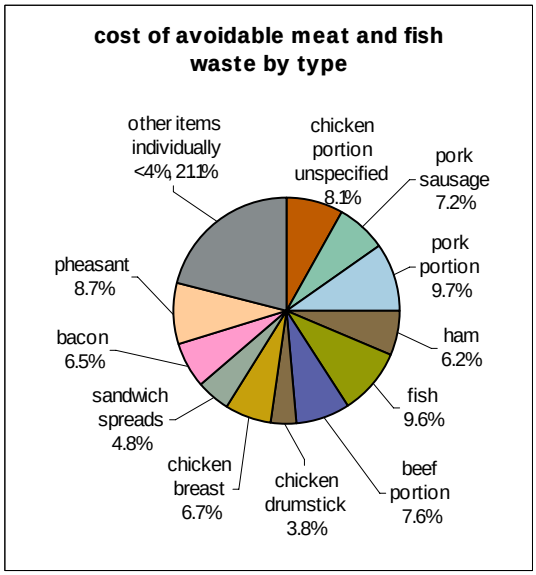
Table 27 The proportion and annual tonnage of avoidable meat and fish waste

Meat and fish type	Weight of avoidable meat and fish waste	Cost of avoidable meat and fish waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable meat and fish waste	100% (6.8% of avoidable food waste)	100% (14.4% of avoidable food waste)	278,800	£1470
Pork/ham/bacon	34.0%	29.8%	94,700	£440
Poultry (chicken/turkey/duck)	32.7%	32.3%	91,200	£480
Beef	10.6%	11.8%	29,500	£170
Fish	6.7%	9.6%	18,600	£140
Sandwich spreads	5.1%	4.8%	14,300	£70
Burgers	2.2%	1.5%	6200	£20
Lamb	2.2%	2.5%	6000	£40
Shellfish	1.5%	2.9%	4200	£40
Minced meat	1.3%	1.0%	3700	£10
Meatballs	0.6%	0.8%	1700	£10
Hotdogs/frankfurters	0.5%	0.3%	1500	<£10
Cured meats	0.5%	0.6%	1400	£10
Other meat and fish	0.5%	0.5%	1300	£10
Black pudding	0.4%	0.6%	1100	£10

3.4.3 The weight and cost of avoidable meat and fish waste detailed

Figures 29 and 30 How different types of food make up avoidable meat and fish waste





The above charts illustrate the proportion of the weight and cost of the different types of avoidable meat and fish waste. More than a tenth of the weight of meat and fish waste is made up of unspecified chicken portions (11.6%), pork sausages (10.7%) and portions of pork (10.3%). In terms of cost, nearly a tenth of the meat and fish waste consists of portions of pork (9.7%) and fish (9.6%). Meat and fish items accounting for less than 4% of avoidable meat and fish waste are not labelled on the charts. However, the table below gives the proportions, annual tonnage and cost of each food type making up avoidable meat and fish waste.

Table 28 The proportion and annual tonnage of avoidable meat and fish waste

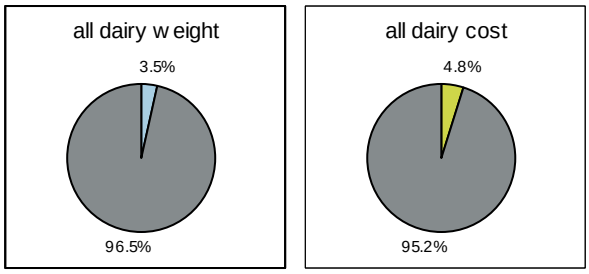
Meat and fish type	Weight of avoidable meat and fish waste	Cost of avoidable meat and fish waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable meat and fish waste	100% (6.8% of avoidable food waste)	100% (14.4% of avoidable food waste)	278,800	£1470
Chicken portions[14]	11.6%	8.1%	32,400	£120
Sausages	10.7%	7.2%	29,800	£110
Pork portions	10.3%	9.7%	28,800	£140
Ham	7.8%	6.2%	21,800	£90
Fish	6.7%	9.6%	18,600	£140
Beef portions	6.6%	7.6%	18,400	£110
Chicken drumsticks	5.5%	3.8%	15,300	£60
Chicken breast	5.3%	6.7%	14,900	£100
Sandwich spreads	5.1%	4.8%	14,300	£70
Bacon	4.9%	6.5%	13,600	£100
Pheasant	3.8%	8.7%	10,700	£130
Chicken products[15]	3.2%	2.6%	8800	£40
Burgers	2.2%	1.5%	6200	£20
Lamb	2.2%	2.5%	6000	£40
Beef products	1.8%	1.4%	4900	£20
Shellfish	1.5%	2.9%	4200	£40
Chicken whole	1.5%	1.0%	4100	£10
Minced meat	1.3%	1.0%	3700	£10
Beef steaks	1.2%	2.0%	3300	£30
Turkey portions	1.1%	1.1%	3200	£20
Beef mince	1.0%	0.7%	2900	£10
Meatballs	0.6%	0.8%	1700	£10
Duck (whole)	0.5%	0.3%	1500	<£10
Hotdogs/frankfurters	0.5%	0.3%	1500	<£10
Cured meats	0.5%	0.6%	1400	£10
Other meat and fish	0.5%	0.5%	1300	£10
Black puddings	0.4%	0.6%	1100	£10
Pork products	0.3%	0.2%	700	<£10
Poultry non-specified	<0.1%	<0.1%	100	<£10
Duck portions	<0.1%	<0.1%	<100	<£10

[14] *The type of portion was not given in the description of food waste during the food sorting.*

[15] *Chicken products are items such as chicken nuggets and chicken dippers.*

3.5 What types of dairy waste are we producing?

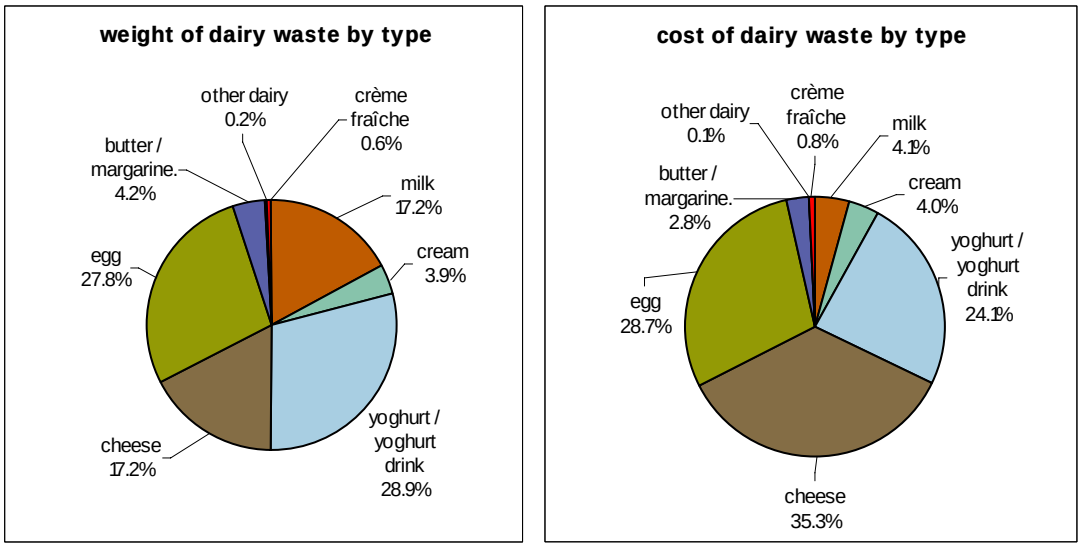
3.5.1 The weight and cost of all dairy waste



Dairy waste accounts for 3.5% of the weight and 4.8% of the cost of all food waste (avoidable, potentially avoidable and unavoidable). It should be noted that only milk that was thrown out in a container could be recorded in this project so the figures given below will underestimate the total amount of milk disposed.

Because it is recognised that a good deal of milk will be disposed of via the sink, WRAP has commissioned another project which will quantify the types and amounts of all liquids, including milk, disposed of via the sink, toilet or drain.

Figures 31 and 32 How different types of food make up all dairy waste



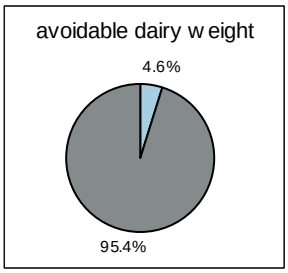
The above charts illustrate that of all the dairy waste arising, nearly three tenths (28.9%) by weight is made up of yoghurts and yoghurt drinks and a similar proportion (27.8%) is egg waste. In terms of cost, more than a third (35.3%) of dairy waste is attributable to cheese and nearly a third (28.7%) to eggs. The table below gives the proportions, annual tonnage and cost of each food type making up all dairy waste.

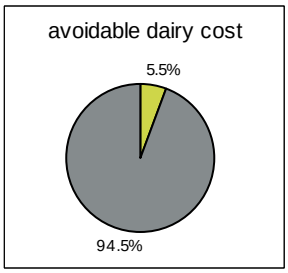
Table 29 The proportion and annual tonnage of all dairy waste

Dairy type	Weight of all dairy waste	Cost of all dairy waste	Weight (tonnes pa)	Cost (£ million pa)
All dairy waste	100% (3.5% of all food waste)	100% (4.8 % of all food waste)	233,600	£700
Yoghurts/yoghurt drinks	28.9%	24.1%	67,400	£170
Eggs	27.8%	28.7%	64,800	£200
Milk	17.2%	4.1%	40,300	£30
Cheese	17.2%	35.3%	40,200	£250
Butter/margarine	4.2%	2.8%	9900	£20
Cream	3.9%	4.0%	9100	£30
Crème fraîche	0.6%	0.8%	1500	£10
Other dairy	0.2%	0.1%	400	<£10

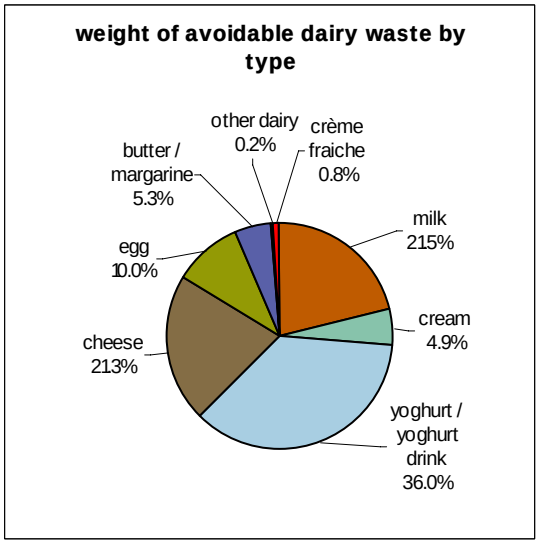
3.5.2 *The weight and cost of avoidable dairy waste*

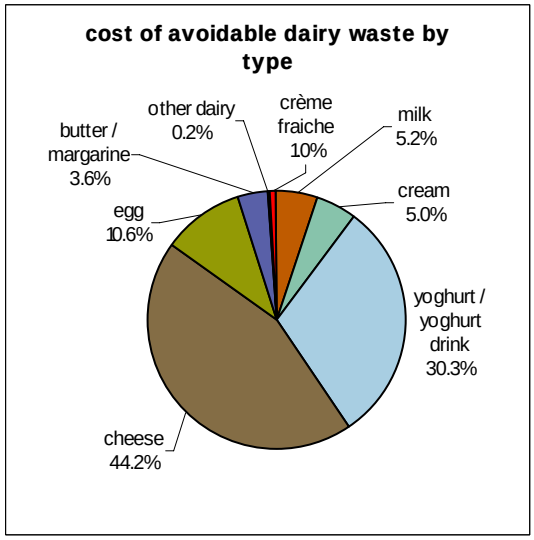
Dairy waste accounts for 4.6% of the weight and 5.5% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 33 and 34 How different types of food make up avoidable dairy waste





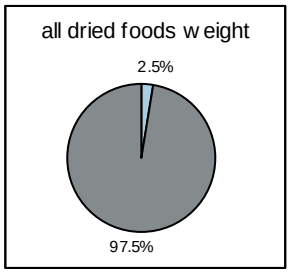
The above charts illustrate that of the avoidable dairy waste generated, more than a third (36%) by weight is made up of yoghurts and yoghurt drinks, whilst more than a fifth consists of milk thrown away in a container (21.5%) and cheese (21.3%). In terms of cost, more than four tenths (44.2%) of avoidable dairy waste is attributable to cheese and three tenths (30.3%) consists of yoghurt and yoghurt drinks. The table below gives the proportions, annual tonnage and cost of each food type making up avoidable dairy waste.

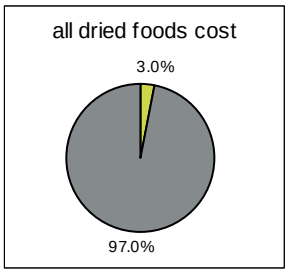
Table 30 The proportion and annual tonnage of avoidable dairy waste

Dairy type	Weight of avoidable dairy waste	Cost of avoidable dairy waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable dairy waste	100% (4.6% of avoidable food waste)	100% (5.5% of avoidable food waste)	187,000	£560
Yoghurts/yoghurt drinks	36.0%	30.3%	67,300	£170
Milk	21.5%	5.2%	40,200	£30
Cheese	21.3%	44.2%	39,900	£250
Eggs	10.0%	10.6%	18,800	£60
Butter/margarine	5.3%	3.6%	9900	£20
Cream	4.9%	5.0%	9100	£30
Crème fraîche	0.8%	1.0%	1500	£10
Other dairy	0.2%	0.2%	400	<£10

3.6 What types of dried foods waste are we producing?

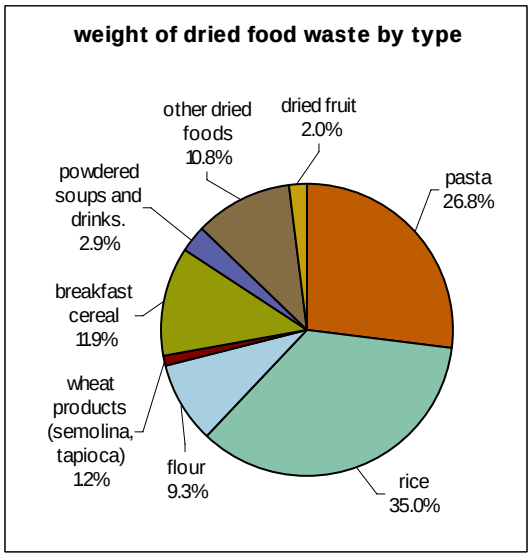
3.6.1 The weight and cost of all dried foods waste

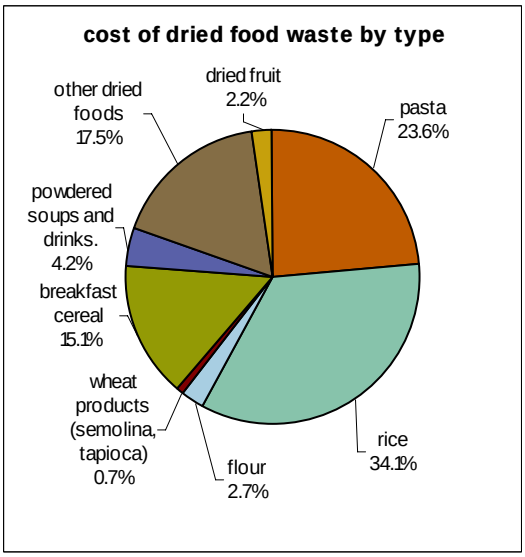




Dried foods waste accounts for 2.5% of the weight and 3% of the cost of all food waste (avoidable, potentially avoidable and unavoidable). It should be noted that the waste within this food group includes dried foods such as rice and pasta that may be cooked prior to disposal; the detailed tables below show the split between cooked and uncooked rice and pasta. The weights associated with the cooked rice and pasta waste are cooked weights. However, the costs are adjusted to reflect the original purchase cost.

Figures 35 and 36 How different types of food make up all dried foods waste



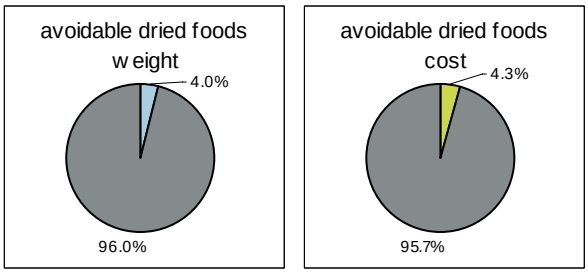


The above charts illustrate that of all the dried foods waste arising, more than a third (35%) of the weight is made up of rice and more than a quarter (26.8%) consists of pasta. In terms of cost, more than a third (34.1%) of dried foods waste is attributable to rice and nearly a quarter (23.6%) to pasta. The following table gives the proportions, annual tonnage and cost of each food type making up all dried foods waste.

Table 31 The proportion and annual tonnage of all dried foods waste

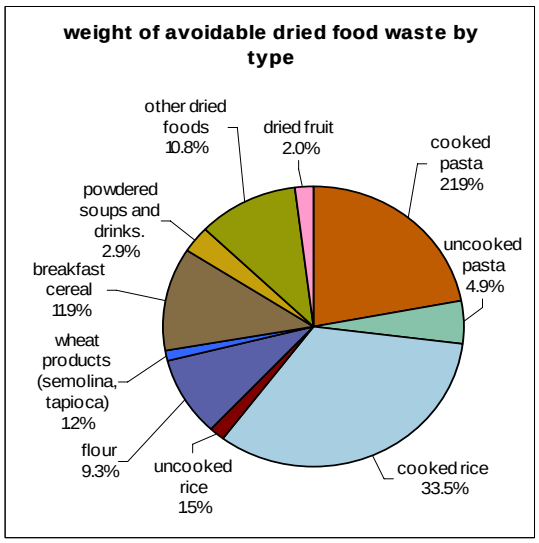
Dried foods type	Weight of all dried foods waste	Cost of all dried foods waste	Weight (tonnes pa)	Cost (£ million pa)
All dried food waste	100% (2.5% of all food waste)	100% (3% of all food waste)	165,500	£440
Rice (cooked and uncooked)	35.0%	34.1%	57,900	£150
Pasta (cooked and uncooked)	26.8%	23.6%	44,400	£100
Breakfast cereals	11.9%	15.1%	19,700	£70
Other dried foods (e.g. pulses, custards)	10.8%	17.5%	17,900	£80
Flour	9.3%	2.7%	15,300	£10
Powdered soups and drinks	2.9%	4.2%	4800	£20
Dried fruits	2.0%	2.2%	3300	£10
Wheat products (e.g. semolina, tapioca)	1.2%	0.7%	2000	<£10

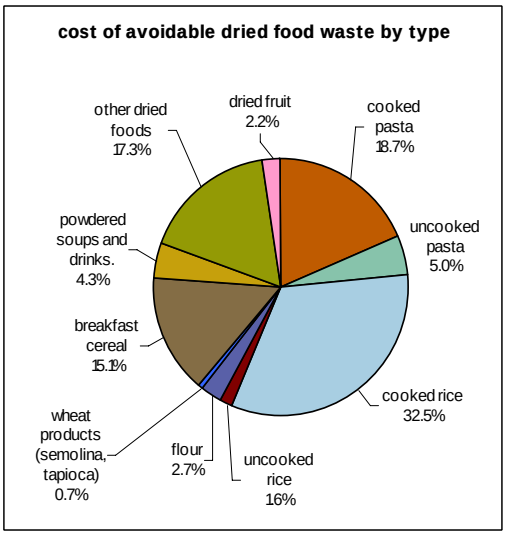
3.6.2 The weight and cost of avoidable dried foods waste



Dried foods waste accounts for 4% of the weight and 4.3% of the cost of avoidable food waste (food that could have been eaten if managed or stored better). The vast majority of dried foods waste is avoidable (99.6%); examples of dried foods waste that are not avoidable are items such as onion seeds and dried pulse shells.

Figures 37 and 38 How different types of food make up all dried foods waste





The above charts illustrate the proportion of weight and cost of dried foods waste that is attributable to the different types of dried foods, differentiating between cooked and dried rice and pasta. Of the avoidable dried foods waste generated, a third (33.5%) of the weight is made up of cooked rice whilst more than a fifth (21.9%) consists of cooked pasta. In terms of cost, nearly a third (32.5%) of avoidable dried foods waste is attributable to cooked rice and nearly a fifth (18.7%) to cooked pasta. The following table gives the proportions, annual tonnage and cost of each food type in more detail making up avoidable dried foods waste.

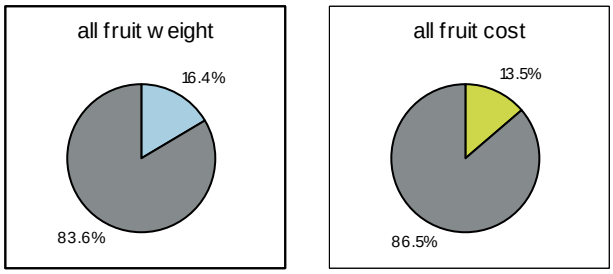
Table 32 The proportion and annual tonnage of avoidable dried foods waste

Dried foods type	Weight of avoidable dried foods waste	Cost of avoidable dried foods waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable dried foods	100% (4% of avoidable food waste)	100% (4.3% of avoidable food waste)	164,900	£440
Cooked rice	33.5%	32.5%	55,300	£140
Cooked pasta	21.9%	18.7%	36,200	£80
Breakfast cereals	11.9%	15.1%	19,700	£70
Other dried foods (e.g. pulses, custards)	10.8%	17.3%	17,600	£80
Flour	9.3%	2.7%	15,300	£10
Uncooked pasta	4.9%	5.0%	8100	£20
Powdered soups and drinks	2.9%	4.3%	4800	£20
Dried fruits	2.0%	2.2%	3300	£10
Uncooked rice	1.5%	1.6%	2500	£10
Wheat products (e.g. semolina, tapioca)	1.2%	0.7%	2000	<£10

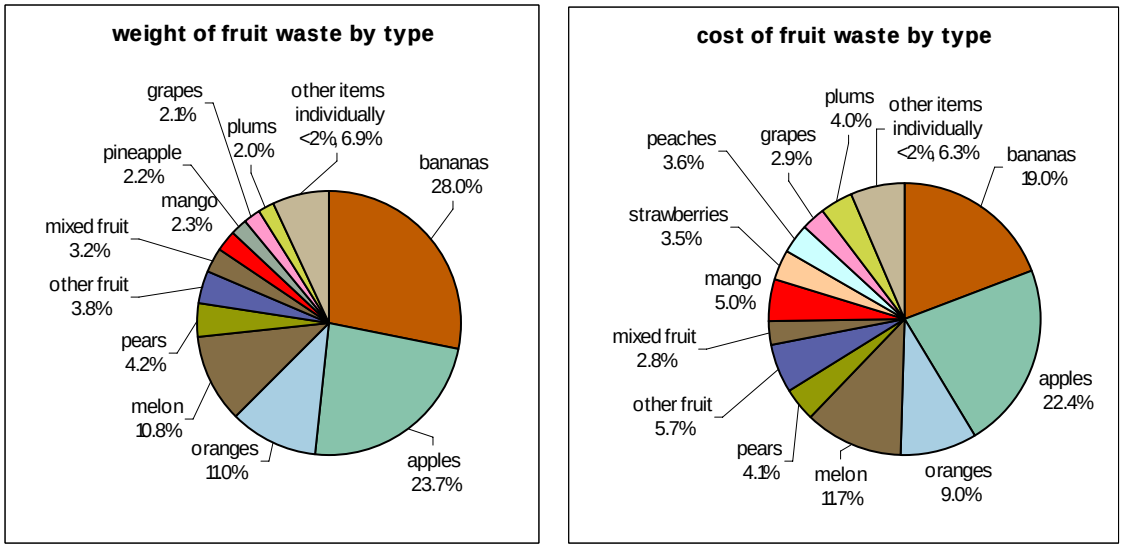
3.7 What types of fruit waste are we producing?

3.7.1 The weight and cost of all fruit waste

Fruit waste accounts for 16.4% of the weight and 13.5% of the cost of all food waste (avoidable, potentially avoidable and unavoidable). This waste includes fruits thrown away whole, partially eaten fruits and fruit peel.



Figures 39 and 40 How different types of food make up all fruit waste



The above charts illustrate that of all the fruit waste arising, nearly three tenths (28%) of the weight is made up of bananas and nearly a quarter (23.7%) consists of apples. This includes items thrown away whole, partially eaten fruits and fruit peel. In terms of cost, nearly a quarter (22.4%) of fruit waste is attributable to apples and nearly a fifth (19%) to bananas. Fruit items accounting for less than 2% of all fruit waste are not labelled on the charts. However, the following table gives the proportions, annual tonnage and cost of each food type making up

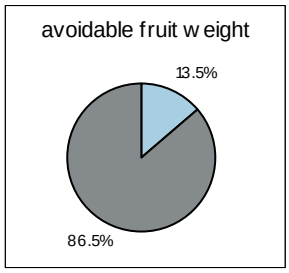
all fruit waste. It should be noted that the waste analysed in this project was generated in the autumn and that the estimated annual weights and costs do not incorporate any allowance for seasonality of fresh fruits.

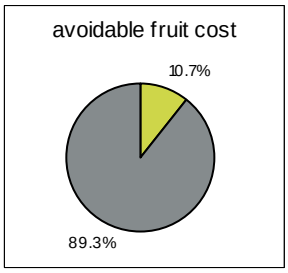
Table 33 The proportion and annual tonnage of all fruit waste

Fruit type	Weight of all fruit waste	Cost of all fruit waste	Weight (tonnes pa)	Cost (£ million pa)
All fruit waste	100% (16.4% of all waste)	100% (13.5% of all waste)	1,100,300	£1960
Bananas	28.0%	19.0%	307,700	£370
Apples	23.7%	22.4%	260,300	£440
Oranges	11.0%	9.0%	120,900	£180
Melons	10.8%	11.7%	119,400	£230
Pears	4.2%	4.1%	45,900	£80
Other fruits[16]	3.8%	5.7%	41,500	£110
Mixed fruits[17]	3.2%	2.8%	34,800	£60
Mangos	2.3%	5.0%	24,900	£100
Pineapples	2.2%	0.6%	24,500	£10
Grapes	2.1%	2.9%	22,900	£60
Plums	2.0%	4.0%	21,600	£80
Lemons	1.8%	1.5%	19,500	£30
Strawberries	1.5%	3.5%	17,000	£70
Peaches	1.4%	3.6%	15,300	£70
Avocados	0.6%	1.8%	6900	£30
Nectarines	0.5%	0.7%	5300	£10
Kiwis	0.4%	0.3%	4600	£10
Pomegranates	0.4%	1.0%	4200	£20
Limes	0.2%	0.1%	2000	<£10
Cherries	0.1%	0.3%	1200	£10

3.7.2 The weight and cost of avoidable fruit waste

Fruit waste accounts for 13.5% of the weight and 10.7% of the cost of avoidable food waste (food that could have been eaten if managed or stored better). This waste will incorporate fruits thrown away whole or partially eaten but will exclude fruit skins and peels.

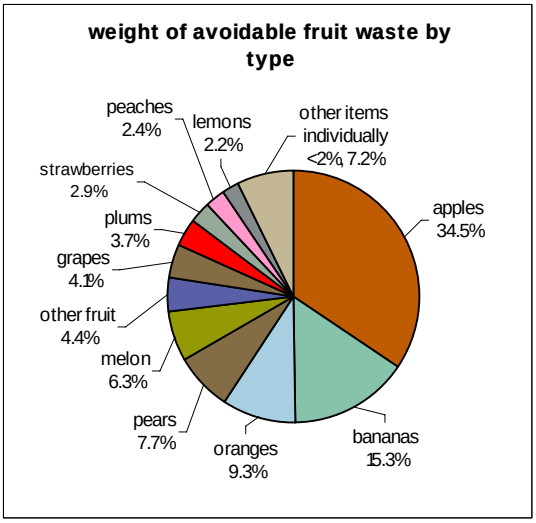


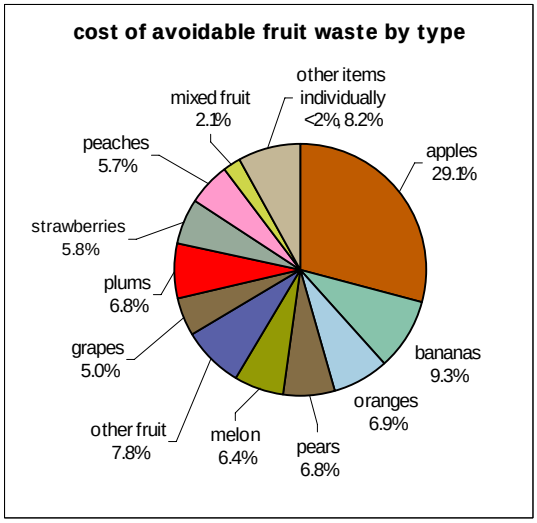


[16] The category of 'other fruits' incorporates items of fruit waste such as star fruit that occur in quantities too small to list separately.

[17] The category of 'mixed fruits' incorporates items of fruit waste that were mixed and could not be separated in the sorting process.

Figures 41 and 42 How different types of food make up avoidable fruit waste





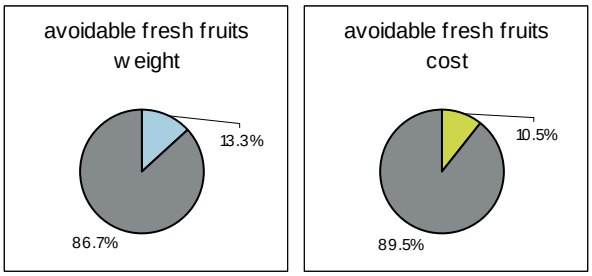
The above charts illustrate that of the avoidable fruit waste generated, more than a third (34.5%) by weight is made up of apples and just less than a fifth (15.3%) is bananas. In terms of cost, three tenths (29.1%) of avoidable fruit waste is attributable to apples and nearly a tenth (9.3%) to bananas. Fruit items accounting for less than 2% of avoidable fruit waste are not labelled on the charts. However, the following table gives the proportions, annual tonnage and cost of each food type making up avoidable fruit waste.

Table 34 The proportion and annual tonnage of avoidable fruit waste

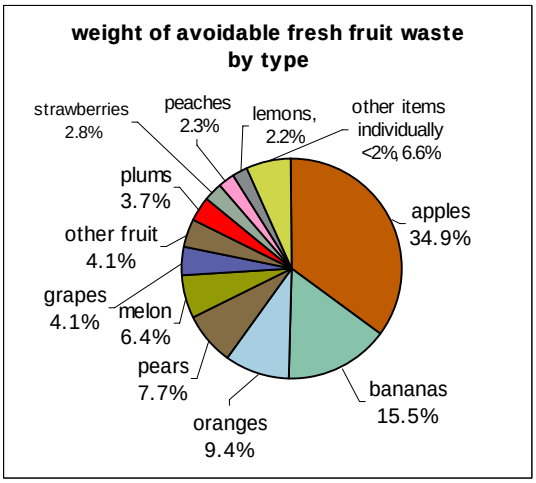
Fruit type	Weight of avoidable fruit waste	Cost of avoidable fruit waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable fruit waste	100% (13.5% of avoidable waste)	100% (10.7% of avoidable waste)	550,800	£1090
Apples	34.5%	29.1%	189,900	£320
Bananas	15.3%	9.3%	84,100	£100
Oranges	9.3%	6.9%	51,300	£80
Pears	7.7%	6.8%	42,400	£70
Melons	6.3%	6.4%	34,900	£70
Other fruits	4.4%	7.8%	24,400	£80
Grapes	4.1%	5.0%	22,300	£50
Plums	3.7%	6.8%	20,400	£70
Strawberries	2.9%	5.8%	15,800	£60
Peaches	2.4%	5.7%	13,400	£60
Lemons	2.2%	1.7%	12,200	£20
Mixed fruits	1.8%	2.1%	9900	£20
Pineapples	1.6%	0.4%	9000	<£10
Mangos	1.0%	1.9%	5500	£20
Nectarines	0.9%	1.2%	5200	£10
Kiwis	0.7%	0.4%	3700	<£10
Avocados	0.6%	1.5%	3200	£20
Pomegranates	0.2%	0.5%	1200	£10
Limes	0.2%	0.1%	1100	<£10
Cherries	0.2%	0.4%	1000	<£10

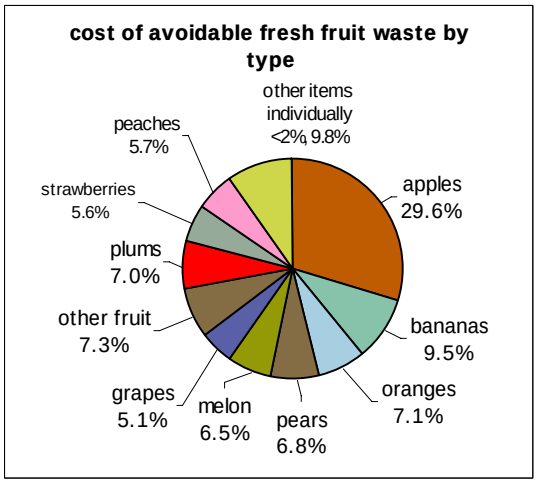
3.7.3 *The weight and cost of avoidable fresh fruit waste*

Fresh fruit waste is a sub-category of fruit waste that is of particular interest due to its intrinsic perishability. In fact the vast majority (99%) of waste fruit is fresh fruit. Fresh fruit waste accounts for 13.3% of the weight and 10.5% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).



Figures 43 and 44 How different types of food make up avoidable fresh fruit waste





The above charts illustrate that of the avoidable fresh fruit waste generated, more than a third (34.9%) by weight is made up of apples and just less than a fifth (15.5%) is bananas. In terms of cost, three tenths (29.6%) of avoidable fresh fruit waste is made up of apples and nearly a tenth (9.5%) consists of bananas. Fruit items accounting for less than 2% of avoidable fresh fruit waste are not labelled on the charts. However, the following table gives the proportions, annual tonnage and cost of each food type making up avoidable fresh fruit waste.

Table 35 The proportion and annual tonnage of avoidable fresh fruit waste

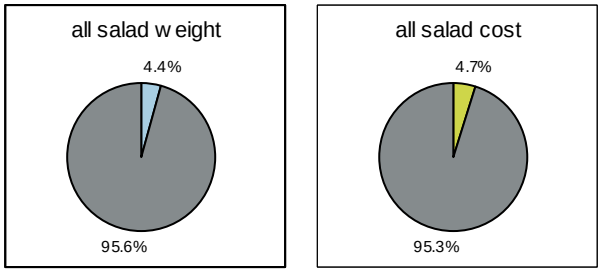
Fresh fruit type	Weight of avoidable fresh fruit waste	Cost of avoidable fresh fruit waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable fresh fruit waste	100% (13.3% of avoidable food waste)	100% (10.5% of avoidable food waste)	543,500	£1070
Apples	34.9%	29.6%	189,900	£320
Bananas	15.5%	9.5%	84,100	£100
Oranges	9.4%	7.1%	51,300	£80
Pears	7.7%	6.8%	41,900	£70
Melons	6.4%	6.5%	34,900	£70
Grapes	4.1%	5.1%	22,300	£50
Other fruit	4.1%	7.3%	22,100	£80
Plums	3.7%	7.0%	20,400	£70
Strawberries	2.8%	5.6%	15,100	£60
Peaches	2.3%	5.7%	12,600	£60
Lemons	2.3%	1.7%	12,200	£20
Pineapples	1.5%	0.3%	8000	<£10
Mixed fruit	1.5%	1.7%	8000	£20
Mangos	1.0%	1.9%	5500	£20

Fresh fruit type	Weight of avoidable fresh fruit waste	Cost of avoidable fresh fruit waste	Weight (tonnes pa)	Cost (£ million pa)
Nectarines	1.0%	1.2%	5200	£10
Kiwis	0.7%	0.5%	3700	<£10
Avocados	0.6%	1.5%	3200	£20
Pomegranates	0.2%	0.5%	1200	£10
Limes	0.2%	0.1%	1100	<£10
Cherries	0.2%	0.3%	800	<£10

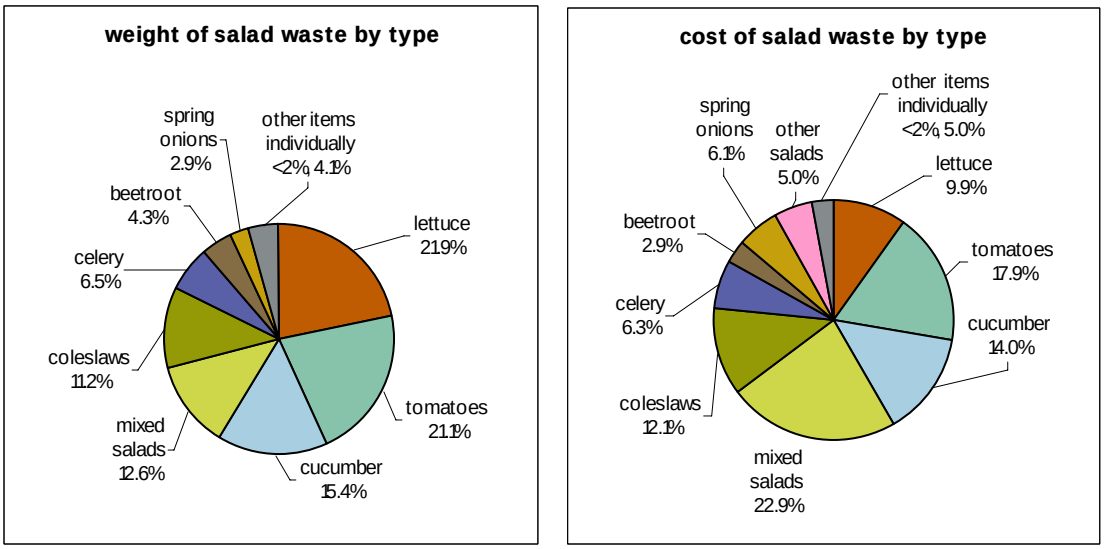
3.8 What types of salad waste are we producing?

3.8.1 The weight and cost of all salad waste

Salad waste accounts for 4.4% of the weight and 4.7% of the cost of all food waste (avoidable, potentially avoidable and unavoidable). Food waste within this category includes standard salad leaves, fruits and vegetables plus pre-prepared salads and coleslaws.



Figures 45 and 46 How different types of food make up all salad waste



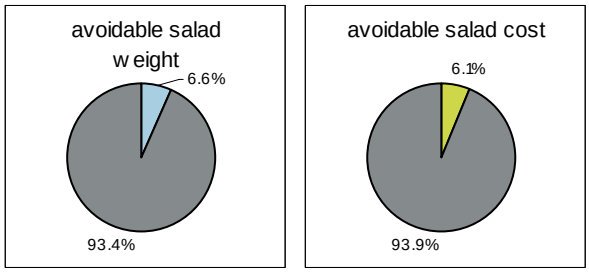
The above charts illustrate that of all the salad waste arising, more than a fifth (21.9%) of the weight is made up of lettuce and a similar proportion (21.1%) consists of tomatoes. In terms of cost, nearly a quarter (22.9%) of salad waste is made up of mixed (usually bagged) salad leaves and just less than a fifth (17.9%) consists of tomatoes. Salad items accounting for less than 2% of all salad waste are not labelled on the charts. However, the table below gives the proportions, annual tonnage and cost of each food type making up all salad waste.

Table 36 The proportion and annual tonnage of all salad waste

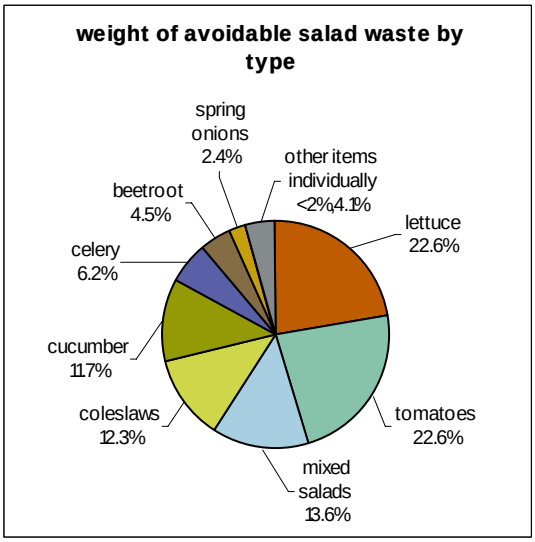
Salad type	Weight of all salad waste	Cost of all salad waste	Weight (tonnes pa)	Cost (£ million pa)
All salad waste	100% (4.4% of all food waste)	100% (4.7% of all food waste)	297,200	£690
Lettuces	21.9%	9.9%	65,100	£70
Tomatoes	21.1%	17.9%	62,600	£120
Cucumbers	15.4%	14.0%	45,700	£100
Mixed salads	12.6%	22.9%	37,400	£160
Coleslaws	11.2%	12.1%	33,300	£80
Celery	6.5%	6.3%	19,300	£40
Beetroot	4.3%	2.9%	12,900	£20
Spring onions	2.9%	6.1%	8700	£40
Other salads	1.9%	5.0%	5800	£30
Potato salads	1.6%	1.8%	4700	£10
Radishes	0.4%	0.5%	1300	<£10
Rocket	0.1%	0.6%	300	<£10

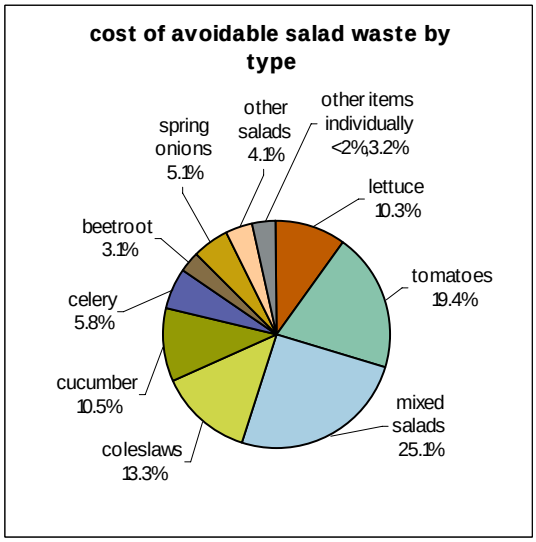
3.8.2 The weight and cost of avoidable salad waste

Salad waste accounts for 6.6% of the weight and 6.1% of the cost of avoidable salad food waste (food that could have been eaten if managed or stored better).



Figures 47 and 48 How different types of food make up avoidable salad waste





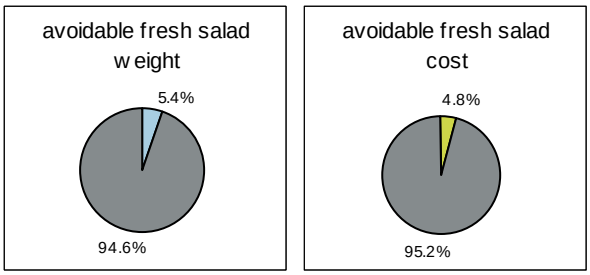
The above charts illustrate that of the avoidable salad waste generated, more than a fifth of the weight is made up of tomatoes (22.6%) and lettuce (22.6%) respectively. In terms of cost, a quarter (25.1%) of avoidable salad waste is attributable to mixed (bagged) salads and a fifth (19.4%) to tomatoes. Salad items accounting for less than 2% of avoidable salad waste are not labelled on the charts. However, the table below gives the proportions, annual tonnage and cost of each food type making up avoidable salad waste.

Table 37 The proportion and annual tonnage of avoidable salad waste

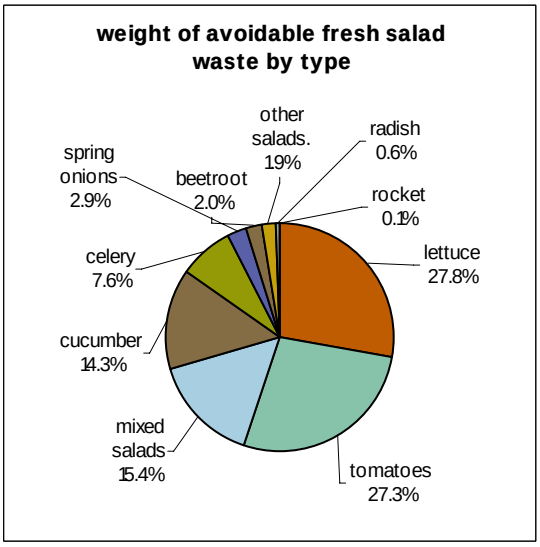
Salad type	Weight of avoidable salad waste	Cost of avoidable salad waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable salad waste	100% (6.6% of avoidable food waste)	100% (6.1% of avoidable food waste)	271,300	£620
Lettuces	22.6%	10.3%	61,300	£60
Tomatoes	22.6%	19.4%	61,300	£120
Mixed salads	13.6%	25.1%	37,000	£160
Coleslaws	12.3%	13.3%	33,300	£80
Cucumbers	11.7%	10.5%	31,600	£70
Celery	6.2%	5.8%	16,800	£40
Beetroot	4.5%	3.1%	12,200	£20
Spring onions	2.4%	5.1%	6500	£30
Other salads	1.9%	4.1%	5000	£30
Potato salads	1.7%	2.0%	4700	£10
Radishes	0.5%	0.5%	1200	<£10
Rocket	0.1%	0.7%	300	<£10

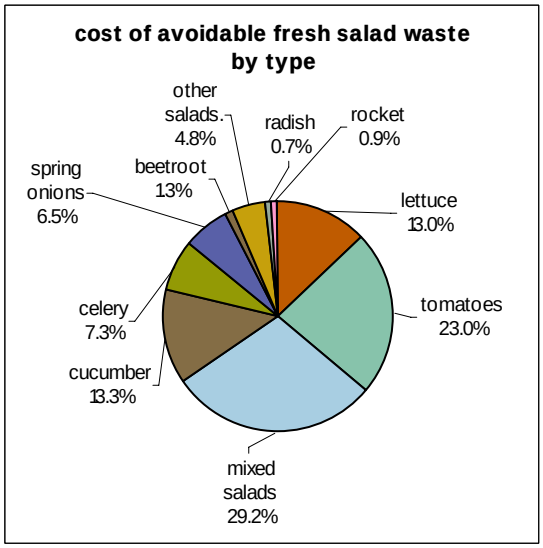
3.8.3 The weight and cost of avoidable fresh salad waste

Fresh salad (excluding processed salads such as coleslaw and potato salad) waste accounts for 5.4% of the weight and 4.8% of the cost of avoidable salad waste (food that could have been eaten if managed or stored better).



Figures 49 and 50 How different types of food make up avoidable fresh salad waste





The above charts illustrate that of the avoidable fresh salad waste generated, nearly three tenths of the weight is made up of tomatoes (27.3%) and lettuce (27.8%) respectively. In terms of cost, three tenths (29.2%) of avoidable fresh salad waste is made up of mixed (bagged) salads and nearly a quarter (23%) consists of tomatoes. The following table gives the proportions, annual tonnage and cost of each food type making up avoidable fresh salad waste.

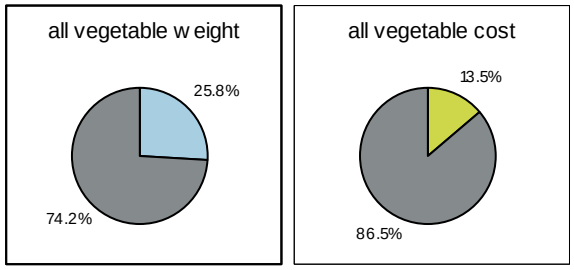
Table 38 The proportion and annual tonnage of avoidable fresh salad waste

Fresh salad type	Weight of avoidable fresh salad waste	Cost of avoidable fresh salad waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable fresh salad	100% (5.4% of avoidable food waste)	100% (4.8% of avoidable food waste)	220,400	£490
Lettuces	27.8%	13.0%	61,300	£60
Tomatoes	27.3%	23.0%	60,100	£110
Mixed salads	15.4%	29.2%	34,000	£140
Cucumbers	14.3%	13.3%	31,600	£70
Celery	7.6%	7.3%	16,800	£40
Spring onions	2.9%	6.5%	6500	£30
Beetroot	2.0%	1.3%	4400	£10
Other salads	1.9%	4.8%	4300	£20
Radishes	0.6%	0.7%	1200	£0
Rocket	0.1%	0.9%	300	£0

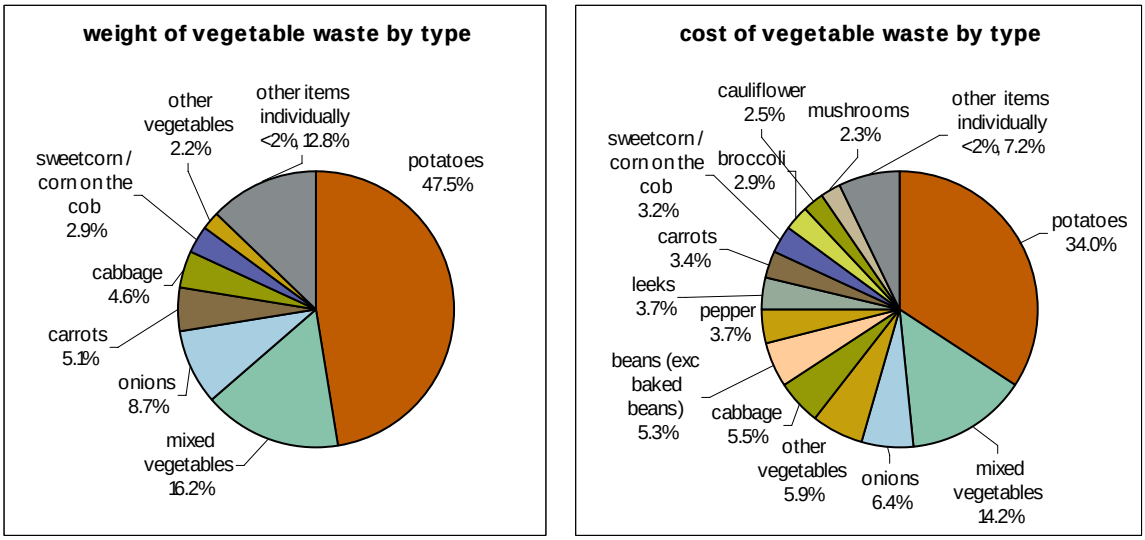
3.9 What types of vegetable waste are we producing?

3.9.1 The weight and cost of all vegetable waste

Vegetable waste accounts for 25.8% of the weight and 13.5% of the cost of all food waste (avoidable, potentially avoidable and unavoidable).



Figures 51 and 52 How different types of food make up all vegetable waste



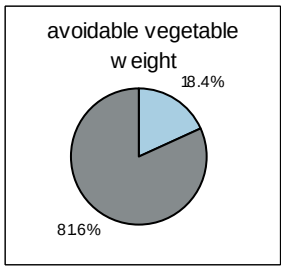
The above charts illustrate that of all the vegetable waste arising, nearly half (47.5%) of the weight is made up of potatoes (both raw and cooked) and nearly a fifth (16.2%) consists of mixed vegetables that could not be separately identified in the sorting process. In terms of cost, more than a third (34%) of vegetable waste is made up of potatoes and more than a tenth (14.2%) consists of mixed (not separately identifiable) vegetable waste. The following table gives the proportions, annual tonnage and cost of each food type making up all vegetable waste including those that are not separately labelled on the above charts (where the proportion is less than 2% of all vegetable waste).

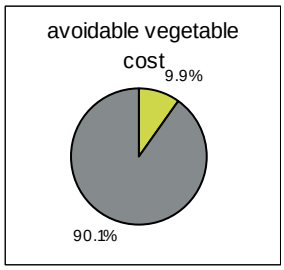
Table 39 The proportion and annual tonnage of all vegetable waste

Vegetable type	Weight of all vegetable waste	Cost of all vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
All vegetable waste	100% (25.8% of all food waste	100% (13.5% of all food waste)	1,729,800	£1950
Potatoes	47.5%	34.0%	822,100	£660
Mixed vegetables	16.2%	14.2%	280,300	£280
Onions	8.7%	6.4%	149,700	£120
Carrots	5.1%	3.4%	87,600	£70
Cabbages	4.6%	5.5%	79,600	£110
Sweetcorn/corn on the cob	2.9%	3.2%	50,800	£60
Other vegetables	2.2%	5.9%	37,700	£110
Cauliflowers	1.9%	2.5%	33,100	£50
Beans (excluding baked beans)	1.8%	5.3%	32,000	£100
Broccoli	1.6%	2.9%	28,000	£60
Peppers	1.2%	3.7%	20,400	£70
Turnips/swedes	0.9%	1.1%	16,300	£20
Mushrooms	0.9%	2.3%	16,200	£50
Leeks	0.9%	3.7%	15,100	£70
Baked beans	0.8%	0.8%	14,100	£10
Peas (all varieties)	0.7%	0.7%	12,000	£10
Parsnips	0.6%	1.1%	10,800	£20
Courgettes	0.5%	0.8%	7800	£20
Brussel sprouts	0.3%	0.9%	5200	£20
Spinach	0.3%	0.4%	4600	£10
Sandwich spreads (vegetable-based)	0.2%	1.0%	4300	£20
Aubergines	0.1%	0.4%	2000	£10

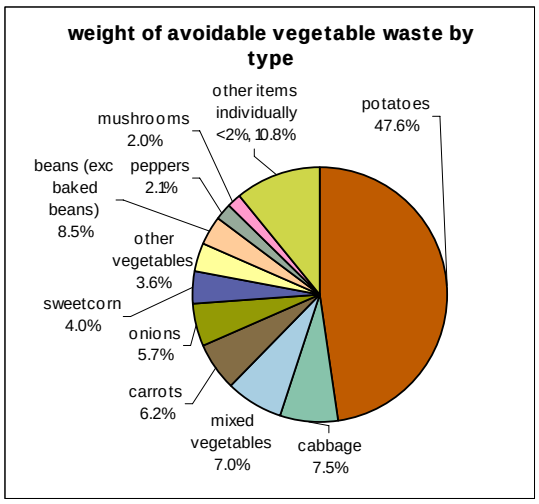
3.9.2 The weight and cost of avoidable vegetable waste

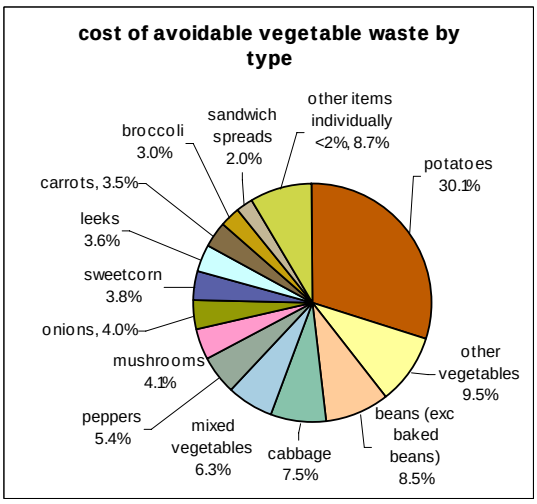
Vegetable waste accounts for 18.4% of the weight and 9.9% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 53 and 54 How different types of food make up avoidable vegetable waste





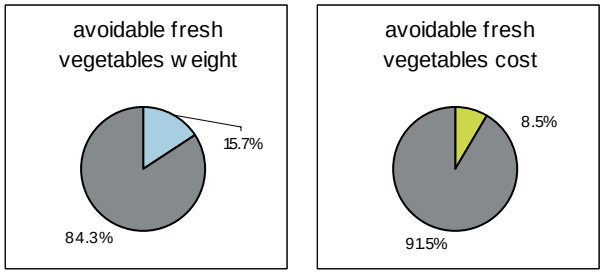
The previous charts illustrate that of the avoidable vegetable waste generated, nearly half (47.6%) of the weight is made up of potatoes and just under a tenth (7.5%) is cabbages. In terms of cost, three tenths (30.1%) of avoidable vegetable waste is attributable to potatoes and just less than a tenth (8.5%) to beans. The following table gives the proportions, annual tonnage and cost of each food type making up avoidable vegetable waste (including those making up less than 2% of avoidable vegetable waste that are not labelled on the charts).

Table 40 The proportion and annual tonnage of avoidable vegetable waste

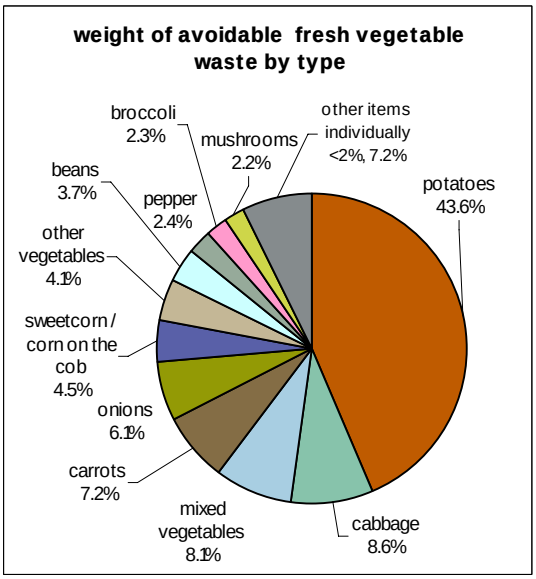
Vegetable type	Weight of avoidable vegetable waste	Cost of avoidable vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable vegetable waste	100% (18.4% of avoidable food waste)	100% (9.9% of avoidable food waste)	752,500	£1000
Potatoes	47.6%	30.1%	358,500	£300
Cabbages	7.5%	7.5%	56,300	£80
Mixed vegetables	7.0%	6.3%	52,500	£60
Carrots	6.2%	3.5%	46,300	£40
Onions	5.7%	4.0%	43,100	£40
Sweetcorn/corn on the cob	4.0%	3.8%	30,200	£40
Other vegetables	3.6%	9.5%	27,300	£100
Beans (excluding baked beans)	3.5%	8.5%	26,400	£90
Peppers	2.1%	5.4%	15,500	£50
Mushrooms	2.0%	4.1%	14,800	£40
Broccoli	1.9%	3.0%	14,700	£30
Baked beans	1.9%	1.5%	14,000	£10
Cauliflowers	1.1%	1.2%	8200	£10
Leeks	1.1%	3.6%	8100	£40
Peas (all varieties)	0.9%	0.7%	6500	£10
Turnips/swedes	0.8%	0.8%	6400	£10
Parsnips	0.8%	1.2%	6300	£10
Courgettes	0.7%	1.1%	5400	£10
Sandwich spreads (vegetable-based)	0.6%	2.0%	4300	£20
Spinach	0.5%	0.6%	3700	£10
Brussel sprouts	0.3%	1.0%	2500	£10
Aubergines	0.2%	0.5%	1500	£10

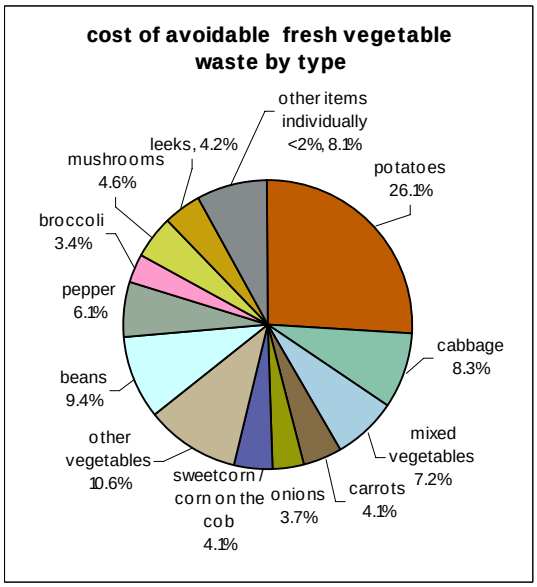
3.9.3 The weight and cost of avoidable fresh vegetable waste

Fresh vegetables (excluding processed vegetables) account for 15.7% of the weight and 8.5% of the cost of avoidable food waste (food that could have been eaten if managed or stored better). Fresh vegetable waste includes items that are thrown away whole, partially eaten, cooked or raw.



Figures 55 and 56 How different types of food make up avoidable fresh vegetable waste





The above charts illustrate that of the avoidable fresh vegetable waste generated, more than four tenths (43.6%) of the weight is made up of potatoes and just under a tenth (8.6%) is cabbage waste. In terms of cost, more than a quarter (26.1%) of avoidable fresh vegetable waste is attributable to potatoes and (ignoring the 'other' category which includes numerous different types) less than a tenth (9.4%) is made up of beans. Vegetable items accounting for less than 2% of avoidable fresh vegetable waste are not labelled on the charts. However, the following table gives the proportions, annual tonnage and cost of each food type making up avoidable fresh vegetable waste.

Table 41 The proportion and annual tonnage of avoidable fresh vegetable waste

Fresh vegetable type	Weight of avoidable fresh vegetable waste	Cost of avoidable fresh vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable fresh vegetable waste	100% (15.7% of avoidable food waste)	100% (8.5% of avoidable food waste)	640,600	£870
Potatoes	43.6%	26.1%	279,200	£230
Cabbages	8.6%	8.3%	55,000	£70
Mixed vegetables	8.1%	7.2%	52,000	£60
Carrots	7.2%	4.1%	45,900	£40
Onions	6.1%	3.7%	39,200	£30
Sweetcorn/corn on the cob	4.5%	4.1%	28,600	£40

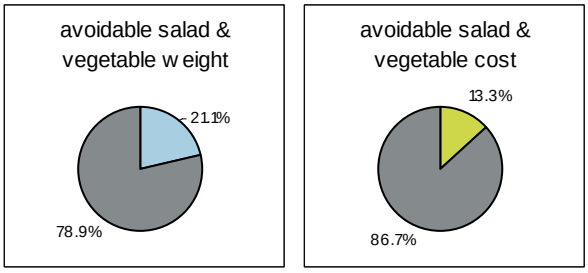
Fresh vegetable type	Weight of avoidable fresh vegetable waste	Cost of avoidable fresh vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
Other vegetables	4.1%	10.6%	26,300	£90
Beans (excluding baked beans)	3.7%	9.4%	24,000	£80
Peppers	2.4%	6.1%	15,100	£50
Broccoli	2.3%	3.4%	14,700	£30
Mushrooms	2.2%	4.6%	14,200	£40
Cauliflowers	1.3%	1.4%	8200	£10
Leeks	1.3%	4.2%	8100	£40
Turnips/swedes	1.0%	0.9%	6400	£10
Parsnips	0.9%	1.2%	5600	£10
Courgettes	0.8%	1.2%	5400	£10
Peas (all varieties)	0.8%	0.7%	5000	£10
Spinach	0.6%	0.7%	3700	£10
Brussel sprouts	0.4%	1.2%	2500	£10
Aubergines	0.2%	0.6%	1500	£10

3.10 What types of fresh salad and vegetable waste are we producing?

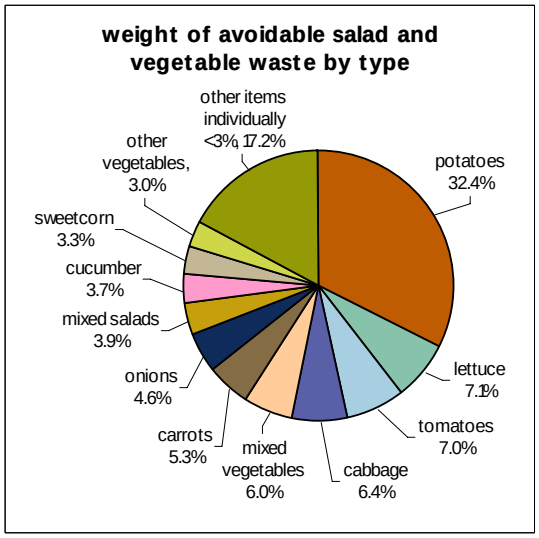
Sections 3.8 and 3.89 provide details on the weight and cost of vegetable and salad waste by type separately. WRAP has found it necessary to combine these two groups but exclude food items that are processed, such as coleslaws and baked beans. The following analysis provides details of the avoidable food waste weight and cost within the combined category of avoidable fresh salad and vegetable waste.

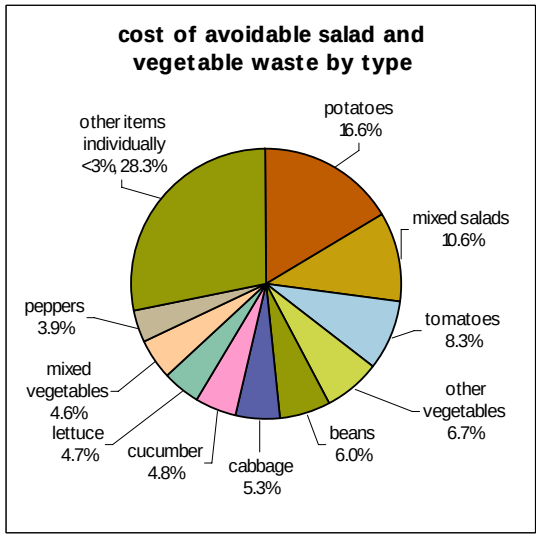
3.10.1 The weight and cost of avoidable fresh salad and vegetable waste

Fresh salad and vegetable waste accounts for 21.1% of the weight and 13.3% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).



Figures 57 and 58 How different types of food make up avoidable fresh salad and vegetable waste





The above charts illustrate that of the unprocessed avoidable salad and vegetable waste generated, a third (32.4%) by weight is made up of potatoes and just under a tenth is lettuce (7.1%) and tomatoes (7%)

respectively. In terms of cost, just under a fifth (16.6%) of avoidable fresh salad and vegetable waste is attributable to potatoes and a tenth (10.6%) to mixed salad leaves. The following table gives the proportions, annual tonnage and cost of each food type making up avoidable fresh salad and vegetable waste (items making up less than 2% of the weight and 3% of the cost are not labelled on the charts).

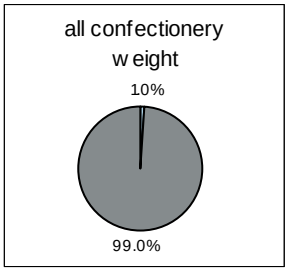
Table 42 The proportion and annual tonnage of avoidable fresh salad and vegetable waste

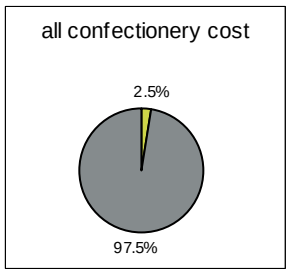
Salad and vegetable type	Weight of avoidable salad and vegetable waste	Cost of avoidable salad and vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable salad and vegetable waste	100% (21.1% of avoidable food waste)	100% (13.3% of avoidable food waste)	861,000	£1360
Potatoes	32.4%	16.6%	279,200	£230
Lettuces	7.1%	4.7%	61,300	£60
Tomatoes	7.0%	8.3%	60,100	£110
Cabbages	6.4%	5.3%	55,000	£70
Mixed vegetables	6.0%	4.6%	52,000	£60
Carrots	5.3%	2.6%	45,900	£40
Onions	4.6%	2.3%	39,200	£30
Mixed salads	3.9%	10.6%	34,000	£140
Cucumbers	3.7%	4.8%	31,600	£70
Sweetcorn/corn on the cob	3.3%	2.6%	28,600	£40
Other vegetables	3.1%	6.7%	26,300	£90
Beans (excluding baked beans)	2.8%	6.0%	24,000	£80
Celery	2.0%	2.7%	16,800	£40
Peppers	1.8%	3.9%	15,100	£50
Broccoli	1.7%	2.2%	14,700	£30
Mushrooms	1.6%	2.9%	14,200	£40
Cauliflowers	1.0%	0.9%	8200	£10
Leeks	0.9%	2.7%	8100	£40
Spring onions	0.8%	2.4%	6500	£30
Turnips/swedes	0.7%	0.6%	6400	£10
Parsnips	0.6%	0.8%	5600	£10
Courgettes	0.6%	0.8%	5400	£10
Peas (all varieties)	0.6%	0.5%	5000	£10
Beetroot	0.5%	0.5%	4400	£10
Other salads	0.5%	1.7%	4300	£20
Spinach	0.4%	0.5%	3700	£10
Brussel sprouts	0.3%	0.8%	2500	£10
Aubergines	0.2%	0.4%	1500	£10
Radishes	0.1%	0.2%	1200	<£10
Rocket	0.0%	0.3%	300	<£10

3.11 What types of confectionery waste are we producing?

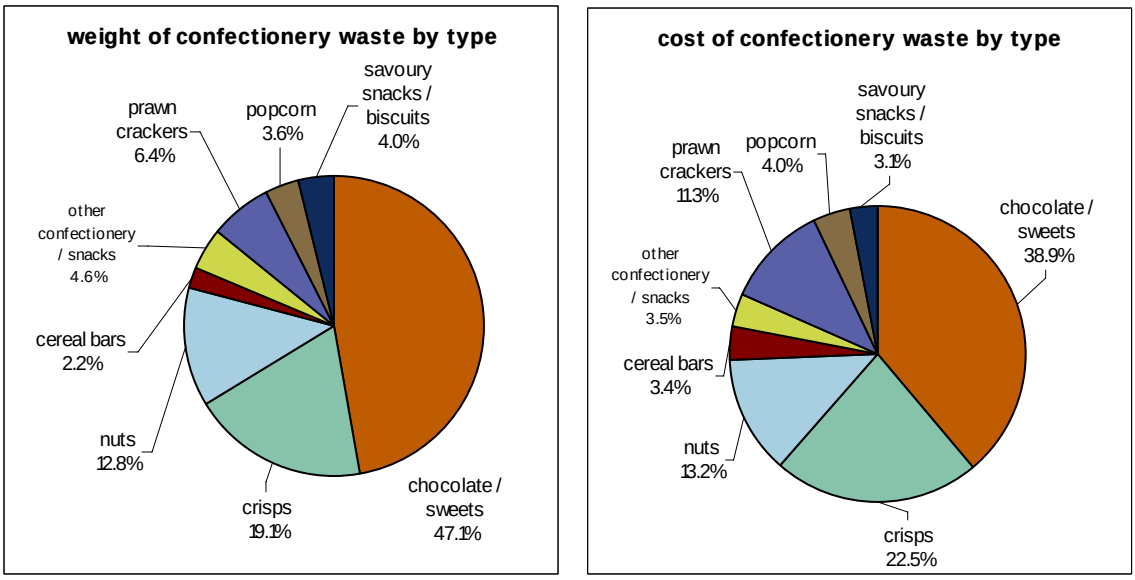
3.11.1 The weight and cost of all confectionery waste

Confectionery waste accounts for 1% of the weight and 2.5% of the cost of all food waste (avoidable, potentially avoidable and unavoidable).





Figures 59 and 60 How different types of food make up all confectionery waste



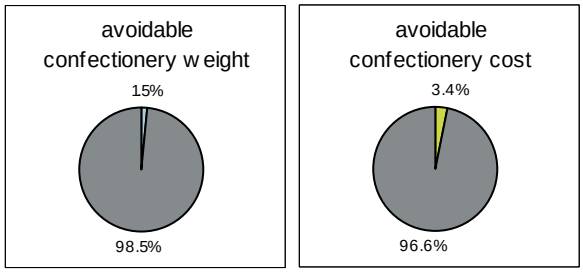
The above charts illustrate that of all the confectionery and snack waste arising, nearly half (47.1%) of the weight is made up of chocolate and sweets and nearly a fifth (19.1%) consists of crisps. In terms of cost, nearly four tenths (38.9%) of confectionery waste is attributable to chocolate and sweets and more than a fifth (22.5%) to crisps. The following table gives the proportions, annual tonnage and cost of each food type making up all confectionery waste.

Table 43 The proportion and annual tonnage of all confectionery waste

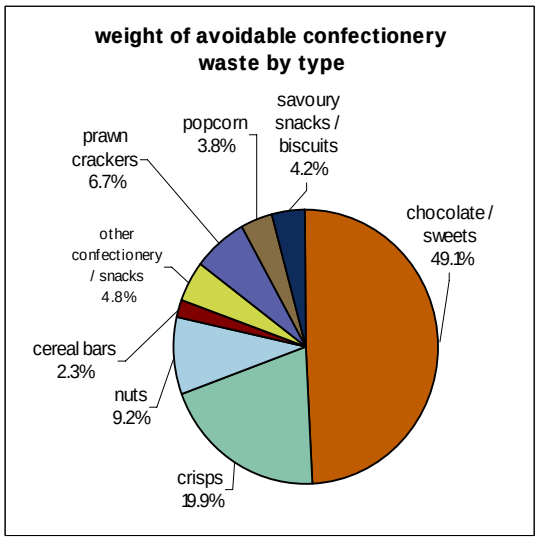
Confectionery type	Weight of all confectionery waste	Cost of all confectionery waste	Weight (tonnes pa)	Cost (£ million pa)
All confectionery waste	100% (1% of all food waste)	100% (2.5% of all food waste)	65,200	£370
Chocolate/sweets	47.1%	38.9%	30,800	£140
Crisps	19.1%	22.5%	12,500	£80
Nuts	12.8%	13.2%	8400	£50
Prawn crackers	6.4%	11.3%	4200	£40
Other confectionery or snacks	4.6%	3.5%	3000	£10
Savoury snacks/biscuits	4.0%	3.1%	2600	£10
Popcorn	3.6%	4.0%	2300	£10
Cereal bars	2.2%	3.4%	1400	£10

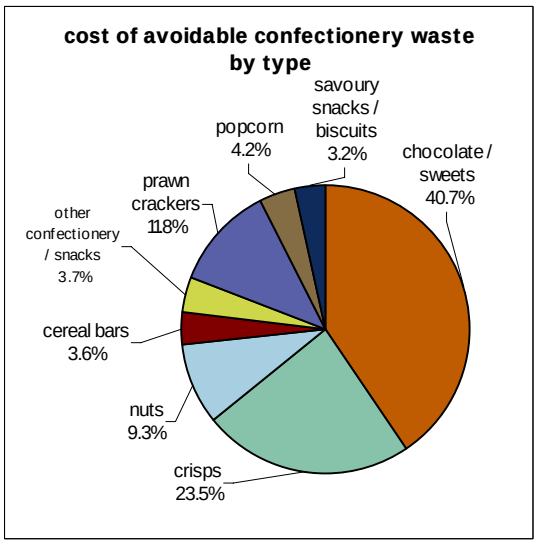
3.11.2 *The weight and cost of avoidable confectionery waste*

Confectionery waste accounts for 1.5% of the weight and 3.4% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).



Figures 61 and 62 How different types of food make up avoidable confectionery waste





The above charts illustrate that of the avoidable confectionery waste generated, half (49.1%) of the weight is made up of chocolate and sweets and a fifth (19.9%) is crisps. In terms of cost, four tenths (40.7%) of avoidable confectionery waste is attributable to chocolate and sweets and just under a quarter (23.5%) to crisps. The following table gives the proportions, annual tonnage and cost of each food type making up avoidable confectionery waste.

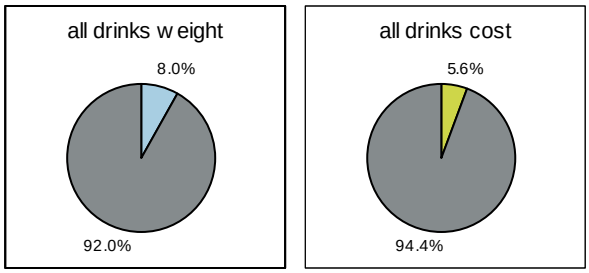
Table 44 The proportion and annual tonnage of avoidable confectionery waste

Confectionery type	Weight of avoidable confectionery waste	Cost of avoidable confectionery waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable confectionery waste	100% (1.5% of avoidable waste)	100% (3.4% of avoidable waste)	62,500	£350
Chocolate/sweets	49.1%	40.7%	30,700	£140
Crisps	19.9%	23.5%	12,400	£80
Nuts	9.2%	9.3%	5700	£30
Prawn crackers	6.7%	11.8%	4200	£40
Other confectionery or snacks	4.8%	3.7%	3000	£10
Savoury snacks/biscuits	4.2%	3.2%	2600	£10
Popcorn	3.8%	4.2%	2300	£10
Cereal bars	2.3%	3.6%	1400	£10

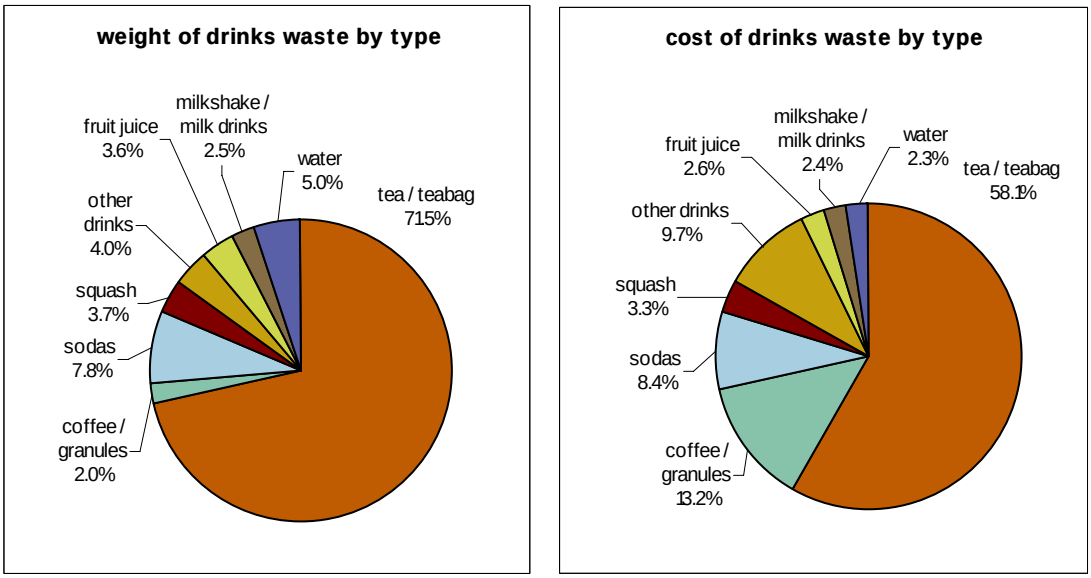
3.12 What types of drinks waste are we producing?

3.12.1 The weight and cost of all drinks waste

Drinks waste (excluding milk which is incorporated within 'dairy' food waste) accounts for 8% of the weight and 5.6% of the cost of all food waste (avoidable, potentially avoidable and unavoidable). It should be noted that the waste within this category consists of drinks disposed of within a container (the weight of the container is excluded from the analysis). WRAP is undertaking a separate study to measure the amount of drinks and liquids that are disposed of via domestic sinks, toilets and drains.



Figures 63 and 64 How different types of drinks make up all drinks waste



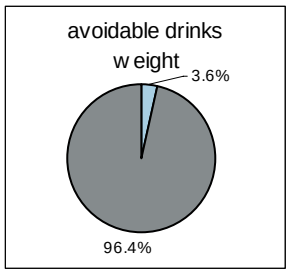
The above charts illustrate that of all the drinks waste arising within the collected waste, more than seven tenths (71.5%) of the weight is made up of tea or teabags and just less than a tenth (7.8%) consists of sodas. In terms of cost, nearly six tenths (58.1%) of drinks waste is attributable to tea and teabags and more than a tenth (13.2%) to coffee granules. The following table gives the estimated proportions, annual tonnage and cost of each type of drink making up all drinks waste.

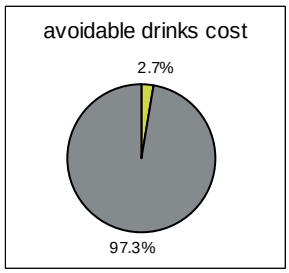
Table 45 The proportion and annual tonnage of all drinks waste

Drink type	Weight of all drinks waste	Cost of all drinks waste	Weight (tonnes pa)	Cost (£ million pa)
All drinks waste	100% (8% of all food waste)	100% (5.6% of all food waste	536,400	£810
Tea/teabags	71.5%	58.1%	383,500	£470
Sodas	7.8%	8.4%	42,100	£70
Water	5.0%	2.3%	26,600	£20
Other drinks	4.0%	9.7%	21,300	£80
Squash/cordials	3.7%	3.3%	20,000	£30
Fruit juices	3.6%	2.6%	19,100	£20
Milkshakes/milk drinks	2.5%	2.4%	13,200	£20
Coffee/granules	2.0%	13.2%	10,700	£110

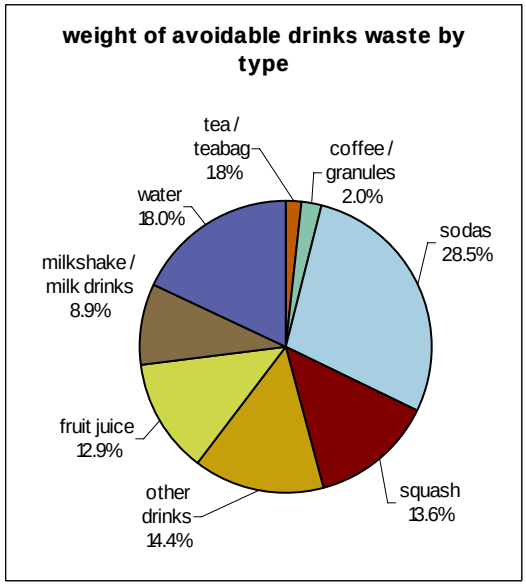
3.12.2 *The weight and cost of avoidable drinks waste*

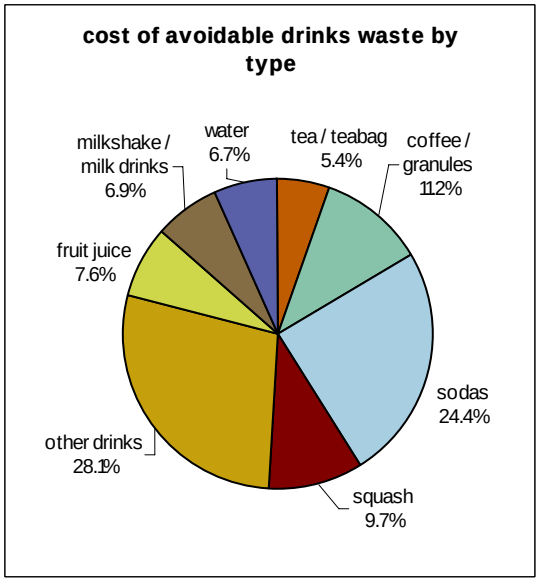
Drinks waste accounts for 3.6% of the weight and 2.7% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 65 and 66 How different types of drink make up avoidable drinks waste





The above charts illustrate that of the avoidable drink waste put out for collection by the council, nearly three tenths (28.5%) of the weight is made up of sodas and nearly a fifth (18%) is bottled water. In terms of cost, nearly three tenths (28.1%) of avoidable drinks waste consists of 'other' drinks (which includes liqueurs and spirits) and a quarter (24.4%) is attributable to sodas. The following table gives the estimated proportions, annual tonnage and cost of each food type making up avoidable drinks waste.

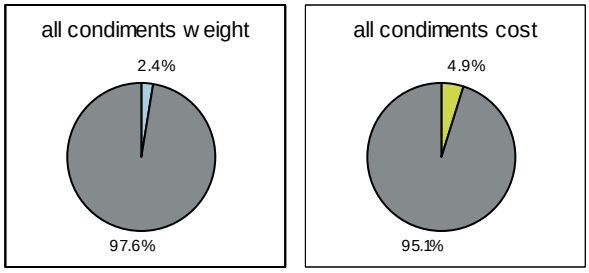
Table 46 The proportion and annual tonnage of avoidable drinks waste

Drinks type	Weight of avoidable drinks waste	Cost of avoidable drinks waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable drinks waste	100% (3.6% of avoidable food waste)	100% (2.7% of avoidable food waste)	147,500	£280
Sodas	28.5%	24.4%	42,000	£70
Water	18.0%	6.7%	26,600	£20
Other drinks	14.4%	28.1%	21,200	£80
Squash/cordials	13.6%	9.7%	20,000	£30
Fruit juices	12.9%	7.6%	19,100	£20
Milkshakes/milk drinks	8.9%	6.9%	13,100	£20
Coffee/granules	2.0%	11.2%	2900	£30
Tea/teabags (unused)	1.8%	5.4%	2600	£20

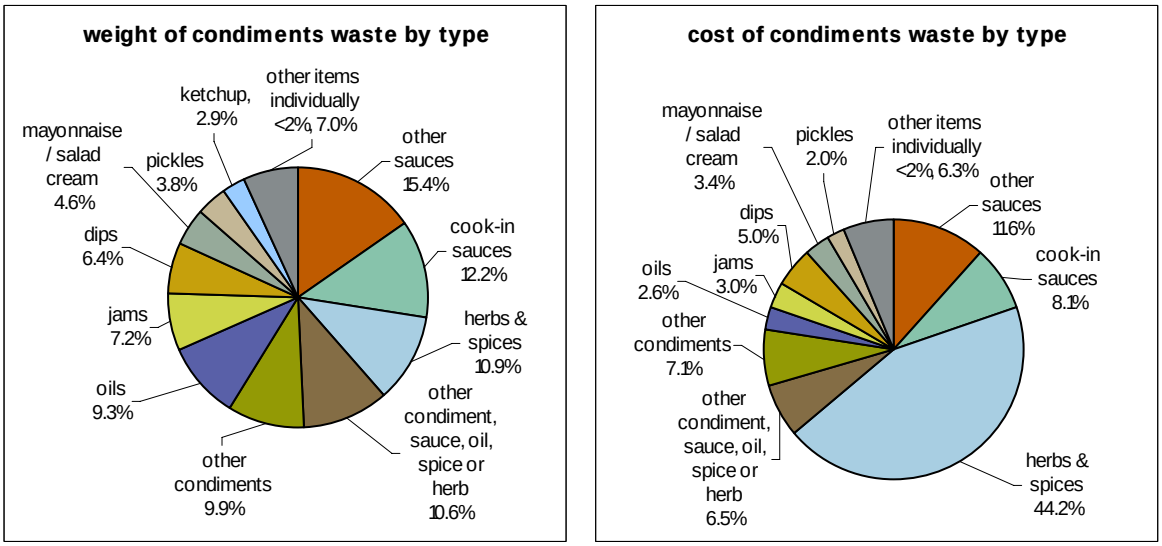
3.13 What types of condiments waste are we producing?

3.13.1 The weight and cost of all condiments waste

Condiments waste accounts for 2.4% of the weight and 4.9% of the cost of all food waste (avoidable, potentially avoidable and unavoidable). This category of food includes items such as sauces, oils, herbs (dry and fresh) and spices. Liquid condiments are those disposed of within a container only (separate work is underway to quantify liquids disposed via sinks, drains and toilets) and the weight of the container is excluded from the analysis.



Figures 67 and 68 How different types of food make up all condiments waste



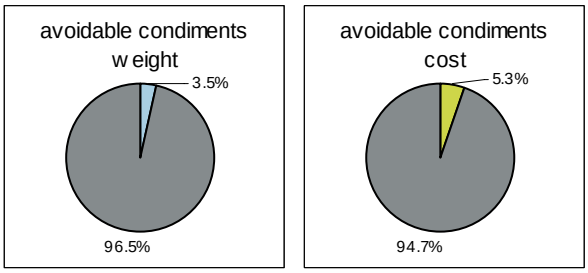
The above charts illustrate that of all the condiments waste arising that could be categorised in the sorting process, more than a tenth (12.2%) of the weight is made up of cook-in sauces thrown away within a container. A tenth (10.9%) consists of herbs and spices (both dry and fresh). In terms of cost, more than four tenths (44.2%) of condiments waste is attributable to herbs and spices and nearly a tenth (8.1%) to cook-in sauces. Condiment items accounting for less than 2% of all condiments waste are not labelled on the charts. However, the following table gives the proportions, annual tonnage and cost of each food type making up all condiments waste.

Table 47 The proportion and annual tonnage of all condiments waste

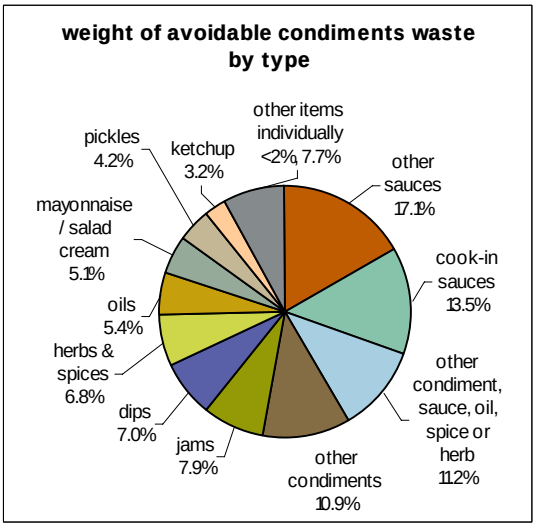
Condiment type	Weight of all condiments waste	Cost of all condiments waste	Weight (tonnes pa)	Cost (£ million pa)
All condiments waste	100% (2.4% of all food waste)	100% (4.9% of all food waste)	157,900	£710
Other sauces	15.4%	11.6%	24,300	£80
Cook-in sauces	12.2%	8.1%	19,200	£60
Herbs/spices	10.9%	44.2%	17,200	£310
Other oils, sauces, condiments, spices or herbs	10.6%	6.5%	16,700	£50
Other condiments or dressings	9.9%	7.1%	15,600	£50
Oils	9.3%	2.6%	14,700	£20
Jams	7.2%	3.0%	11,300	£20
Dips	6.4%	5.0%	10,000	£40
Mayonnaise/salad cream	4.6%	3.4%	7200	£20
Pickles	3.8%	2.0%	6000	£10
Ketchup	2.9%	1.5%	4500	£10
Gravy	1.6%	1.3%	2500	£10
Olives	1.6%	1.1%	2500	£10
Spreads (e.g. peanut butter, Nutella)	1.4%	1.1%	2300	£10
Honey	1.2%	1.1%	1900	£10
Sugar	0.8%	0.2%	1300	<£10
Salt	0.3%	0.0%	500	<£10

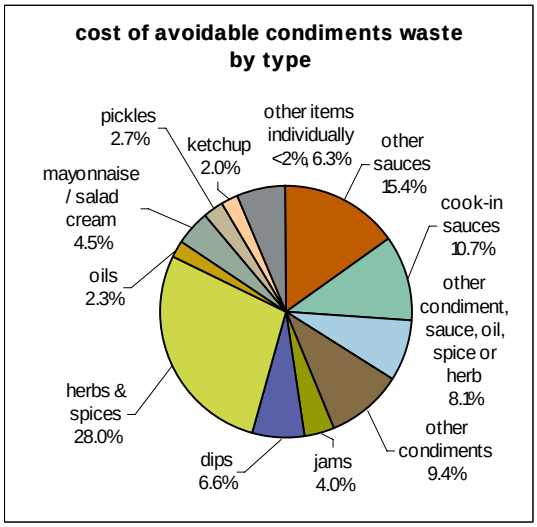
3.13.2 The weight and cost of avoidable condiments waste

Condiments waste accounts for 3.5% of the weight and 5.3% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).



Figures 69 and 70 How different types of food make up avoidable condiments waste





The above charts illustrate that of the avoidable condiments waste generated that could be categorised in the sorting process, more than a tenth (13.5%) of the weight is made up of cook-in sauces. In terms of cost, nearly

three tenths (28%) of avoidable condiments waste consists of herbs and spices and a tenth (10.7%) is attributable to cook-in sauces. The following table gives the proportions, annual tonnage and cost of each food type making up avoidable condiments waste, including those not labelled on the charts (items making up less than 2% of the weight or cost of avoidable condiments waste).

Table 48 The proportion and annual tonnage of avoidable condiments waste

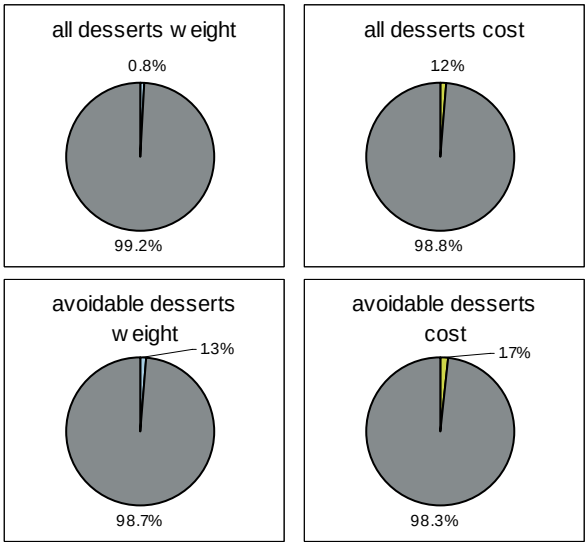
Condiment type	Weight of avoidable condiments waste	Cost of avoidable condiments waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable condiments waste	100% (3.5% of avoidable food waste)	100% (5.3% of avoidable food waste)	142,400	£540
Other sauces	17.1%	15.4%	24,300	£80
Cook-in sauces	13.5%	10.7%	19,200	£60
Other oils, sauces, condiments, spices or herbs	11.2%	8.1%	16,000	£40
Other condiments or dressings	10.9%	9.4%	15,600	£50
Jams	7.9%	4.0%	11,300	£20
Dips	7.0%	6.6%	10,000	£40
Herbs/spices	6.8%	28.0%	9700	£150
Oils	5.4%	2.3%	7700	£10
Mayonnaise/salad cream	5.1%	4.5%	7200	£20
Pickles	4.2%	2.7%	6000	£10
Ketchup	3.2%	2.0%	4500	£10
Gravy	1.8%	1.7%	2500	£10
Olives	1.7%	1.4%	2500	£10
Spreads (e.g. peanut butter, Nutella)	1.6%	1.4%	2200	£10
Honey	1.3%	1.5%	1900	£10
Sugar	0.9%	0.2%	1300	<£10
Salt	0.4%	0.0%	500	<£10

3.14 What types of desserts waste are we producing?

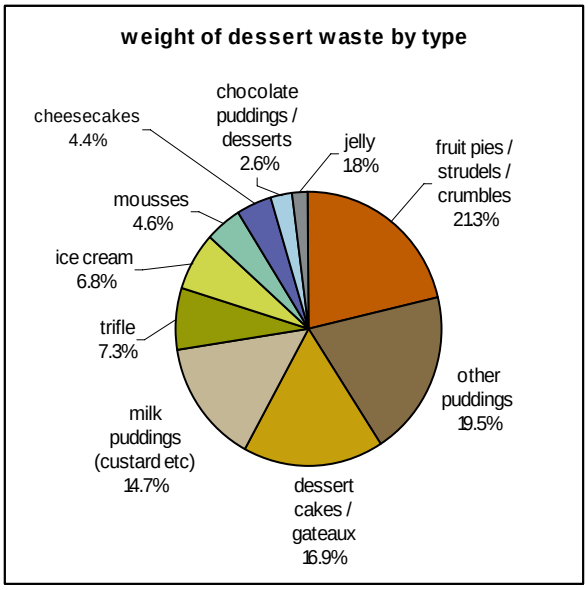
3.14.1 The weight and cost of all desserts waste

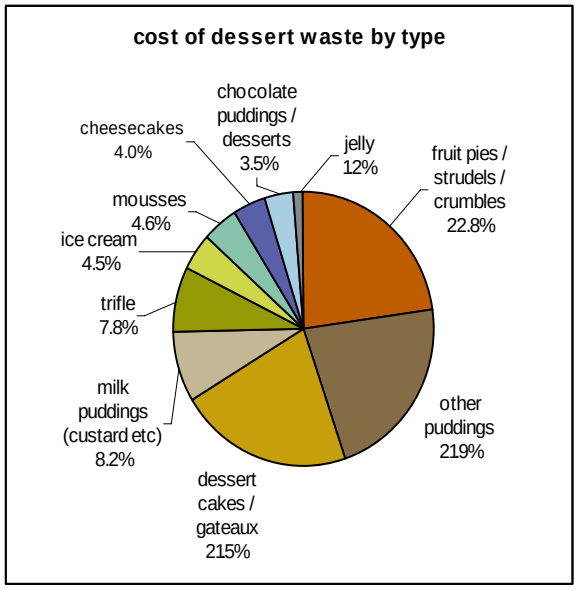
Desserts waste accounts for 0.8% of the weight and 1.2% of the cost of all food waste (avoidable, potentially avoidable and unavoidable).

All of the desserts waste is avoidable waste, in that it could have been eaten if it had not been left on the plate, spoilt or allowed to go past its best. Desserts waste accounts for 1.3% of the weight and 1.7% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).



Figures 71 and 72 How different types of food make up desserts waste





The above charts illustrate that of all the desserts waste arising that could be categorised during the sorting process, more than a fifth (21.3%) by weight is made up of fruit pies and crumbles and more than a tenth (14.7%) consists of milk-based puddings such as custard. In terms of cost, more than a fifth (22.8%) of desserts waste is attributable to fruit pies and crumbles and a slightly lower proportion (21.5%) to dessert cakes and gateaux. The following table gives the proportions, annual tonnage and cost of each food type making up all desserts waste.

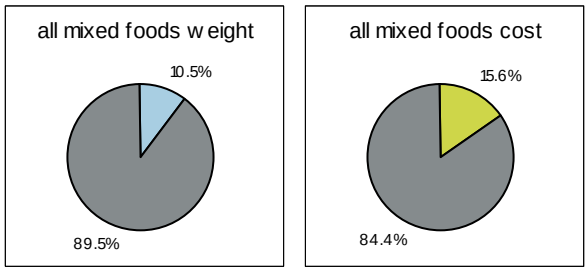
Table 49 The proportion and annual tonnage of all desserts waste

Dessert type	Weight of all desserts waste	Cost of all desserts waste	Weight (tonnes pa)	Cost (£ million pa)
All desserts waste	100% (0.8% of all food waste)	100% (1.2% of all food waste)	54,200	£170
Fruit pie/strudel/crumbles	21.3%	22.8%	11,500	£40
Other puddings[18]	19.5%	21.9%	10,600	£40
Dessert cakes/gateaux	16.9%	21.5%	9200	£40
Milk puddings (custard etc)	14.7%	8.2%	8000	£10
Trifles	7.3%	7.8%	4000	£10
Ice creams	6.8%	4.5%	3700	£10
Mousses	4.6%	4.6%	2500	£10
Cheesecakes	4.4%	4.0%	2400	£10
Chocolate puddings/desserts	2.6%	3.5%	1400	£10
Jellies	1.8%	1.2%	1000	<£10

[18] *E.g. ice lollies, fruit fools and trifles, bread and butter pudding.*

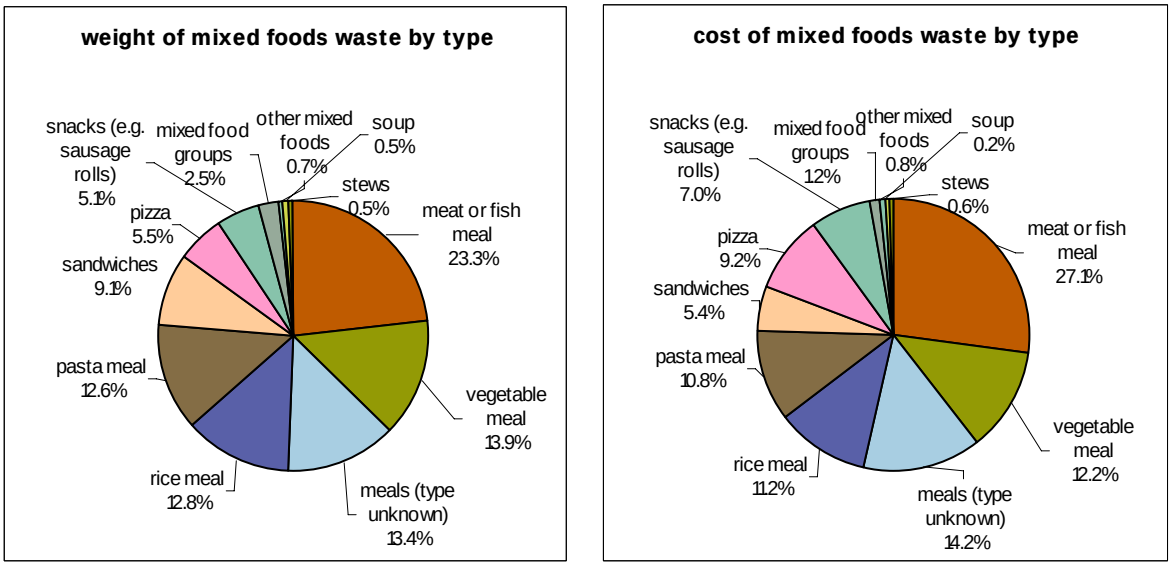
3.15 The proportion of food waste by type within the mixed foods group

3.15.1 The weight and cost of all mixed foods waste



Mixed foods waste accounts for 10.5% of the weight and 15.6% of the cost of all food waste (avoidable, potentially avoidable and unavoidable). The food waste analysed within this food group consists of items made up of different food groups, e.g. sausage rolls, shepherd's pie or pizza. These foods may have been cooked from scratch or purchased as a frozen or chilled ready meal or snack.

Figures 73 and 74 How different types of food make up all mixed foods waste



The above charts illustrate that of all the mixed foods waste arising, nearly a quarter (23.3%) by weight is made up of mixed meals incorporating meat or fish such as shepherd's pie or fish pie. More than a tenth (13.9%) is vegetable-based meals. In terms of cost, more than a quarter (27.1%) of mixed foods waste is attributable to mixed meals made with fish or meat. The table below gives the proportions, annual tonnage and cost of each food type making up all mixed foods waste.

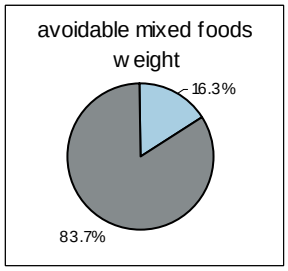
Table 50 The proportion and annual tonnage of all mixed foods waste

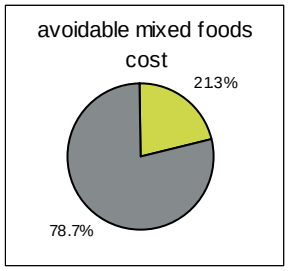
Mixed foods type	Weight of all mixed foods waste	Cost of all foods waste	Weight (tonnes pa)	Cost (£ million pa)
All mixed foods waste	100% (10.5% of all food waste)	100% (15.6% of all food waste)	705,100	£2250
Meat or fish meal	23.3%	27.1%	164,000	£610
Vegetable meal	13.9%	12.2%	98,100	£280
Meals (type unknown)	13.4%	14.2%	94,600	£320
Rice meal	12.8%	11.2%	90,500	£250
Pasta meal	12.6%	10.8%	89,000	£240
Sandwiches	9.1%	5.4%	64,000	£120
Pizza	5.5%	9.2%	38,500	£210
Snacks (e.g. sausage rolls)	5.1%	7.0%	36,200	£160

Mixed foods type	Weight of all mixed foods waste	Cost of all foods waste	Weight (tonnes pa)	Cost (£ million pa)
Mixed food groups	2.5%	1.2%	17,700	£30
Other mixed foods	0.7%	0.8%	5200	£20
Soup	0.5%	0.2%	3800	<£10
Stews	0.5%	0.6%	3600	£10

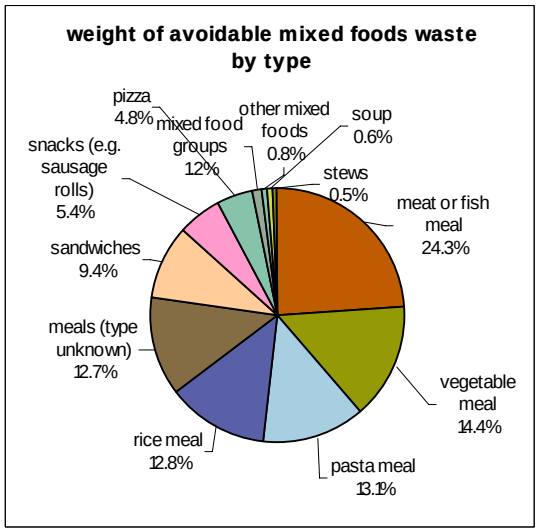
3.15.2 The weight and cost of avoidable mixed foods waste

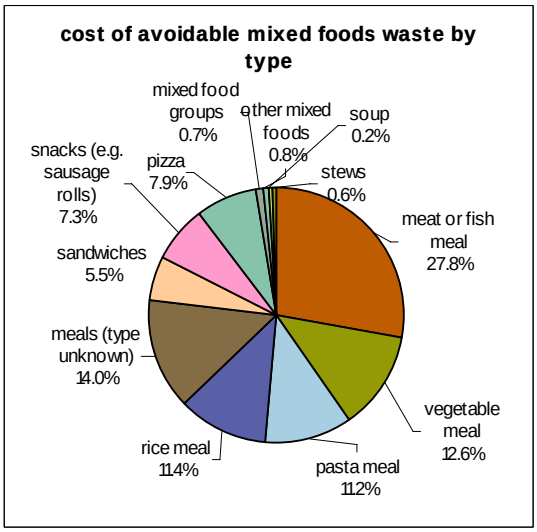
Mixed foods waste accounts for 16.3% of the weight and 21.3% of the cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 75 and 76 How different types of food make up avoidable mixed foods waste





The above charts illustrate that of the avoidable mixed foods waste generated, nearly a quarter (24.3%) by weight is made up of mixed meals incorporating meat or fish. More than a tenth (14.4%) consists of vegetable-based meals. In terms of cost, more than a quarter (27.8%) of avoidable mixed foods waste consists of mixed meals made with meat or fish. The table below gives the proportions, annual tonnage and cost of each food type making up avoidable mixed foods waste.

Table 51 The proportion and annual tonnage of avoidable mixed foods waste

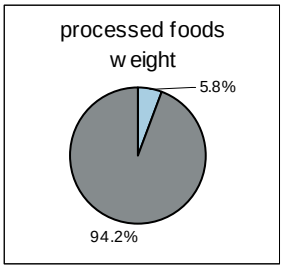
Mixed foods type	Weight of avoidable mixed foods waste	Cost of avoidable mixed foods waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable mixed meals waste	100% (16.3% of avoidable food waste)	100% (21.3% of avoidable food waste)	666,300	£2170
Meat or fish meal	24.3%	27.8%	161,800	£602
Vegetable meal	14.4%	12.6%	95,900	£272
Pasta meal	13.1%	11.2%	87,100	£242
Rice meal	12.8%	11.4%	85,000	£247
Meals (type unknown)	12.7%	14.0%	84,800	£302
Sandwiches	9.4%	5.5%	62,900	£120
Snacks (e.g. sausage rolls)	5.4%	7.3%	36,200	£159
Pizza	4.8%	7.9%	31,900	£170
Mixed food groups	1.2%	0.7%	8300	£15
Other mixed foods	0.8%	0.8%	5000	£18
Soup	0.6%	0.2%	3800	<£10
Stews	0.5%	0.6%	3500	£13

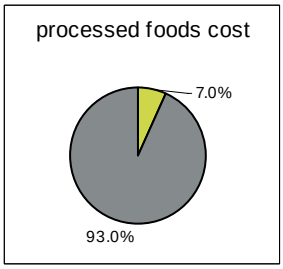
3.16 Convenience and processed foods

This section provides information on the financial cost and weight of avoidable convenience and processed foods that are wasted. Processed foods include foods that are bought tinned, preserved or pickled and items such as sliced meats, cheese strings and chicken nuggets. Convenience foods include foods such as takeaways, pizzas, burgers, chips and sausages. The two classifications are not mutually exclusive as there are some food items that are both processed and convenience (e.g. burgers). Ready meals are included in this analysis along with other convenience foods, but because of the difficulty in identifying them in the waste in the analysis process unless in their containers, the amounts quoted are likely to be underestimates.

3.17 Avoidable processed foods waste

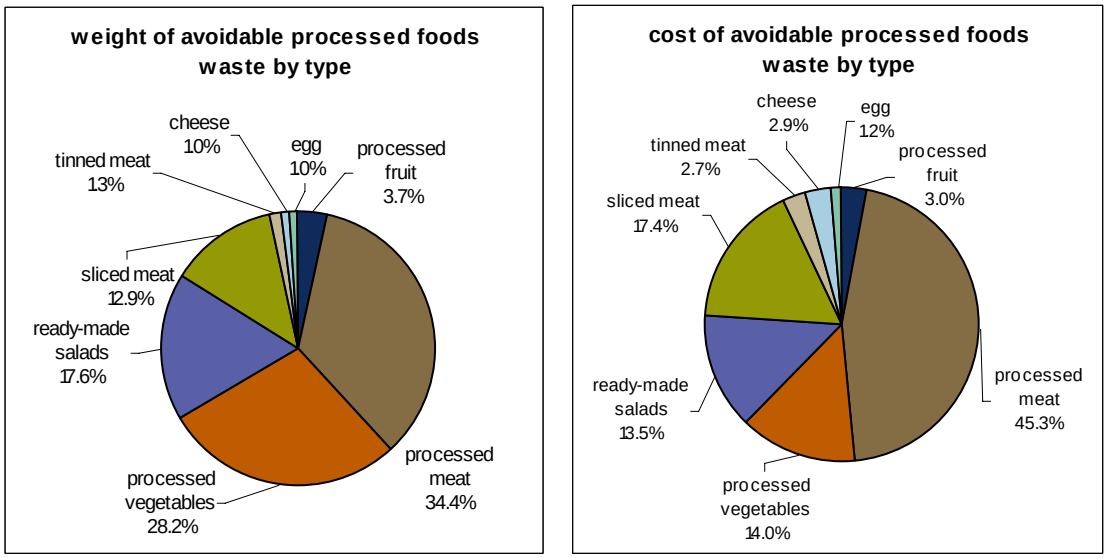
Of all the avoidable food waste that is thrown away, a twentieth (5.8%) of it by weight is made up of processed food items. In terms of cost more than a twentieth (7%) of avoidable food waste is processed food.





3.17.1 The weight and cost of avoidable processed foods by type

Figures 77 and 78 How different types of food make up processed foods waste



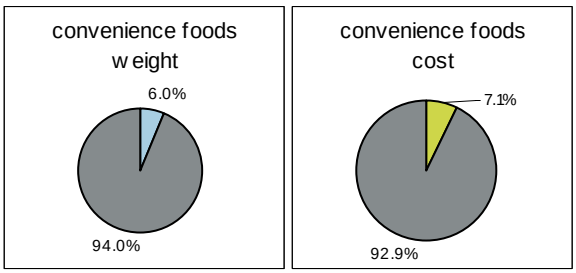
The above charts illustrate the proportion of the weight and cost of all avoidable processed foods waste thrown away by types of food. In terms of weight more than a third (34.4%) of the avoidable processed foods waste consists of processed meat products and less than three tenths (28.2%) is processed vegetables. By cost, nearly half (45.3%) consists of processed meats and more than a tenth is made up of processed vegetables (14%) and readymade salads such as coleslaws (13.5%).

Table 52 The proportion and annual tonnage of avoidable processed foods

Mixed foods type	Weight of avoidable processed foods	Cost of avoidable processed foods	Weight (tonnes pa)	Cost (£ million pa)
Avoidable processed foods	100% (5.8% of avoidable food waste)	100% (7% of avoidable food waste)	237,100	£712,810
Processed fruit	3.7%	3.0%	8700	£21,030
Processed meat	34.4%	45.3%	81,600	£323,190
Processed vegetables	28.2%	14.0%	66,800	£99,630
Readymade salads	17.6%	13.5%	41,800	£95,910
Sliced meat	12.9%	17.4%	30,500	£124,320
Tinned meat	1.3%	2.7%	3000	£19,480
Processed cheese	1.0%	2.9%	2400	£20,360
Processed egg	1.0%	1.2%	2300	£8890

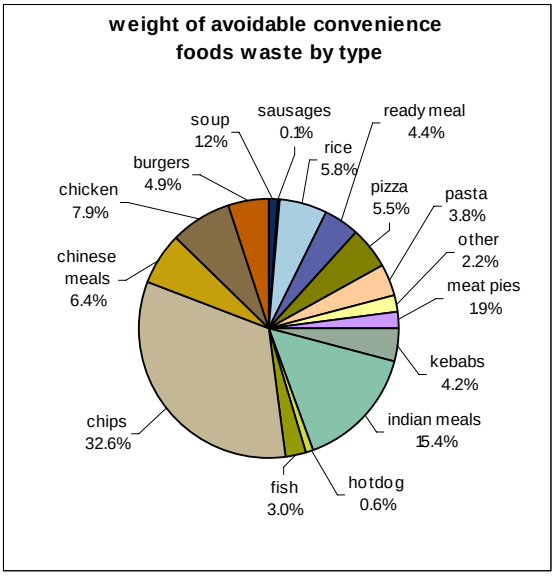
3.18 Avoidable convenience and snack foods waste

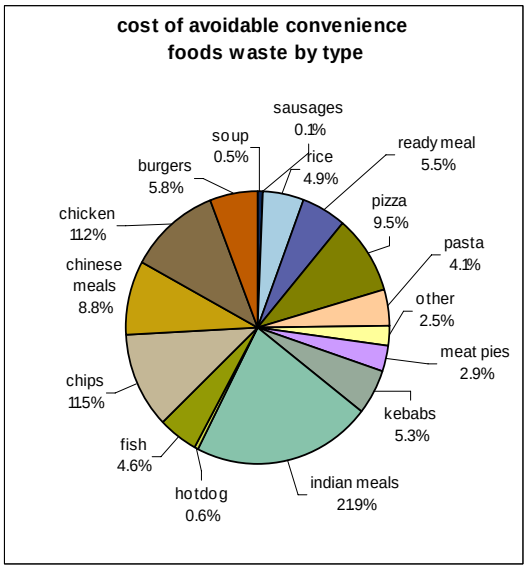
Of all the avoidable food waste that is thrown away, more than a twentieth (6%) of it by weight is made up of convenience food items such as pizzas, burgers and chips. In terms of cost less than a tenth (7.1%) of avoidable food waste is convenience food.



3.18.1 The weight and cost of avoidable convenience foods by type

Figures 79 and 80 How different types of food make up convenience foods waste





The above charts illustrate the proportion of the weight and cost of all avoidable convenience foods waste thrown away by types of food. In terms of weight nearly a third (32.6%) of the avoidable convenience foods waste consists of chips and more than a tenth (15.4%) is made up of Indian meals that were bought from a restaurant or shop.

In terms of cost, Indian meals account for more than a fifth (21.9%) of the avoidable convenience foods waste. A tenth of the cost of avoidable convenience foods consists of chips (11.5%) and chicken items such as fried chicken (11.2%).

Table 53 The proportion and annual tonnage of avoidable convenience foods

Mixed foods type	Weight of avoidable convenience foods	Cost of avoidable convenience foods	Weight (tonnes pa)	Cost (£ million pa)
Avoidable convenience foods	100% (6% of avoidable food waste)	100% (7.1% of avoidable food waste)	245,300	£722,990
Soup	1.2%	0.5%	3000	£3510
Sausages	0.1%	0.1%	300	£980
Rice	5.8%	4.9%	14,300	£35,650
Ready meals	4.4%	5.5%	10,700	£39,980
Pizza	5.5%	9.5%	13,400	£68,990
Pasta	3.8%	4.1%	9400	£29,850
Other	2.2%	2.5%	5400	£18,100
Meat pies	1.9%	2.9%	4600	£21,310
Kebabs	4.2%	5.3%	10,300	£38,670
Indian meals	15.4%	21.9%	37,900	£158,380
Hotdogs	0.6%	0.6%	1600	£4270
Fish	3.0%	4.6%	7300	£33,490
Chips	32.6%	11.5%	80,000	£83,270
Chinese meals	6.4%	8.8%	15,700	£63,520
Chicken	7.9%	11.2%	19,300	£80,840
Burgers	4.9%	5.8%	12,100	£42,170

3.19 Estimated annual weight and cost of the 'top' 50 foods thrown away that could have been eaten

The following tables summarise the results of the previous analyses (Sections 3.3 to 3.18) to show the annual weights and associated costs of the 50 most wasted foods that are thrown away by households in the UK. This analysis is for avoidable waste, i.e. food items that could have been eaten if they had been better stored or managed. It should be noted that the foods may be disposed of whole or partially eaten and they may be cooked or uncooked. For example, potatoes will include those that have been chipped, baked or otherwise cooked at home, as well as those thrown away raw.

Table 54 The weight (tonnes per annum) of the top 50 foods thrown away that could have been eaten

	Type of avoidable food waste	Weight (tonnes pa)
1	Potatoes	358,500
2	Bread slices (single slices)	327,900
3	Apples	189,900
4	Meat or fish mixed meals	161,800
5	World breads (e.g. naan, tortilla)[19]	101,800
6	Vegetable-based mixed meals	95,900
7	Pasta mixed meals	87,100
8	Bread rolls/baguettes	85,800
9	Rice mixed meals	85,000
10	Mixed meals[20]	84,800
11	Bananas	84,100
12	Bread loaves (whole)	75,200
13	Yoghurts/yoghurt drinks	67,300
14	Sandwiches	63,000
15	Cakes	61,500
16	Lettuces	61,300
17	Tomatoes	61,300
18	Cabbages	56,300
19	Cooked rice	55,300
20	Mixed vegetables (not separately identifiable)	52,500
21	Oranges	51,300
22	Carrots	46,300
23	Onions	43,100
24	Pears	42,400
25	Sodas	42,000
26	Milk	40,200
27	Cheese	39,900
28	Mixed salads	37,000
29	Cooked pasta	36,200
30	Mixed snacks	36,200
31	Melons	34,900
32	Coleslaws	33,300
33	Chicken portions	32,400
34	Pizzas	31,900

[19] Although White British households throw away nearly six tenths of these breads, there may be some overstating due to the slight over-representation of Asian families in the sample.

[20] This mostly consists of mixed meals which were not defined as being vegetable or meat-based (e.g. curry) that are cooked inside or outside of the home (takeaway). Further information can be found in Section 3.16.

	Type of avoidable food waste	Weight (tonnes pa)
35	Cucumbers	31,600
36	Chocolate/sweets	30,700
37	Sweetcorn/corn on the cob	30,200
38	Sausages	29,800
39	Pork portions	28,800
40	Biscuits/crackers/crisp breads	27,300
41	Water	26,600
42	Beans (excluding baked beans)	26,400
43	Grapes	22,300
44	Ham	21,800
45	Plums	20,400
46	Squash/cordials	20,000
47	Breakfast cereals	19,700
48	Cook-in sauces	19,200
49	Fruit juices	19,100
50	Eggs	18,800

Table 55 The cost (£ million per annum) of the top 50 foods thrown away that could have been eaten

	Type of avoidable food waste	Cost (£ million pa)
1	Meat or fish mixed meals	£600
2	World breads (e.g. naan, tortilla)	£390
3	Bread slices	£360
4	Apples	£320
5	Potatoes	£300
6	Mixed meals	£300
7	Vegetable mixed meals	£270
8	Cheese	£250
9	Rice mixed meals	£250
10	Pasta mixed meals	£240
11	Cakes	£190
12	Pizzas	£170
13	Yoghurts/yoghurt drinks	£170
14	Mixed snacks	£160
15	Mixed salads	£160
16	Herbs/spices	£150
17	Pork portions	£140
18	Chocolate/sweets	£140
19	Cooked rice	£140
20	Fish	£140
21	Bread rolls/baguettes	£130
22	Pheasants	£130
23	Tomatoes	£120
24	Sandwiches	£120
25	Chicken portions	£120
26	Beef portions	£110
27	Sausages	£110
28	Bananas	£100
29	Chicken breasts	£100
30	Bacon	£100
31	Ham	£90
32	Beans (excluding baked beans)	£80

	Type of avoidable food waste	Cost (£ million pa)
33	Bread loaves	£80
34	Coleslaws	£80
35	Crisps	£80
36	Cooked pasta	£80
37	Biscuits/crackers/crisp breads	£80
38	Oranges	£80
39	Cabbages	£80
40	Plums	£70
41	Pears	£70
42	Sandwich spreads	£70
43	Melons	£70
44	Sodas	£70
45	Breakfast cereals	£70
46	Cucumbers	£70
47	Lettuces	£60
48	Mixed vegetables	£60
49	Strawberries	£60
50	Peaches	£60

3.20 Summary of chapter

This chapter has provided information on the weight and cost of all food waste and, separately, food waste that could have been avoided if it had been stored or managed better. Information on food waste that is unavoidable is of interest because, although it cannot be eaten, there are disposal methods that could be used that are less harmful than landfill (e.g. home composting or use of separate food waste collections if available). However, WRAP's campaign *Love Food Hate Waste* is aimed at educating the public on how best to minimise food waste that could have been avoided and it is clear that the results of this project and other research undertaken by WRAP indicate that avoidable food waste is a significant problem.

The analysis within this chapter shows that bakery items, vegetables and mixed foods (such as pizzas, shepherd's pie and lasagne) make up more than half of the weight of all avoidable food waste. This waste equates to 2.2 million tonnes of food thrown away each year within the UK. It should be remembered that the figures that relate to these foods do not include crusts or soft vegetable peelings and therefore it seems that they are being thrown away because of over-serving, over-cooking, poor storage or changes to householders' plans.

The two most significantly wasted foods that could have been eaten are potatoes (including those thrown away whole, partially eaten, cooked and raw) and bread slices. These two food types account for nearly a fifth of all avoidable waste (over 359,000 and 328,000 tonnes a year respectively). Apples (including those thrown away whole, partially eaten, cooked and raw) are the next largest contributor to avoidable food waste, making up more than 190,000 tonnes a year.

4 The average weight and cost of food waste by preparation state

4.1 Introduction

When the compositional analysis team sorted and weighed the food waste collected from the participating households, they recorded the 'preparation state' of the food on the sheet together with the other information. The preparation state categories define whether the food had been prepared prior to purchase to be cooked at home, was ready to eat, had been cooked or prepared at home or was in its natural (raw or fresh) state. In some instances the sorter had to make a judgement regarding the look of the food in order to determine to which category it belonged. It should be noted that a record of whether or not food had been frozen prior to disposal was not captured; food that was purchased frozen would have had to be thrown away in packaging that stated it must be kept frozen and food waste that had been bought fresh or chilled and was then subsequently frozen could not have been so identified. An explanation of the different categories of preparation state is given in the table below, and further examples can be found in Appendix A.

Table 56 Examples of foods within different preparation state categories

Preparation state	Examples
Fresh, raw or minimally processed	Foods bought in a raw or natural state, for example an apple or a whole lettuce. Some would normally require preparation but in this category they have been disposed of unprepared, for example raw potato or aubergine. This category also includes foods that are minimally processed, a technical term used in the food industry to cover items such as raw meat or fish and bread. For drinks, this category is 'undiluted or unused'.
Ready to consume when purchased	This category consists of processed foods bought in a ready-to-consume state, for example cooked meats, processed fruit and vegetables, snacks, confectionery and cold drinks.
Cooked or prepared at home	Food that, as far as can be established during the sorting process, has been prepared at home. For example, meals cooked from scratch, chopped lettuce leaves, potato peelings, partially-consumed apple.
Pre-prepared and cooked at home	Frozen or chilled foods (like pizza) that are bought prepared but must be cooked in the home before being eaten. This category of wasted food has been disposed of cooked.
Cooked	Cooked foods that can not be identified during the sort process as having been cooked at home or by the manufacturer or retailer.
Pre-prepared but not cooked at home	Frozen or chilled foods (like pizza) that are bought prepared but must be cooked in the home before being eaten. This category of waste has been disposed of uncooked.
Tinned	Baked beans, fruits in syrup. Where foods were not in their tin during the sort process, they were classified as tinned if they looked liked tinned food. This applies mostly to loose baked beans and spaghetti hoops and may lead to some under-reporting for some food types.
Unknown	Not possible to determine the preparation state during the sort analysis.

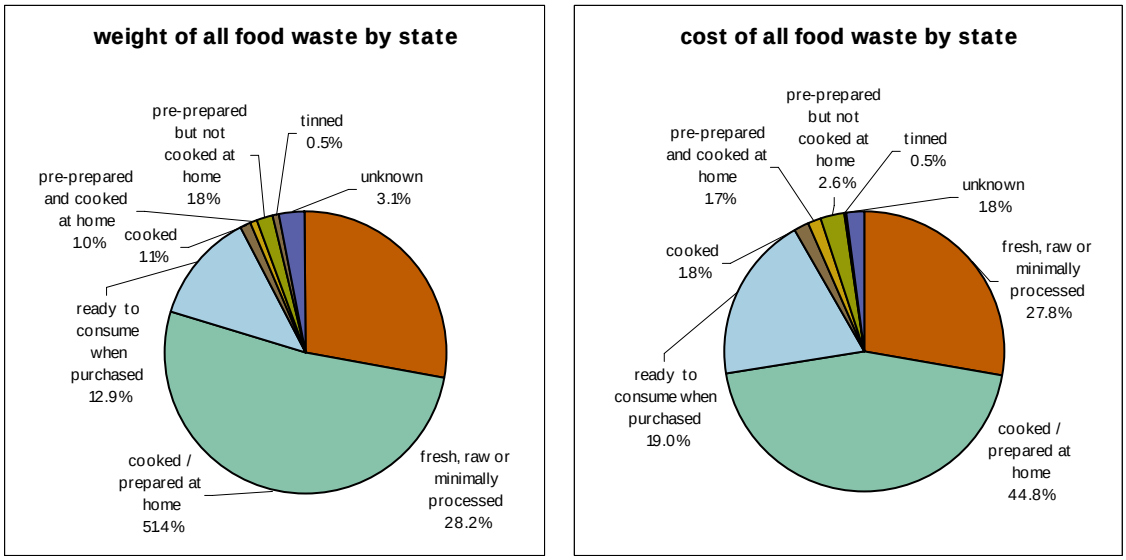
This chapter provides information on the cost and weight of food waste according to the preparation state of the food item. Where a type of food waste contributes significantly to the weight or cost of avoidable food waste, a separate analysis is also provided. Avoidable food waste is food that could 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.

4.2 In what state of preparation is food waste?

This section first sets out the preparation state for all food waste, including the unavoidable fraction (peelings, bones etc). It moves on to look at the avoidable food waste and then goes item by item through the various food categories summarising both all food and just the avoidable fraction.

4.2.1 The weight and cost of all food waste

Figures 81 and 82 The weight and cost of all food waste by preparation state



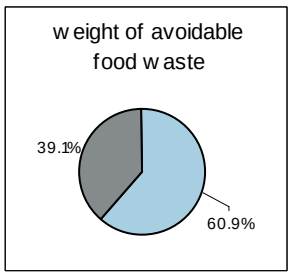
The above charts illustrate that of all food waste arising, more than half (51.4%) of the weight is food that is prepared or cooked at home. More than a quarter (28.2%) is food that is in a natural or raw state and more than a tenth (12.9%) is ready to consume when purchased. In terms of cost, more than four tenths (44.8%) of all food waste is attributable to food items that are prepared or cooked at home and nearly three tenths (27.8%) to food that is thrown away in its natural or uncooked state. Nearly a fifth (19%) of the cost of food thrown away consists of items that are ready to eat when purchased. The table below gives the proportions and annual tonnage of all food waste by preparation state.

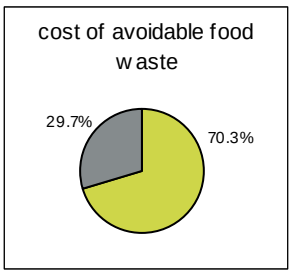
Table 57 The proportion and annual tonnage and cost of all food waste by preparation state

Preparation state	Proportion of all food waste weight	Proportion of all food waste cost	Weight (tonnes pa)	Cost (£ million pa)
Cooked/prepared at home	51.4%	44.8%	3,446,700	£6480
Fresh, raw or minimally processed	28.2%	27.8%	1,888,000	£4020
Ready to consume when purchased	12.9%	19.0%	863,300	£2760
Unknown	3.1%	1.8%	209,100	£270
Pre-prepared but not cooked at home	1.8%	2.6%	119,200	£380
Cooked	1.1%	1.8%	73,100	£260
Pre-prepared and cooked at home	1.0%	1.7%	64,100	£240
Tinned	0.5%	0.5%	36,700	£70

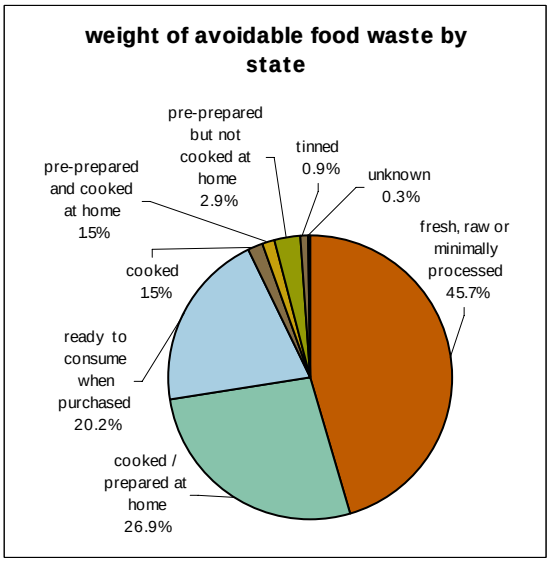
4.2.2 *The weight and cost of avoidable food waste*

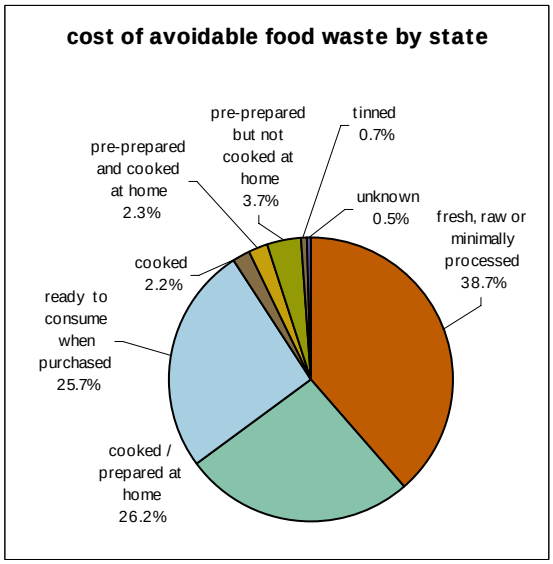
Avoidable food waste (food which could have been eaten if managed or stored better) makes up six tenths (60.9%) of the weight of all food waste and seven tenths (70.3%) of the cost of all food waste.





Figures 83 and 84 The weight and cost of avoidable food waste by preparation state





The above charts illustrate that of the avoidable food waste generated, more than four tenths (45.7%) of the weight is made up of food items in a natural or raw state and more than a quarter (26.9%) is prepared or cooked at home. In terms of cost, nearly four tenths (38.7%) is food in a natural or uncooked state and more than a quarter is prepared or cooked within the home (26.2%) or is ready to eat when bought (25.7%).

The table below gives the proportions and estimated UK annual tonnage and cost of avoidable food waste by preparation state.

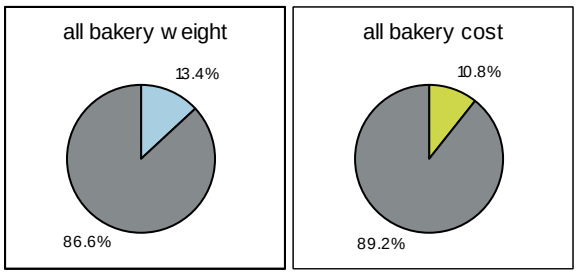
Table 58 The proportion and annual tonnage and cost of avoidable food waste by preparation state

Preparation state	Weight of avoidable food waste	Cost of avoidable food waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable food waste	100% (60.9% of all food waste)	100% (70.3% of all food waste)	4,080,400	£10,180
Fresh, raw or minimally processed	45.7%	38.7%	1,864,300	£3940
Cooked/prepared at home	26.9%	26.2%	1,096,600	£2670
Ready to consume when purchased	20.2%	25.7%	824,900	£2620
Pre-prepared but not cooked at home	2.9%	3.7%	118,700	£380
Cooked	1.5%	2.2%	63,100	£220
Pre-prepared and cooked at home	1.5%	2.3%	61,900	£230
Tinned	0.9%	0.7%	36,700	£70
Unknown	0.3%	0.5%	14,100	£50

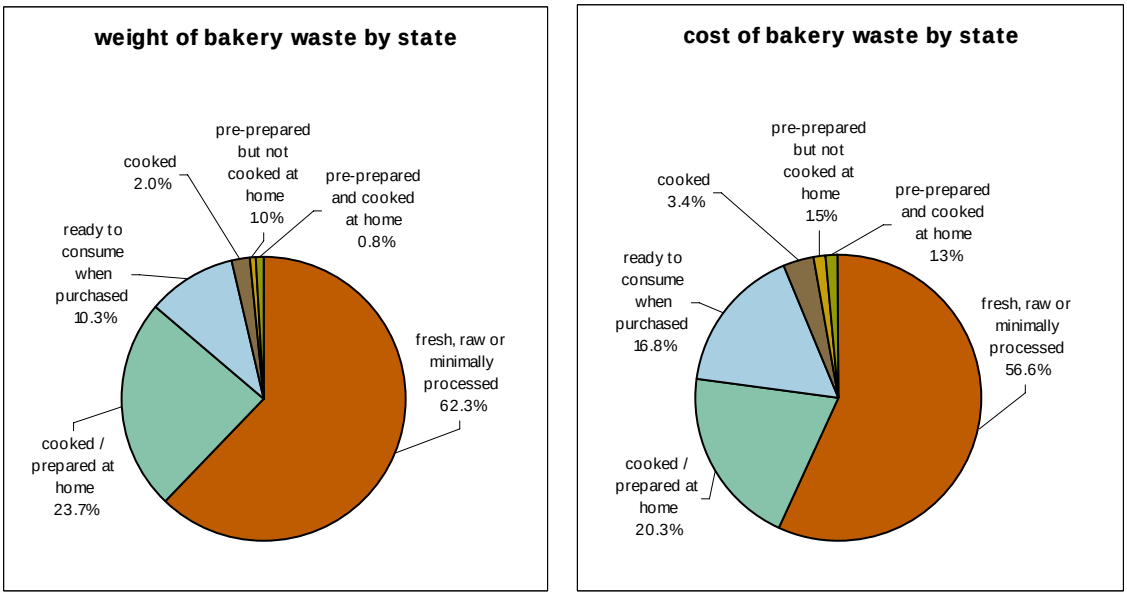
4.3 In what preparation state is bakery waste?

4.3.1 The weight and cost of all bakery waste

Bakery waste accounts for 13.4% and 10.8% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable).



Figures 85 and 86 The weight and cost of all bakery waste by preparation state



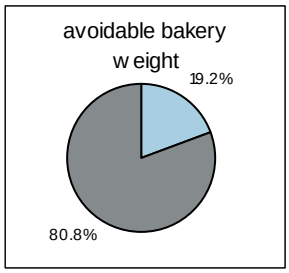
The above charts illustrate that of all the bakery food waste arising, more than six tenths (62.3%) of the weight is made up of bakery foods that were not prepared in any way at home (this includes simple bakery products such as bread which have not been toasted, for example). Just under a quarter (23.7%) is bakery foods that are prepared or cooked within the home. In terms of cost, nearly six tenths (56.6%) of bakery waste is attributable to items that are in their natural bought state (not prepared or cooked at home) and a fifth (20.3%) is prepared or cooked within the home. The table below gives the proportions and UK annual tonnage and cost of all bakery waste by preparation state.

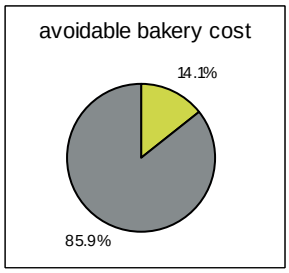
Table 59 The proportion and annual tonnage and cost of all bakery waste by preparation state

Preparation state	Weight of all bakery waste	Cost of all bakery waste	Weight (tonnes pa)	Cost (£ million pa)
All bakery waste	100% (13.4% of all waste)	100% (10.8% of all waste)	896,800	£1560
Fresh, raw or minimally processed	62.3%	56.6%	559,000	£880
Cooked/prepared at home	23.7%	20.3%	212,300	£320
Ready to consume when purchased	10.3%	16.8%	92,500	£260
Cooked	2.0%	3.4%	17,500	£50
Pre-prepared but not cooked at home	1.0%	1.5%	8500	£20
Pre-prepared and cooked at home	0.8%	1.3%	7000	£20

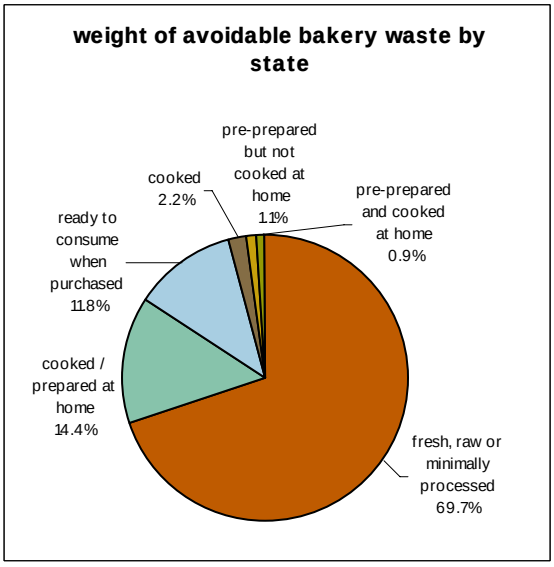
4.3.2 *The weight and cost of avoidable bakery waste*

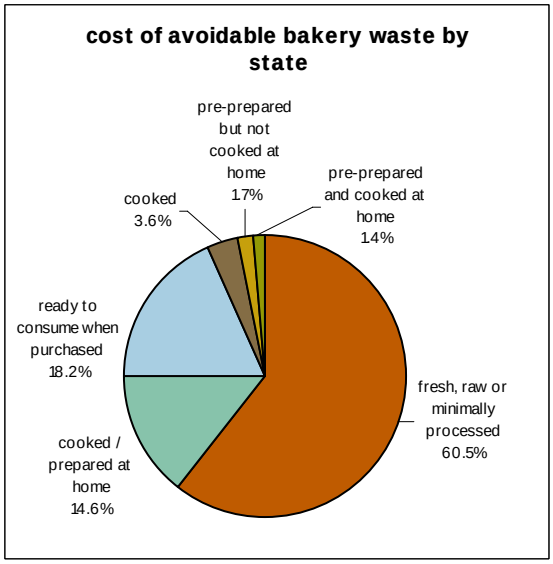
Bakery waste accounts for 19.2% and 14.1% of the weight and cost of avoidable food waste (food which could have been eaten if managed or stored better).





Figures 87 and 88 The weight and cost of avoidable bakery waste by preparation state





The above charts illustrate that of the avoidable bakery waste generated, seven tenths (69.7%) of the weight is made up of items that are in their natural bought state. More than a tenth (14.4%) is made up of bakery items that are prepared or cooked within the home. In terms of cost, six tenths (60.5%) of avoidable food waste is attributable to bakery items that are in their natural state. Nearly a fifth (18.2%) of the cost of avoidable bakery waste consists of items that are ready to eat when purchased. The table below gives the proportions and UK annual tonnage and cost of avoidable bakery waste by preparation state.

Table 60 The proportion and annual tonnage and cost of avoidable bakery waste by preparation state

Preparation state	Weight of avoidable bakery waste	Cost of avoidable bakery waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable bakery waste	100% (19.2% of avoidable food waste)	100% (14.1% of avoidable food waste)	782,400	£1430
Fresh, raw or minimally processed	69.7%	60.5%	545,600	£870
Cooked/prepared at home	14.4%	14.6%	112,400	£210
Ready to consume when purchased	11.8%	18.2%	92,100	£260
Cooked	2.2%	3.6%	17,000	£50
Pre-prepared but not cooked at home	1.1%	1.7%	8500	£20
Pre-prepared and cooked at home	0.9%	1.4%	6800	£20

4.3.3 The weight and cost of key avoidable bakery foods waste

This section examines in more detail the proportions and estimated UK annual weight and cost of the main avoidable bakery foods which are:

- bread slices (41.9% of the avoidable bakery waste by weight and 25.1% by cost);
- bread rolls and baguettes (11% of the avoidable bakery waste by weight and 9.4% by cost); and
- loaves of bread (9.6% of the avoidable bakery waste by weight and 5.8% by cost).

Table 61 The proportion and annual tonnage and cost of avoidable bread slices waste by preparation state

Preparation state	Weight of avoidable bread slices waste	Cost of avoidable bread slices waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable bread slices waste	100% (41.9% of avoidable bakery waste)	100% (25.1% of avoidable bakery waste)	327,900	£360
Fresh, raw or minimally processed	91.2%	91.3%	299,100	£330
Cooked/prepared at home	8.6%	8.5%	28,200	£30
Pre-prepared and cooked at home	0.1%	0.1%	500	<£10
Cooked	<0.1%	<0.1%	100	<£10
Ready to consume when purchased	<0.1%	<0.1%	<100	<£10

Table 62 The proportion and annual tonnage and cost of avoidable bread rolls and baguettes waste by preparation state

Preparation state	Weight of avoidable bread rolls waste	Cost of avoidable bread rolls waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable bread rolls/baguettes waste	100% (11% of avoidable bakery waste)	100% (9.4% of avoidable bakery waste)	85,800	£130
Fresh, raw or minimally processed	92.4%	91.6%	79,300	£120
Cooked/prepared at home	5.6%	6.1%	4800	£10
Pre-prepared and cooked at home	1.1%	1.4%	900	<£10
Pre-prepared but not cooked at home	0.9%	0.9%	800	<£10
Ready to consume when purchased	0.1%	0.1%	<100	<£10

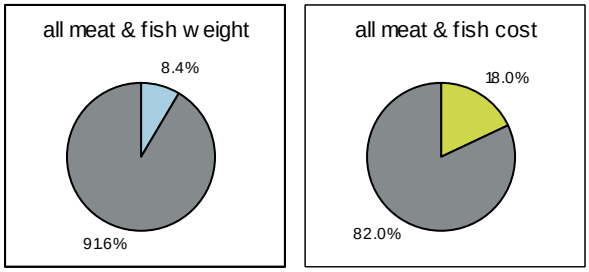
Table 63 The proportion and annual tonnage and cost of avoidable bread loaves waste by preparation state

Preparation state	Weight of avoidable bread loaves waste	Cost of avoidable bread loaves waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable bread loaves waste	100% (9.6% of avoidable bakery waste)	100% (5.8% of avoidable bakery waste)	75,200	£80
Fresh, raw or minimally processed	100%	100%	75,200	£80

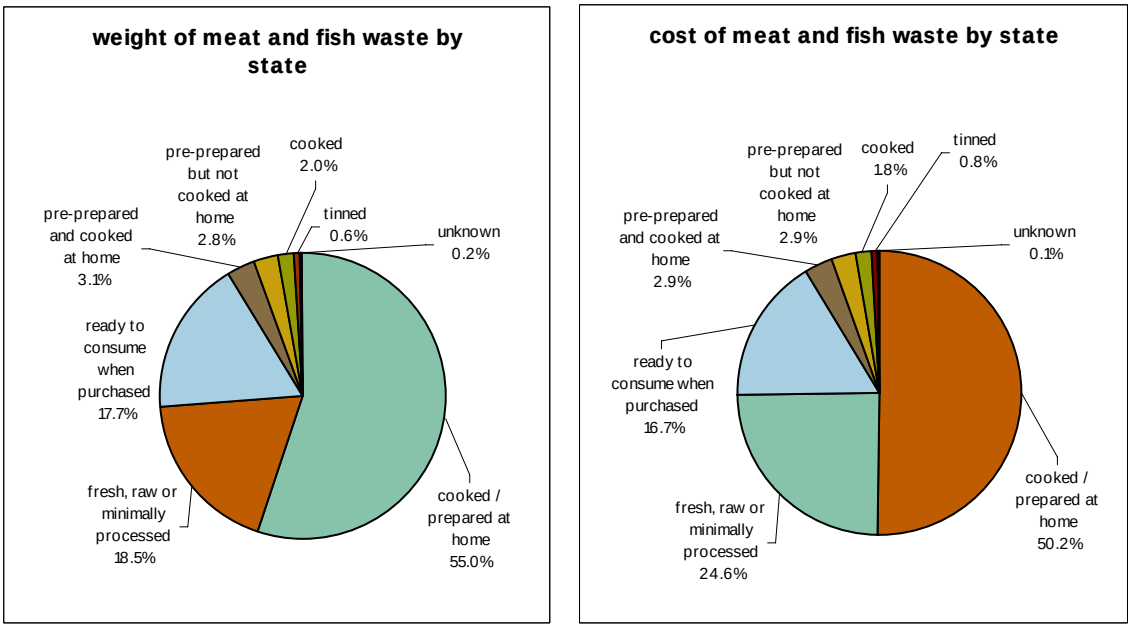
4.4 In what preparation state is meat and fish waste?

4.4.1 The weight and cost of all meat and fish waste

Meat and fish waste accounts for 8.4% and 18% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable).



Figures 89 and 90 The weight and cost of all meat and fish waste by preparation state



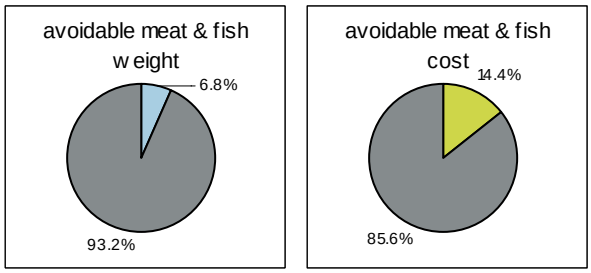
The above charts illustrate that of all the meat and fish food waste arising, more than half by weight (55%) is foods that are prepared or cooked in the home. Nearly a fifth (18.5%) is meat and fish in a raw, uncooked state. In terms of cost, half (50.2%) is attributable to items that are cooked or prepared at home and a further quarter (24.6%) is thrown away in a raw, uncooked state. The table below gives the proportions and UK annual tonnage and cost of all meat and fish waste by preparation state.

Table 64 The proportion and annual tonnage and cost of all meat and fish waste by preparation state

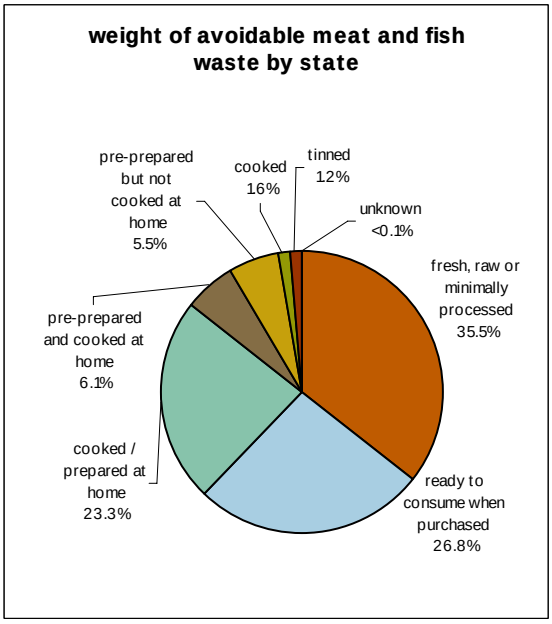
Preparation state	Weight of all meat and fish waste	Cost of all meat and fish waste	Weight (tonnes pa)	Cost (£ million pa)
All meat and fish waste	100% (8.4% of all waste)	100% (18% of all waste)	560,100	£2610
Cooked/prepared at home	55.0%	50.2%	308,100	£1310
Fresh, raw or minimally processed	18.5%	24.6%	103,800	£640
Ready to consume when purchased	17.7%	16.7%	99,400	£440
Pre-prepared and cooked at home	3.1%	2.9%	17,500	£70
Pre-prepared but not cooked at home	2.8%	2.9%	15,600	£80
Cooked	2.0%	1.8%	10,900	£50
Tinned	0.6%	0.8%	3400	£20
Other	0.2%	0.1%	1400	<£10

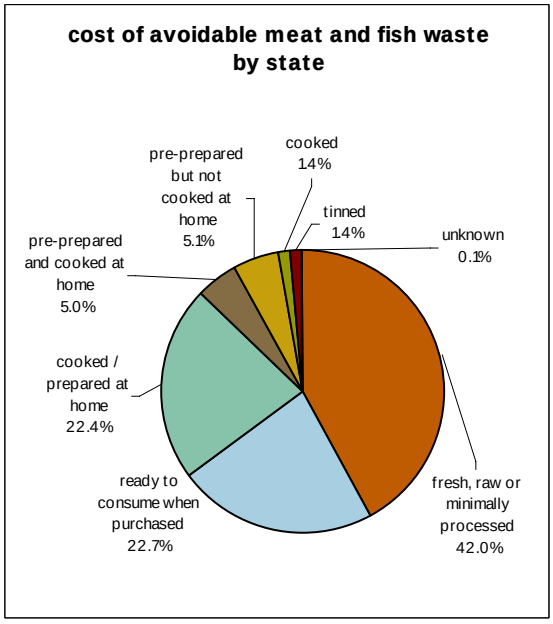
4.4.2 *The weight and cost of avoidable meat and fish waste*

Meat and fish waste accounts for 6.8% and 14.4% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).



Figures 91 and 92 The weight and cost of avoidable meat and fish waste by preparation state





The above charts illustrate that of the avoidable meat and fish waste generated, just over a third by weight (35.5%) is uncooked and more than a quarter (26.8%) is ready to consume when bought. In terms of cost, more than four tenths (42%) of avoidable meat and fish waste is thrown away uncooked. More than a fifth of the cost of the avoidable waste is attributable to meat and fish that is ready to eat when bought (22.7%) or cooked at home (22.4%). The table below gives the proportions and UK annual tonnage and cost of avoidable meat and fish waste by preparation state.

Table 65 The proportion and annual tonnage of avoidable meat and fish waste by preparation state

Preparation state	Weight of avoidable meat and fish waste	Cost of avoidable meat and fish waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable meat and fish waste	100% (6.8% of avoidable food waste)	100% (14.4% of avoidable food waste)	278,800	£1470
Fresh, raw or minimally processed	35.5%	42.0%	99,000	£620
Ready to consume when purchased	26.8%	22.7%	74,700	£330
Cooked/prepared at home	23.3%	22.4%	65,000	£330
Pre-prepared and cooked at home	6.1%	5.0%	17,000	£70
Pre-prepared but not cooked at home	5.5%	5.1%	15,200	£70
Cooked	1.6%	1.4%	4400	£20
Tinned	1.2%	1.4%	3400	£20
Other	<0.1%	0.1%	100	<£10

4.4.3 The weight and cost of key avoidable meat and fish waste

This section examines in more detail the proportions and estimated UK annual weight and cost of the main avoidable meat and fish items which are:

- chicken portions, such as chicken breasts, thighs or drumsticks (11.6% of the avoidable meat and fish waste by weight and 8.1% by cost);
- sausages (10.7% of the avoidable meat and fish waste by weight and 7.2% by cost); and
- pork portions, such as pork chops or spare ribs (10.3% of the avoidable meat and fish waste by weight and 9.7% by cost).

Table 66 The proportion and annual tonnage and cost of avoidable chicken portions waste by preparation state

Preparation state	Weight of avoidable chicken portions waste	Cost of avoidable chicken portions waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable chicken portions waste	100% (11.6% of avoidable meat and fish waste)	100% (8.1% of avoidable meat and fish waste)	32,400	£120
Cooked/prepared at home	43.4%	44.2%	14,100	£50
Ready to consume when purchased	26.4%	26.2%	8600	£30
Fresh, raw or minimally processed	24.0%	23.8%	7800	£30
Pre-prepared but not cooked at home	2.5%	2.4%	800	<£10
Cooked	2.2%	2.1%	700	<£10
Pre-prepared and cooked at home	1.4%	1.3%	500	<£10

Table 67 The proportion and annual tonnage and cost of avoidable sausage waste by preparation state

Preparation state	Weight of avoidable sausage waste	Cost of avoidable sausage waste	Weight (tonnes pa)	Cost (£million pa)
Avoidable sausage waste	100% (10.7% of avoidable meat and fish waste)	100% (7.2% of avoidable meat and fish waste)	29,800	£110
Fresh, raw or minimally processed	45.0%	44.3%	13,400	£50
Cooked/prepared at home	32.7%	34.3%	9800	£40
Ready to consume when purchased	14.7%	14.1%	4400	£20
Pre-prepared but not cooked at home	3.6%	3.5%	1100	<£10
Pre-prepared and cooked at home	2.4%	2.3%	700	<£10
Cooked	1.5%	1.4%	400	<£10
Other	0.1%	0.1%	<100	<£10

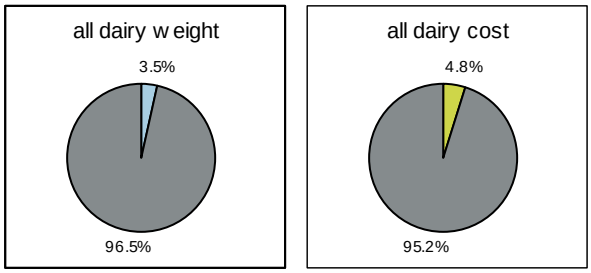
Table 68 The proportion and annual tonnage and cost of avoidable pork portions waste by preparation state

Preparation state	Weight of avoidable pork portions waste	Cost of avoidable pork portions waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable pork portions waste	100% (10.3% of avoidable meat and fish waste)	100% (9.7% of avoidable meat and fish waste)	28,800	£140
Cooked/prepared at home	41.3%	52.6%	12,300	£60
Fresh, raw or minimally processed	38.7%	58.5%	11,600	£60
Ready to consume when purchased	10.7%	14.7%	3200	£20
Cooked	2.7%	3.9%	800	<£10
Pre-prepared and cooked at home	1.5%	1.8%	400	<£10
Pre-prepared but not cooked at home	1.5%	2.7%	400	<£10

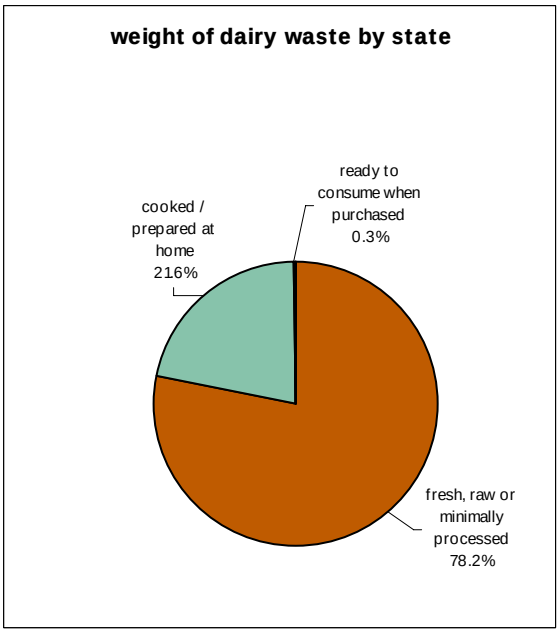
4.5 In what preparation state is dairy waste?

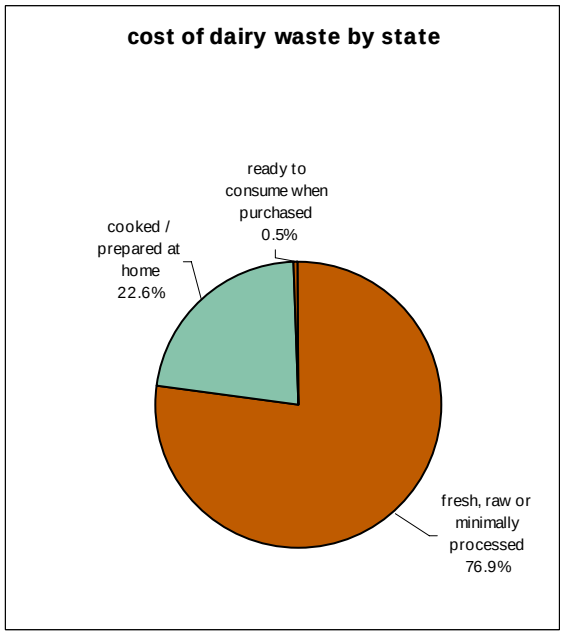
4.5.1 The weight and cost of all dairy waste

Dairy waste accounts for 3.5% and 4.8% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable).



Figures 93 and 94 The weight and cost of all dairy waste by preparation state





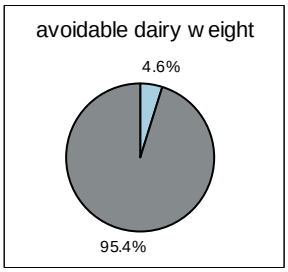
The above charts illustrate that of all the dairy waste arising, nearly eight tenths (78.2%) of the weight was made up of items in their natural state. A fifth (21.6%) of the weight of the dairy waste is made up of items that are prepared or cooked at home. In terms of cost, more than three quarters (76.9%) of dairy waste is attributable to foods that are in their natural state while just over a fifth (22.6%) of the cost is attributable to dairy foods that are cooked or prepared at home. The following table gives the proportions and UK annual tonnage and cost of all dairy waste by preparation state.

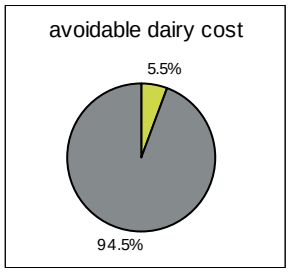
Table 69 The proportion and annual tonnage and cost of all dairy waste by preparation state

Preparation state	Weight of all dairy waste	Cost of all dairy waste	Weight (tonnes pa)	Cost (£ million pa)
All dairy waste	100% (3.5% of all waste)	100% (4.8% of all waste)	233,600	£700
Fresh, raw or minimally processed	78.2%	76.9%	182,600	£540
Cooked/prepared at home	21.6%	22.6%	50,400	£160
Ready to consume when purchased	0.3%	0.5%	600	<£10

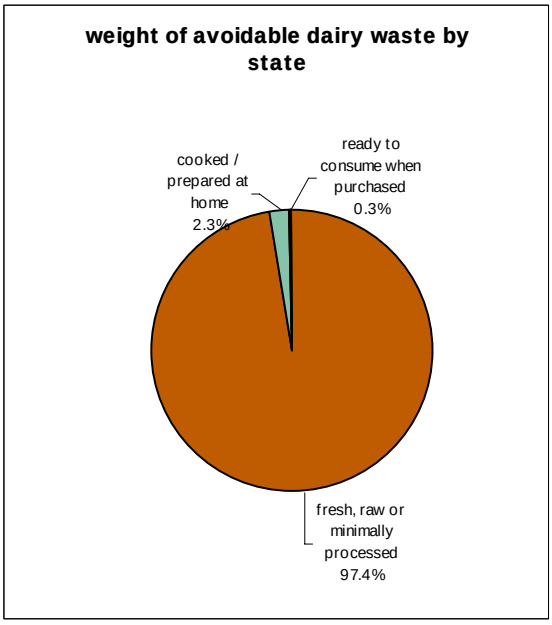
4.5.2 The weight and cost of avoidable dairy waste

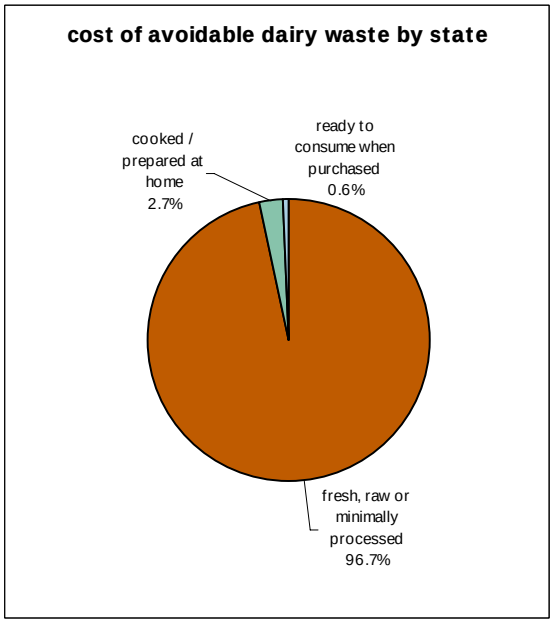
Dairy waste accounts for 4.6% and 5.5% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 95 and 96 The weight and cost of avoidable dairy waste by preparation state





The above charts illustrate that of the avoidable dairy waste generated, with respect to weight nearly all (97.4%) is in its natural, as purchased state. In terms of cost, again nearly all (96.7%) is in its natural state. The following table gives the proportions and UK annual tonnage and cost of avoidable dairy waste by preparation state.

Table 70 The proportion and annual tonnage of avoidable dairy waste by preparation state

Preparation state	Weight of avoidable dairy waste	Cost of avoidable dairy waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable dairy waste	100% (4.6% of avoidable food waste)	100% (5.5% of avoidable food waste)	187,000	£560
Fresh, raw or minimally processed	97.4%	96.7%	182,100	£540
Cooked/prepared at home	2.3%	2.7%	4200	£10
Ready to consume when purchased	0.3%	0.6%	600	<£10

4.5.3 The weight and cost of key avoidable dairy foods waste

This section examines in more detail the proportions and estimated UK annual weight and cost of the main avoidable dairy foods which are:

- eggs (10% of the avoidable dairy waste by weight and 10.6% by cost);
- yoghurts and yoghurt drinks (36% of the avoidable dairy waste by weight and 30.3% by cost); and
- cheese (21.3% of the avoidable dairy waste by weight and 44.2% by cost).

Table 71 The proportion and annual tonnage and cost of avoidable egg waste by preparation state

Preparation state	Weight of avoidable egg waste	Cost of avoidable egg waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable egg waste	100% (10% of avoidable dairy waste)	100% (10.6% of avoidable dairy waste)	18,800	£60
Fresh, raw or minimally processed	81.6%	80.2%	15,300	£50
Cooked/prepared at home	18.4%	19.8%	3500	£10

Table 72 The proportion and annual tonnage of avoidable yoghurts and yoghurt drinks waste by preparation state

Preparation state	Weight of avoidable yoghurts and yoghurt drinks waste	Cost of avoidable yoghurts and yoghurt drinks waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable yoghurts and yoghurt drinks waste	100% (36% of avoidable dairy waste)	100% (30.3% of avoidable dairy waste)	67,300	£170
Fresh, raw or minimally processed	99.8%	99.8%	67,200	£170
Cooked	0.2%	0.2%	100	<£10

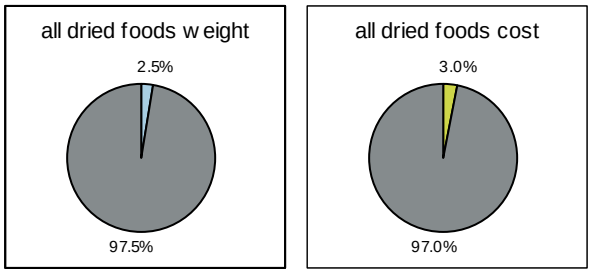
Table 73 The proportion and annual tonnage and cost of avoidable cheese waste by preparation state

Preparation state	Weight of avoidable cheese waste	Cost of avoidable cheese waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable cheese waste	100% (21.3% of all dairy waste)	100% (44.2% of all dairy waste)	39,900	£250
Fresh, raw or minimally processed	97.8%	97.5%	39,000	£240
Ready to consume when purchased	1.1%	1.3%	500	<£10
Cooked/prepared at home	1.1%	1.2%	400	<£10

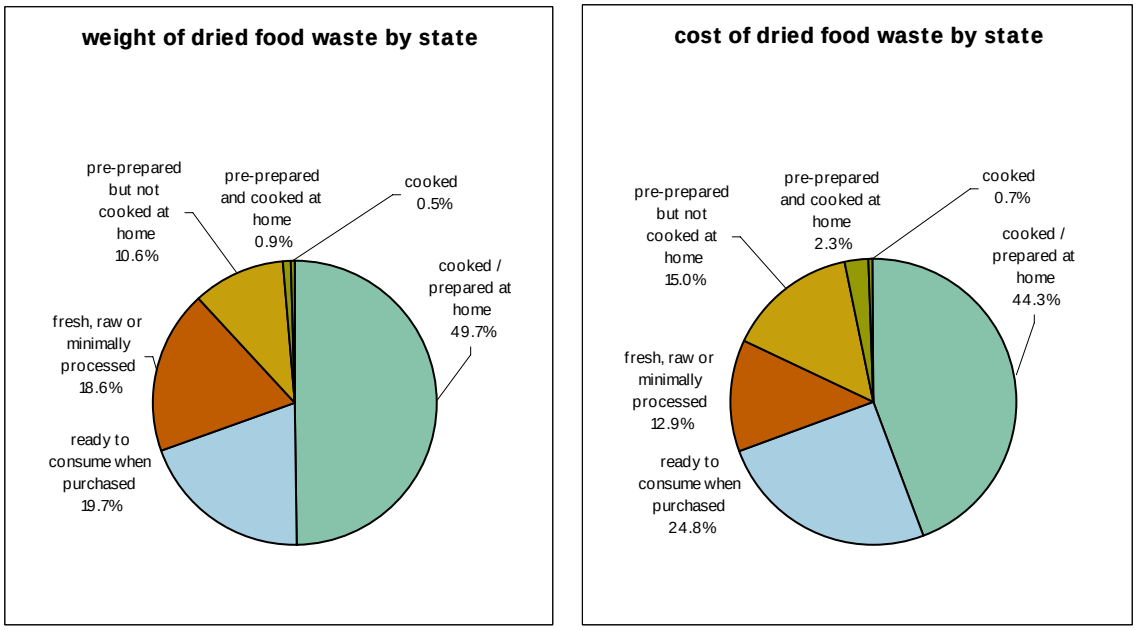
4.6 In what preparation state are dried foods?

4.6.1 The weight and cost of all dried foods waste

Dried foods waste accounts for 2.5% and 3% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable). It should be noted that this category of food waste incorporates foods that are purchased dry but may have been cooked prior to disposal (e.g. rice and pasta).



Figures 97 and 98 The weight and cost of all dried foods waste by preparation state



The above charts illustrate that of all the dried foods waste arising, half (49.7%) by weight is cooked or prepared at home and a fifth (19.7%) is ready to eat when purchased. In terms of cost, more than four tenths (44.3%) of dried foods waste is prepared or cooked within the home and a quarter (24.8%) is ready to eat when purchased.

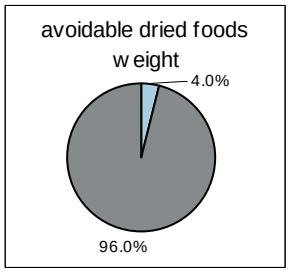
The table below gives the proportions and UK annual tonnage and cost of all dried foods waste by preparation state.

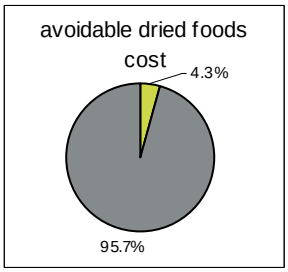
Table 74 The proportion and annual tonnage and cost of all dried foods waste by preparation state

Preparation state	Weight of all dried foods waste	Cost of all dried foods waste	Weight (tonnes pa)	Cost (£ million pa)
All dried food waste	100% (2.5% of all waste)	100% (3% of all waste)	165,500	£440
Cooked/prepared at home	49.7%	44.3%	82,200	£190
Ready to consume when purchased	19.7%	24.8%	32,600	£110
Fresh, raw or minimally processed	18.6%	12.9%	30,700	£60
Pre-prepared but not cooked at home	10.6%	15.0%	17,600	£70
Pre-prepared and cooked at home	0.9%	2.3%	1600	£10
Cooked	0.5%	0.7%	800	<£10

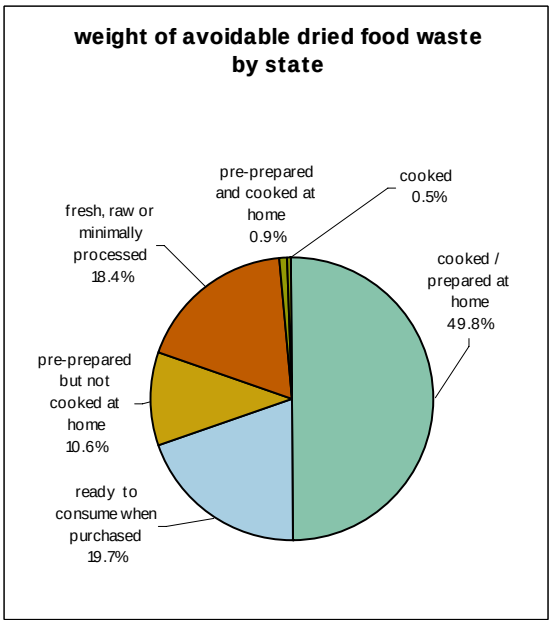
4.6.2 *The weight and cost of avoidable dried foods waste*

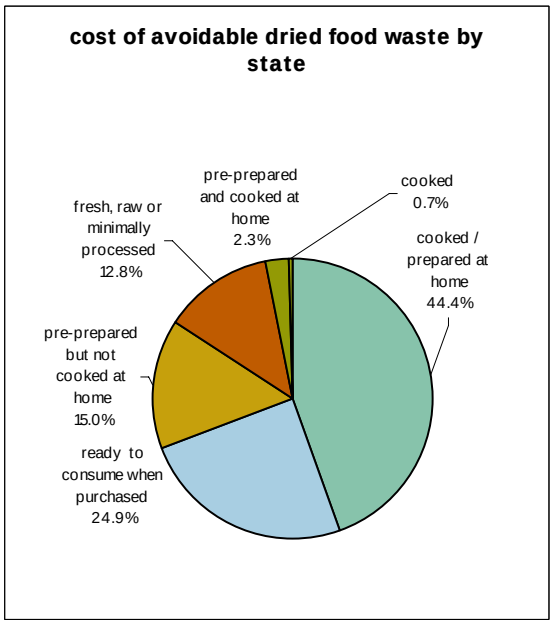
Dried foods waste accounts for 4% and 4.3% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 99 and 100 The weight and cost of avoidable dried foods waste by preparation state





The above charts illustrate that of the avoidable dried foods waste generated, half by weight (49.8%) is cooked or prepared at home and a fifth by weight (19.7%) is ready to eat when purchased. A similar proportion (18.4%) is thrown away in its natural or uncooked state. In terms of cost, more than four tenths (44.4%) of avoidable dried foods waste is made up of foods that are home-cooked or prepared and a quarter (24.9%) is ready to eat when purchased.

The table below gives the proportions and UK annual tonnage and cost of avoidable dried foods waste by preparation state.

Table 75 The proportion and annual tonnage and cost of avoidable dried foods waste by preparation state

Preparation state	Weight of avoidable dried foods waste	Cost of avoidable dried foods waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable dried foods waste	100% (4% of avoidable food waste)	100% (4.3% of avoidable food waste)	164,900	£440
Cooked/prepared at home	49.8%	44.4%	82,100	£190
Ready to consume when purchased	19.7%	24.9%	32,500	£110
Pre-prepared but not cooked at home	10.6%	15.0%	17,500	£70
Fresh, raw or minimally processed	18.4%	12.8%	30,400	£60
Pre-prepared and cooked at home	0.9%	2.3%	1600	£10
Cooked	0.5%	0.7%	800	<£10

4.6.3 The weight and cost of avoidable dried foods waste

This section examines in more detail the proportions and estimated UK annual weight and cost of the main avoidable dried foods which are:

- rice (35.1% of the avoidable dried foods waste by weight and 34.1% by cost); and
- pasta (26.9% of the avoidable dried foods waste by weight and 23.6% by cost).

Table 76 The proportion and annual tonnage and cost of avoidable rice waste by preparation state

Preparation state	Weight of avoidable rice waste	Cost of avoidable rice waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable rice waste	100% (35.1% of avoidable dried foods waste)	100% (34.1% of avoidable dried foods waste)	57,800	£150
Cooked/prepared at home	78.0%	79.3%	45,100	£120
Ready to consume when purchased	17.4%	16.4%	10,000	£20
Pre-prepared but not cooked at home	2.2%	1.8%	1300	<£10
Fresh, raw or minimally processed	2.1%	2.2%	1200	<£10
Pre-prepared and cooked at home	0.2%	0.2%	100	<£10
Cooked	0.1%	0.1%	100	<£10

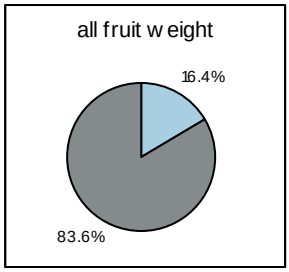
Table 77 The proportion and annual tonnage and cost of avoidable pasta waste by preparation state

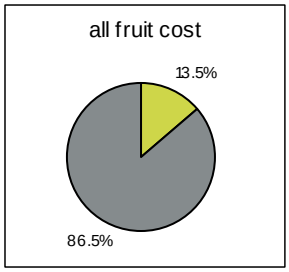
Preparation state	Weight of avoidable pasta waste	Cost of avoidable pasta waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable pasta waste	100% (26.9% of avoidable dried foods waste)	100% (23.6% of avoidable dried foods waste)	44,300	£100
Cooked/prepared at home	73.8%	63.3%	32,700	£70
Fresh, raw or minimally processed	14.5%	14.3%	6400	£10
Pre-prepared but not cooked at home	4.0%	6.5%	1800	£10
Ready to consume when purchased	3.1%	3.8%	1400	<£10
Pre-prepared and cooked at home	3.0%	9.3%	1300	£10
Cooked	1.7%	2.7%	800	<£10

4.7 In what preparation state is fruit waste?

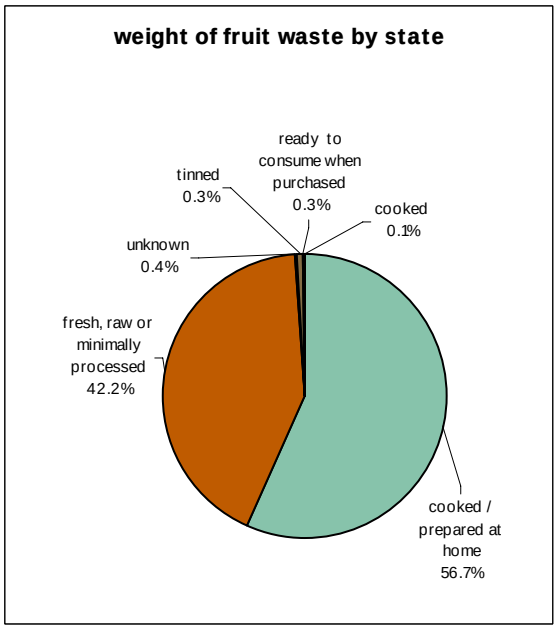
4.7.1 The weight and cost of all fruit waste

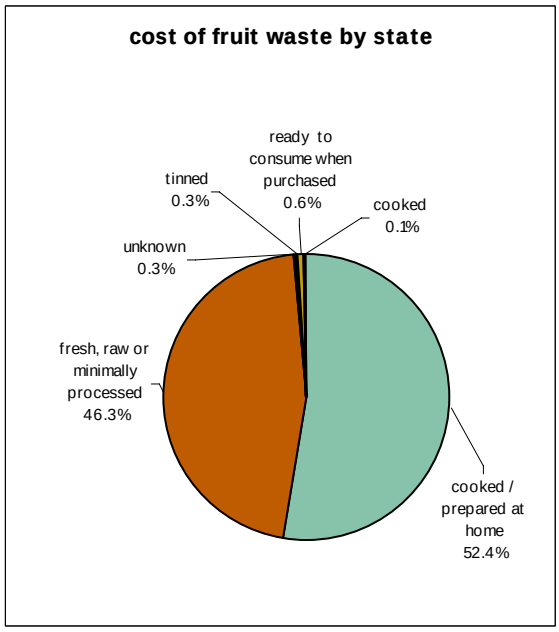
Fruit waste accounts for 16.4% and 13.5% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable). This category incorporates all types of fruit waste (fresh and processed) which may or may not have been cooked within the home.





Figures 101 and 102 The weight and cost of all fruit waste by preparation state





The above charts illustrate that of all the fruit waste arising, nearly six tenths (56.7%) of the weight is made up of items that are prepared or cooked at home while more than four tenths (42.2%) are thrown away in their natural, untouched state. In terms of cost, more than half (52.4%) of fruit waste has been prepared or cooked in the home and just under half (46.3%) is thrown away in its natural, untouched state.

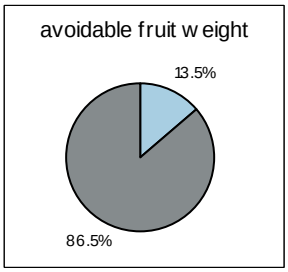
The table below gives the proportions and estimated UK annual tonnage and cost of all fruit waste by preparation state.

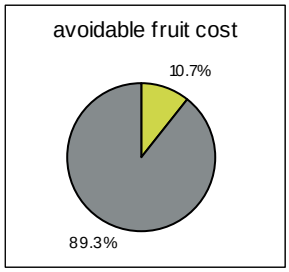
Table 78 The proportion and annual tonnage and cost of all fruit waste by preparation state

Preparation state	Weight of all fruit waste	Cost of all fruit waste	Weight (tonnes pa)	Cost (£ million pa)
All fruit waste	100% (16.4% of all waste)	100% (13.5% of all waste)	1,100,300	£1960
Cooked/prepared at home	56.7%	52.4%	623,500	£1030
Fresh, raw or minimally processed	42.2%	46.3%	464,400	£910
Other	0.4%	0.3%	4400	£10
Tinned	0.3%	0.3%	3600	£10
Ready to consume when purchased	0.3%	0.6%	3400	£10
Cooked	0.1%	0.1%	600	<£10
Pre-prepared but not cooked at home	<0.1%	0.1%	400	<£10

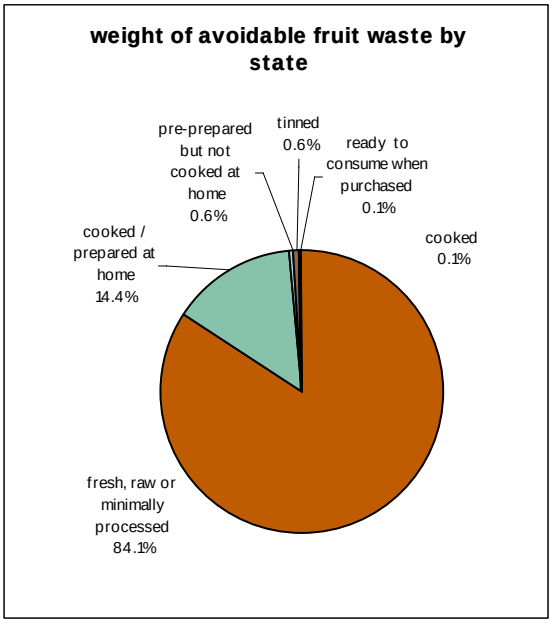
4.7.2 The weight and cost of avoidable fruit waste

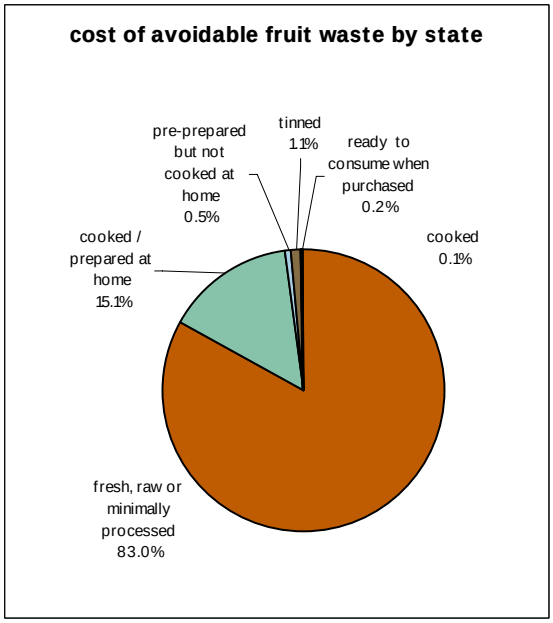
Fruit waste accounts for 13.5% and 10.7% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 103 and 104 The weight and cost of avoidable fruit waste by preparation state





The above charts illustrate that of the avoidable fruit waste generated, more than eight tenths by weight (84.1%) is thrown away in a raw, untouched state. Less than a fifth (14.4%) is prepared or cooked in the home (which includes fruit that has been chopped or sliced or partly consumed). In terms of cost, more than eight tenths (83%) of avoidable fruit waste is made up of fruits that are in their natural, untouched state and just less than a fifth (15.1%) is prepared or cooked within the home.

The table below gives the proportions and UK annual tonnage and cost of avoidable fruit waste by preparation state.

Table 79 The proportion and annual tonnage and cost of avoidable fruit waste by preparation state

Preparation state	Weight of avoidable fruit waste	Cost of avoidable fruit waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable fruit waste	100% (13.5% of avoidable food waste)	100% (10.7% of avoidable food waste)	550,800	£1090
Fresh, raw or minimally processed	84.1%	83.0%	463,000	£900
Cooked/prepared at home	14.4%	15.1%	79,500	£160
Pre-prepared but not cooked at home	0.6%	0.5%	3600	£10
Tinned	0.6%	1.1%	3400	£10
Ready to consume when purchased	0.1%	0.2%	600	<£10
Cooked	0.1%	0.1%	400	<£10
Other	0.1%	0.1%	400	<£10

4.7.3 *The weight and cost of key avoidable fruit waste*

This section examines in more detail the proportions and estimated UK annual weight and cost of the main avoidable fruits which are:

- apples (34.5% of the avoidable fruit waste by weight and 29.1% by cost);
- bananas (15.3% of the avoidable fruit waste by weight and 9.3% by cost); and
- oranges (9.3% of the avoidable fruit waste by weight and 6.9% by cost).

Table 80 The proportion and annual tonnage and cost of avoidable apple waste by preparation state

Preparation state	Weight of avoidable apple waste	Cost of avoidable apple waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable apple waste	100% (34.5% of avoidable fruit waste)	100% (29.1% of avoidable fruit waste)	189,900	£320
Fresh, raw or minimally processed	94.5%	94.5%	179,500	£300
Cooked/prepared at home	5.5%	5.5%	10,400	£20

Table 81 The proportion and annual tonnage and cost of avoidable banana waste by preparation state

Preparation state	Weight of avoidable banana waste	Cost of avoidable banana waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable banana waste	100% (15.3% of avoidable fruit waste)	100% (9.3% of avoidable fruit waste)	84,100	£100
Fresh, raw or minimally processed	93.0%	93.0%	78,300	£90
Cooked/prepared at home	7.0%	7.0%	5900	£10

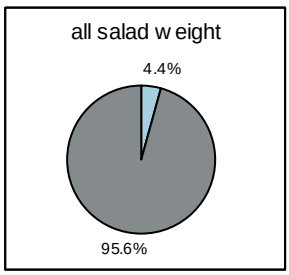
Table 82 The proportion and annual tonnage and cost of avoidable orange waste by preparation state

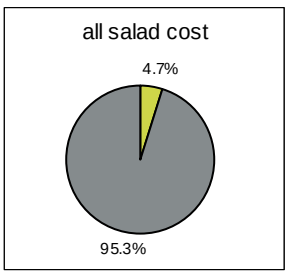
Preparation state	Weight of avoidable orange waste	Cost of avoidable orange waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable orange waste	100% (9.3% of avoidable fruit waste)	100% (6.9% of avoidable fruit waste)	51,300	£80
Fresh, raw or minimally processed	88.8%	89.2%	45,600	£70
Cooked/prepared at home	11.2%	10.8%	5800	£10

4.8 In what preparation state is salad?

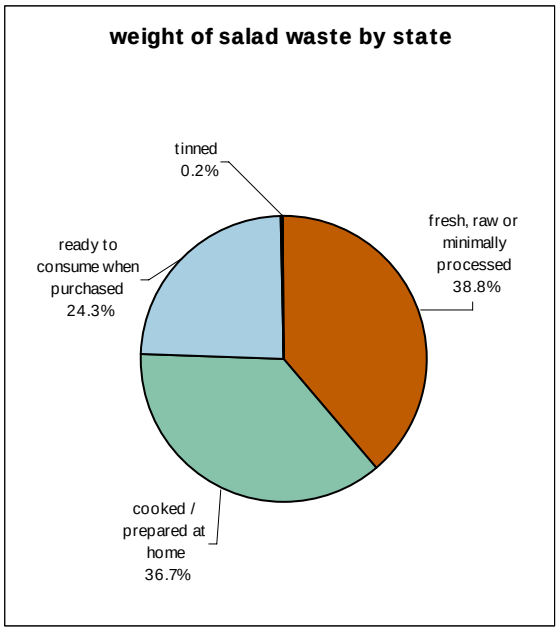
4.8.1 *The weight and cost of all salad waste*

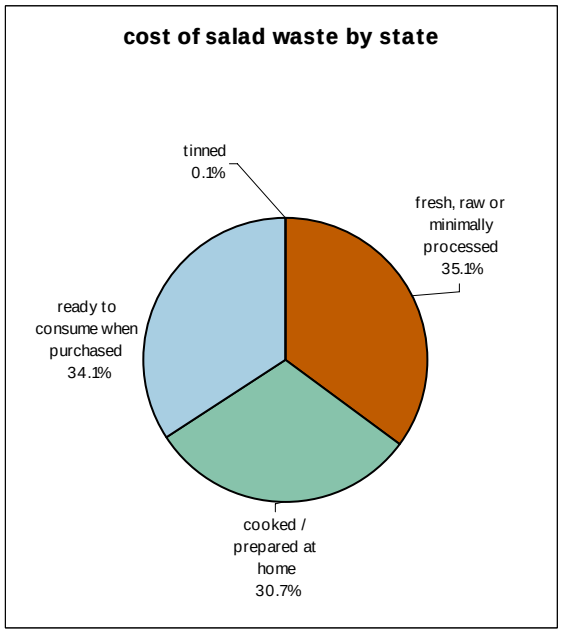
Salad waste accounts for 4.4% and 4.7% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable).





Figures 105 and 106 The weight and cost of all salad waste by preparation state





The above charts illustrate that of all the salad waste arising, nearly four tenths (38.8%) of the weight is made up of items that are thrown away in a natural state and a slightly lower proportion (36.7%) consists of salad prepared within the home. In addition, a quarter (24.3%) of the salad waste is ready to eat when purchased. In terms of cost, nearly four tenths (35.1%) of salad waste is in its natural state, more than a third (34.1%) is ready to eat when bought and three tenths (30.7%) is prepared within the home.

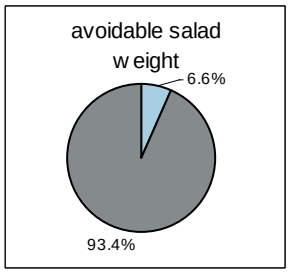
The table below gives the proportions and estimated UK annual tonnage and cost of all salad waste by preparation state.

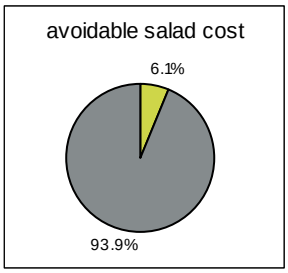
Table 83 The proportion and annual tonnage and cost of all salad waste by preparation state

Preparation state	Weight of all salad waste	Cost of all salad waste	Weight (tonnes pa)	Cost (£ million pa)
All salad waste	100% (4.4% of all waste)	100% (4.7% of all waste)	297,200	£690
Fresh, raw or minimally processed	38.8%	35.1%	115,300	£240
Cooked/prepared at home	36.7%	30.7%	109,100	£210
Ready to consume when purchased	24.3%	34.1%	72,300	£230
Tinned	0.2%	0.1%	500	<£10

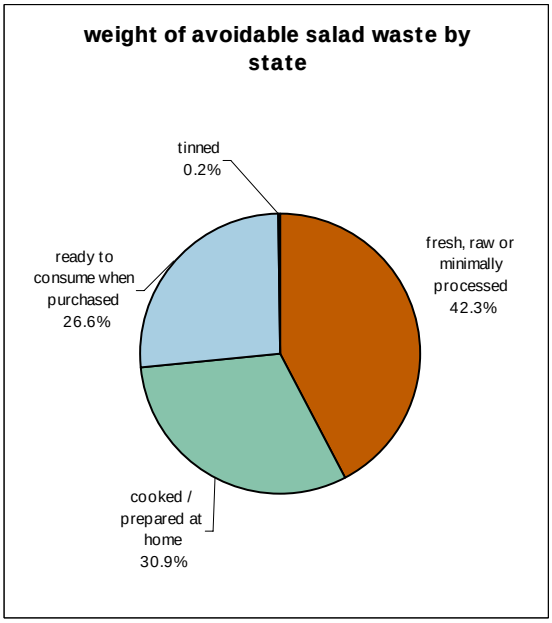
4.8.2 *The weight and cost of avoidable salad waste*

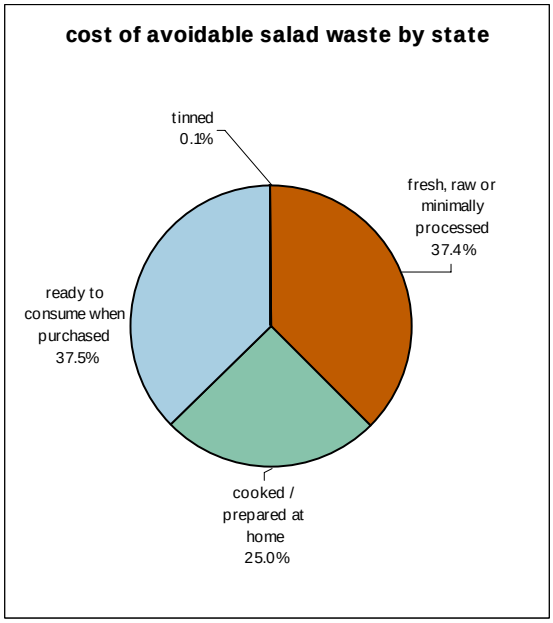
Salad waste accounts for 6.6% and 6.1% of the weight and cost of avoidable salad food waste (food that could have been eaten if managed or stored better).





Figures 107 and 108 The weight and cost of avoidable salad waste by preparation state





The above charts illustrate that of the avoidable salad waste generated, more than four tenths by weight (42.3%) is in its natural state and three tenths (30.9%) is prepared in the home. In addition, more than a quarter (26.6%) is ready to eat when bought. In terms of cost, nearly four tenths (37.5%) of avoidable salad waste is ready to eat when purchased, a similar proportion (37.4%) is in its natural state and a quarter (25%) consists of items that are prepared within the home.

The table below gives the proportions and estimated UK annual tonnage and cost of avoidable salad waste by preparation state.

Table 84 The proportion and annual tonnage and cost of avoidable salad waste by preparation state

Preparation state	Weight of avoidable salad waste	Cost of avoidable salad waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable salad waste	100% (6.6% of avoidable food waste)	100% (6.1% of avoidable food waste)	271,300	£620
Fresh, raw or minimally processed	42.3%	37.4%	114,800	£230
Cooked/prepared at home	30.9%	25.0%	83,800	£160
Ready to consume when purchased	26.6%	37.5%	72,200	£230
Tinned	0.2%	0.1%	500	<£10

4.8.3 The weight and cost of key avoidable salad waste

This section examines in more detail the proportions and estimated UK annual weight and cost of the main avoidable salad items which are:

- lettuces (22.6% of the avoidable salad waste by weight and 10.3% by cost);
- tomatoes (22.6% of the avoidable salad waste by weight and 19.4% by cost); and
- cucumbers (11.7% of the avoidable salad waste by weight and 10.5% by cost).

Table 85 The proportion and annual tonnage and cost of avoidable lettuce waste by preparation state

Preparation state	Weight of avoidable lettuce waste	Cost of avoidable lettuce waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable lettuce waste	100% (22.6% of avoidable salad waste)	100% (10.3% of avoidable salad waste)	61,300	£60
Cooked/prepared at home	58.4%	56.8%	35,800	£40
Fresh, raw or minimally processed	40.9%	42.6%	25,100	£30
Ready to consume when purchased	0.7%	0.6%	400	<£10

Table 86 The proportion and annual tonnage and cost of avoidable tomato waste by preparation state

Preparation state	Weight of avoidable tomato waste	Cost of avoidable tomato waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable tomato waste	100% (22.6% of avoidable salad waste)	100% (19.4% of avoidable salad waste)	61,300	£120
Fresh, raw or minimally processed	85.7%	80.4%	52,500	£100
Cooked/prepared at home	11.8%	10.4%	7200	£10
Ready to consume when purchased	1.7%	8.6%	1100	£10
Tinned	0.8%	0.6%	500	<£10

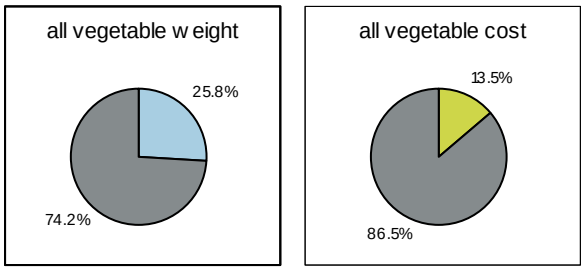
Table 87 The proportion and annual tonnage and cost of avoidable cucumber waste by preparation state

Preparation state	Weight of avoidable cucumber waste	Cost of avoidable cucumber waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable cucumber waste	100% (11.7% of avoidable salad waste)	100% (10.5% of avoidable salad waste)	31,600	£70
Cooked/prepared at home	55.9%	55.9%	17,700	£40
Fresh, raw or minimally processed	44.1%	44.1%	13,900	£30

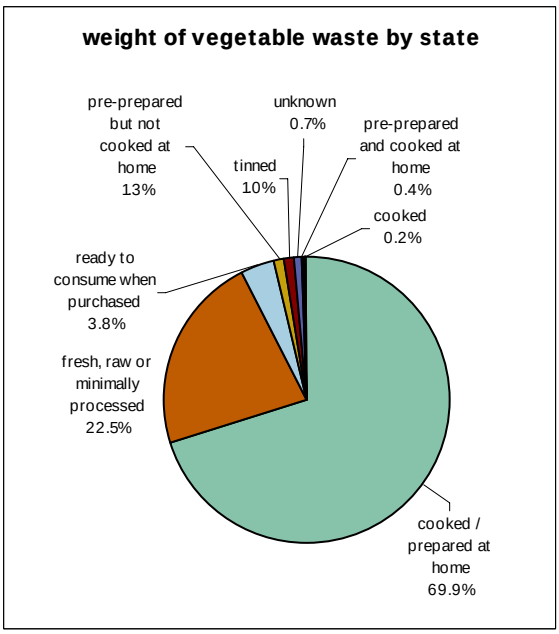
4.9 In what preparation state is vegetable waste?

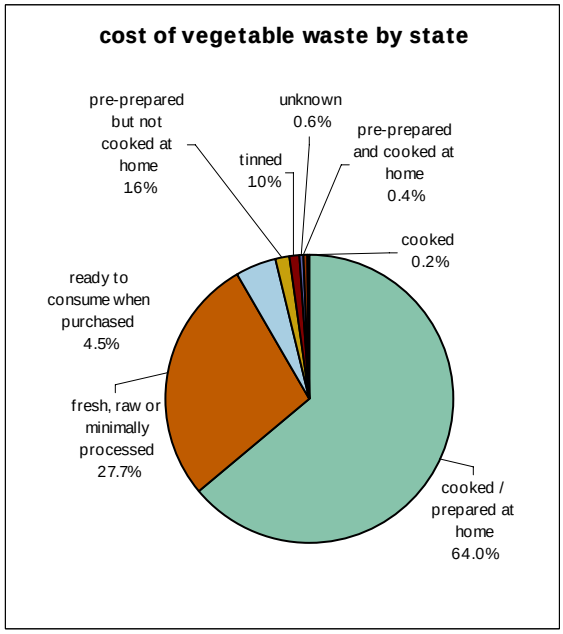
4.9.1 The weight and cost of all vegetable waste

Vegetable waste accounts for 25.8% and 13.5% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable). Unlike some previous sections where potatoes have been reported separately, they have been included in this section.



Figures 109 and 110 The weight and cost of all vegetable waste by preparation state





The above charts illustrate that of all the vegetable waste arising, seven tenths (69.9%) by weight is made up of items that are cooked or prepared within the home. More than a fifth (22.5%) is thrown away in a natural, raw state. In terms of cost, nearly two thirds (64%) of vegetable waste is prepared, chopped or cooked within the home and nearly three tenths (27.7%) is thrown away in an uncooked or untouched state.

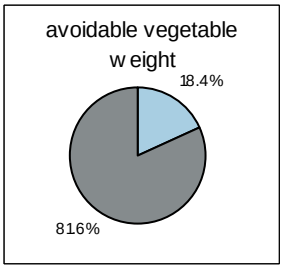
The table below gives the proportions and estimated UK annual tonnage and cost of all vegetable waste by preparation state.

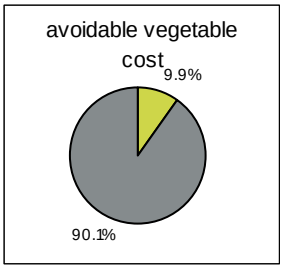
Table 88 The proportion and annual tonnage and cost of all vegetable waste by preparation state

Preparation state	Weight of all vegetable waste	Cost of all vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
All vegetable waste	100% (25.8% of all waste)	100% (13.5% of all waste)	1,729,800	£1950
Cooked/prepared at home	69.9%	64.0%	1,209,800	£1250
Fresh, raw or minimally processed	22.5%	27.7%	389,800	£540
Ready to consume when purchased	3.8%	4.5%	66,000	£90
Pre-prepared but not cooked at home	1.3%	1.6%	23,200	£30
Tinned	1.0%	1.0%	18,100	£20
Other	0.7%	0.6%	12,000	£10
Pre-prepared and cooked at home	0.4%	0.4%	7300	£10
Cooked	0.2%	0.2%	3600	<£10

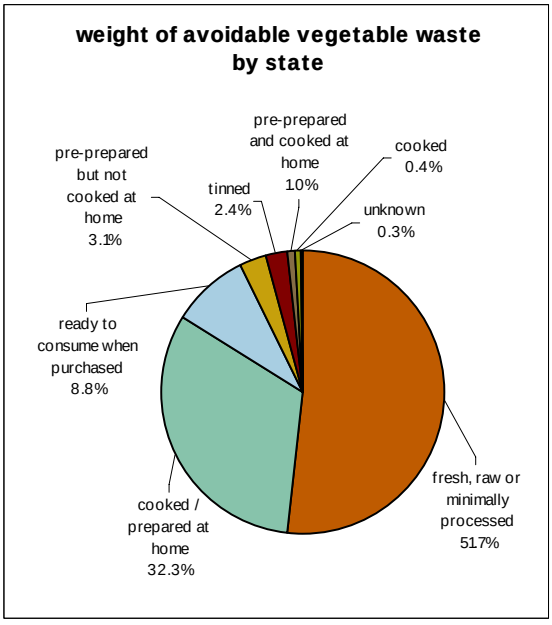
4.9.2 The weight and cost of avoidable vegetable waste

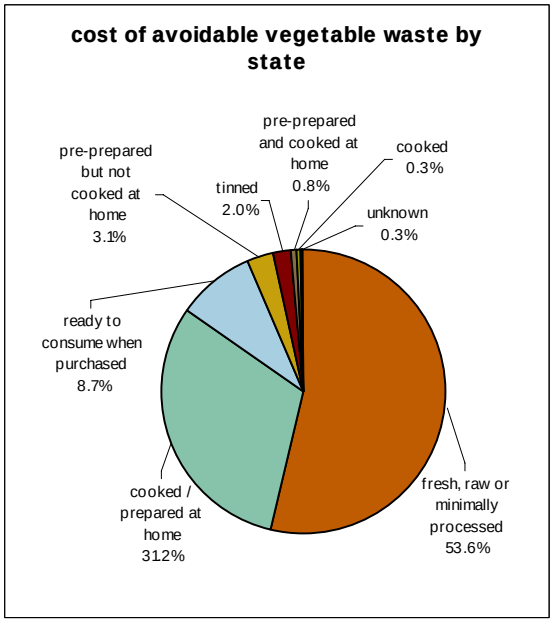
Vegetable waste accounts for 18.4% and 9.9% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 111 and 112 The weight and cost of avoidable vegetable waste by preparation state





The above charts illustrate that of the avoidable vegetable waste generated, more than half by weight (51.7%) is thrown away in a uncooked or untouched state and a third (32.3%) is cooked or prepared within the home. In terms of cost, more than half (53.6%) of avoidable vegetable waste is thrown away in its natural state and more than three tenths (31.2%) is cooked or prepared within the home.

The table below gives the proportions and estimated UK annual tonnage and cost of avoidable vegetable waste by preparation state.

Table 89 The proportion and annual tonnage and cost of avoidable vegetable waste by preparation state

Preparation state	Weight of avoidable vegetable waste	Cost of avoidable vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable vegetable waste	100% (18.4% of avoidable food waste)	100% (9.9% of avoidable food waste)	752,500	£1000
Fresh, raw or minimally processed	51.7%	53.6%	389,000	£540
Cooked/prepared at home	32.3%	31.2%	243,300	£310
Ready to consume when purchased	8.8%	8.7%	65,900	£90
Pre-prepared but not cooked at home	3.1%	3.1%	23,200	£30
Tinned	2.4%	2.0%	18,100	£20
Pre-prepared and cooked at home	1.0%	0.8%	7300	£10
Cooked	0.4%	0.3%	3400	<£10
Other	0.3%	0.3%	2500	<£10

4.9.3 The weight and cost of key avoidable vegetable waste

This section examines in more detail the proportions and estimated UK annual weight and cost of the main avoidable vegetable waste foods which are:

- potatoes (47.6% of the avoidable vegetable waste by weight and 30.1% by cost);
- cabbages (7.5 % of the avoidable vegetable waste by weight and cost); and
- carrots (6.2% of the avoidable vegetable waste by weight and 3.5% by cost).

Table 90 The proportion and annual tonnage and cost of avoidable potato waste by preparation state

Preparation state	Weight of avoidable potato waste	Cost of avoidable potato waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable potato waste	100% (47.6% of avoidable vegetable waste)	100% (30.1% of avoidable vegetable waste)	358,500	£300
Fresh, raw or minimally processed	49.1%	46.5%	176,000	£140
Cooked/prepared at home	29.2%	28.6%	104,700	£90
Ready to consume when purchased	14.4%	16.0%	51,600	£50
Pre-prepared but not cooked at home	4.4%	5.5%	15,800	£20
Pre-prepared and cooked at home	1.9%	2.3%	6900	£10
Cooked	0.9%	1.0%	3200	<£10
Tinned	0.1%	0.1%	500	<£10

Table 91 The proportion and annual tonnage and cost of avoidable cabbage waste by preparation state

Preparation state	Weight of avoidable cabbage waste	Cost of avoidable cabbage waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable cabbage waste	100% (7.5% of avoidable vegetable waste)	100% (7.5% of avoidable vegetable waste)	56,300	£80
Cooked/prepared at home	62.7%	62.5%	35,300	£50
Fresh, raw or minimally processed	35.7%	34.4%	20,100	£30
Ready to consume when purchased	1.5%	2.9%	800	<£10
Pre-prepared but not cooked at home	0.1%	0.1%	100	<£10

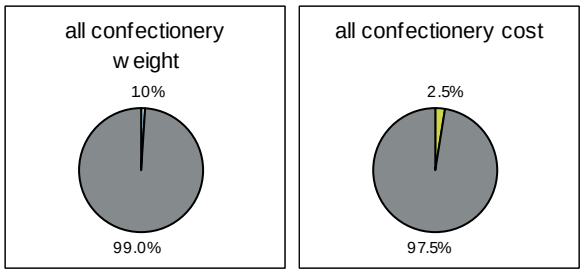
Table 92 The proportion and annual tonnage and cost of avoidable carrot waste by preparation state

Preparation state	Weight of avoidable carrot waste	Cost of avoidable carrot waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable carrot waste	100% (6.2% of avoidable vegetable waste)	100% (3.5% of avoidable vegetable waste)	46,300	£40
Fresh, raw or minimally processed	81.4%	82.0%	37,700	£30
Cooked/prepared at home	15.5%	14.5%	7200	£10
Ready to consume when purchased	2.2%	2.7%	1000	<£10
Tinned	0.9%	0.9%	400	<£10

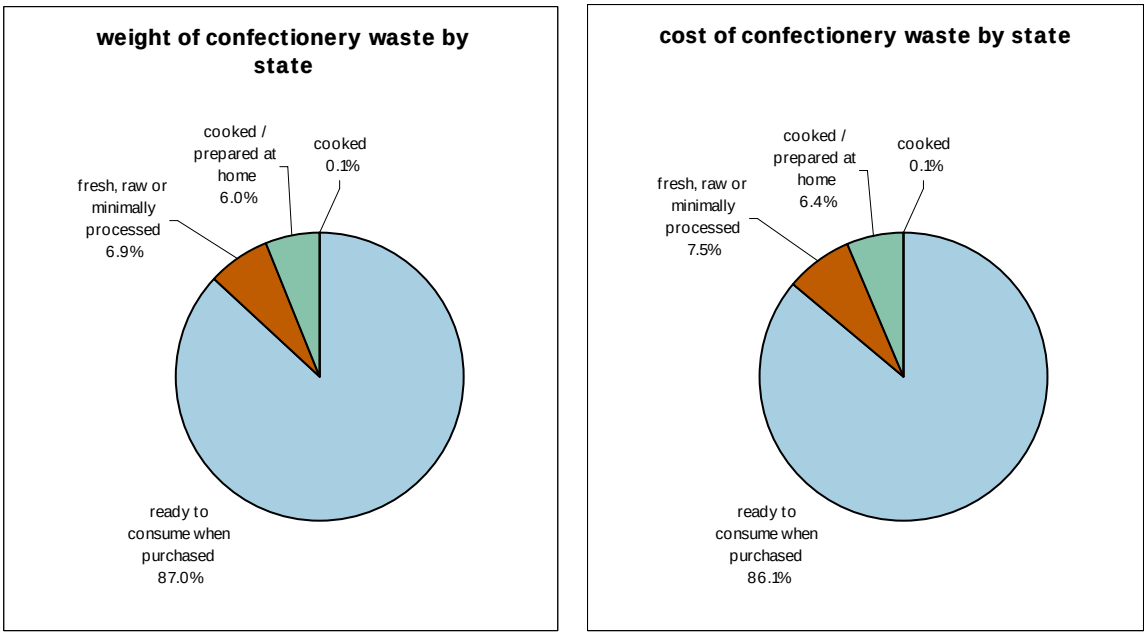
4.10 In what preparation state is confectionery waste?

4.10.1 The weight and cost of all confectionery waste

Confectionery waste accounts for 1% and 2.5% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable).



Figures 113 and 114 The weight and cost of all confectionery waste by preparation state



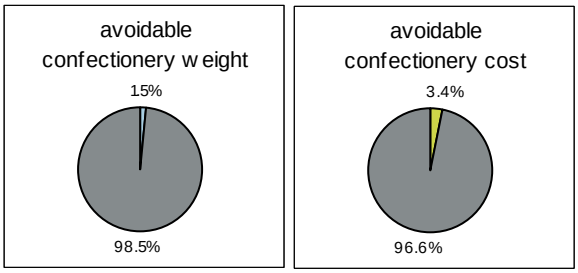
The above charts illustrate that of all the confectionery and snack waste arising, nearly nine tenths (87%) by weight is ready to eat when purchased. Similarly, in terms of cost, nearly nine tenths (86.1%) is ready to eat. The table below gives the proportions and estimated UK annual tonnage and cost of all confectionery waste by preparation state.

Table 93 The proportion and annual tonnage and cost of all confectionery waste by preparation state

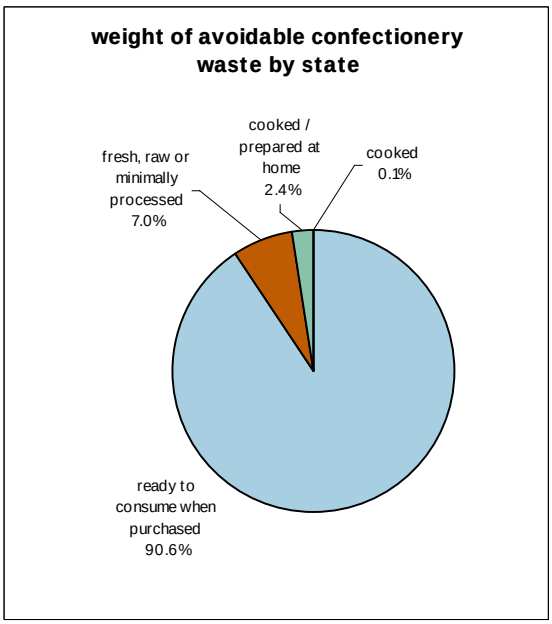
Preparation state	Weight of all confectionery waste	Cost of all confectionery waste	Weight (tonnes pa)	Cost (£ million pa)
All confectionery waste	100% (1.0% of all waste)	100% (2.5% of all waste)	65,200	£370
Ready to consume when purchased	87.0%	86.1%	56,700	£320
Fresh, raw or minimally processed	6.9%	7.5%	4500	£30
Cooked/prepared at home	6.0%	6.4%	3900	£20
Cooked	0.1%	0.1%	100	<£10

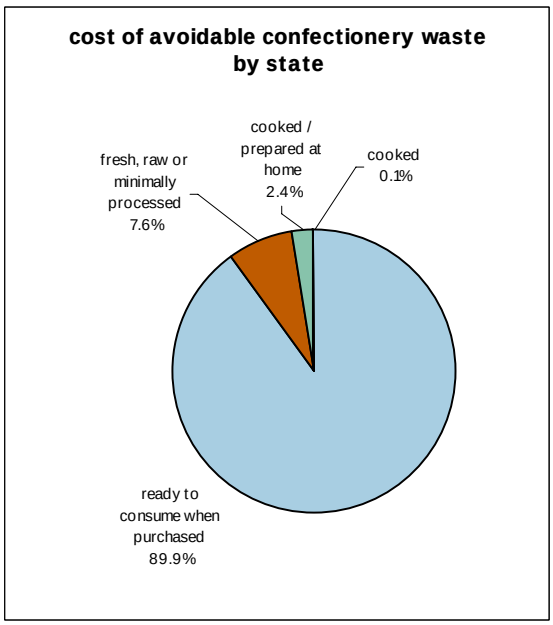
4.10.2 The weight and cost of avoidable confectionery waste

Confectionery waste accounts for 1.5% and 3.4% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).



Figures 115 and 116 The weight and cost of avoidable confectionery waste by preparation state





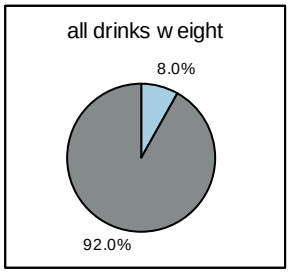
The above charts illustrate that of the avoidable confectionery waste generated, nine tenths (90.6% by weight and 89.9% by cost) is ready to eat when purchased. The table below gives the proportions and estimated UK annual tonnage and cost of avoidable confectionery waste by preparation state.

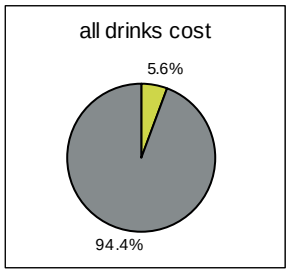
Table 94 The proportion and annual tonnage of avoidable confectionery waste by preparation state

Preparation state	Weight of avoidable confectionery waste	Cost of avoidable confectionery waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable confectionery waste	100% (1.5% of avoidable food waste)	100% (3.4% of avoidable food waste)	62,500	£350
Ready to consume when purchased	90.6%	89.9%	56,600	£310
Fresh, raw or minimally processed	7.0%	7.6%	4300	£30
Cooked/prepared at home	2.4%	2.4%	1500	£10
Cooked	0.1%	0.1%	100	<£10

4.11 In what preparation state is drinks waste?

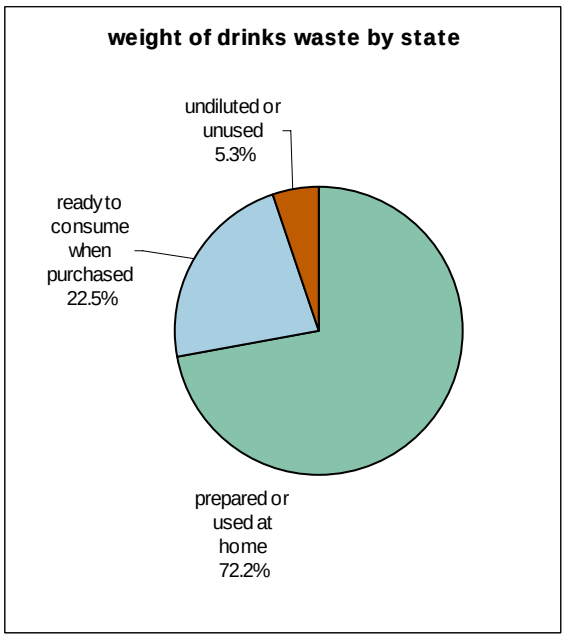
4.11.1 The weight and cost of all drinks waste

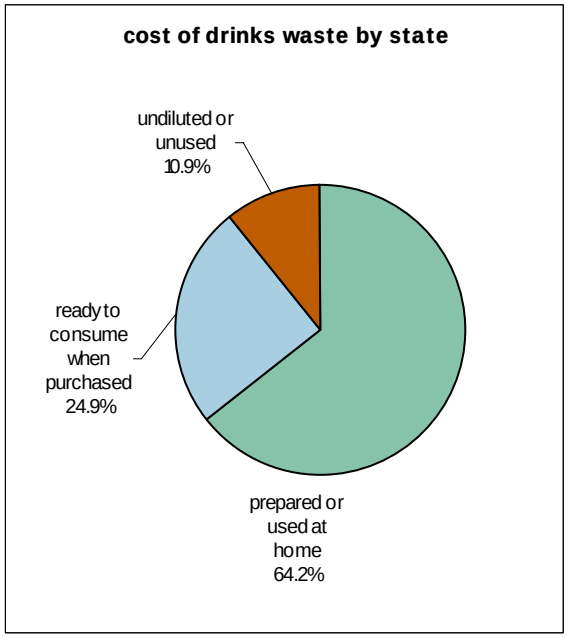




Drinks waste accounts for 8% and 5.6% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable). A special category of 'undiluted/unused' has been added to cover squashes, cordials and other drinks that need to be prepared; this is equivalent to the 'fresh/raw/in natural state' category that has been used for other foods. Tea or coffee waste resulting from preparation is defined as unavoidable waste that has been 'prepared at home'.

Figures 117 and 118 The weight and cost of all drinks waste by preparation state





The above charts illustrate that of all the drinks waste arising, more than seven tenths (72.2%) of the weight consists of items that are prepared within the home. More than a fifth (22.5%) consists of items that are ready to consume when purchased. In terms of cost, nearly two thirds (64.2%) of drinks waste is attributable to items that are prepared or used within the home and a quarter (24.9%) is ready to consume when purchased.

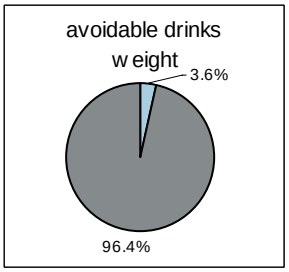
The table below gives the proportions and estimated UK annual tonnage and cost of all drinks waste by preparation state.

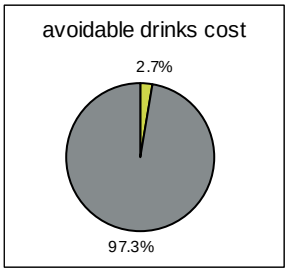
Table 95 The proportion and annual tonnage and cost of all drinks waste by preparation state

Preparation state	Weight of all drinks waste	Cost of all drinks waste	Weight (tonnes pa)	Cost (£ million pa)
All drinks waste	100% (8% of all waste)	100% (5.6% of all waste)	536,400	£810
Cooked/prepared at home	72.2%	64.2%	387,300	£520
Ready to consume when purchased	22.4%	24.9%	120,400	£200
Undiluted/unused	5.3%	10.9%	28,700	£90

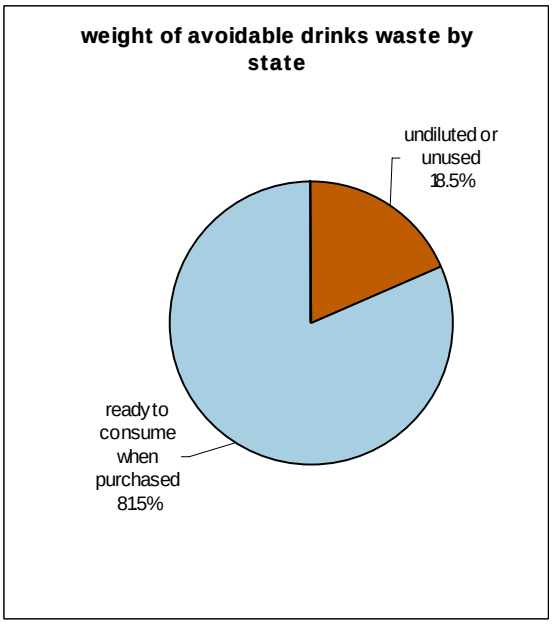
4.11.2 The weight and cost of avoidable drinks waste

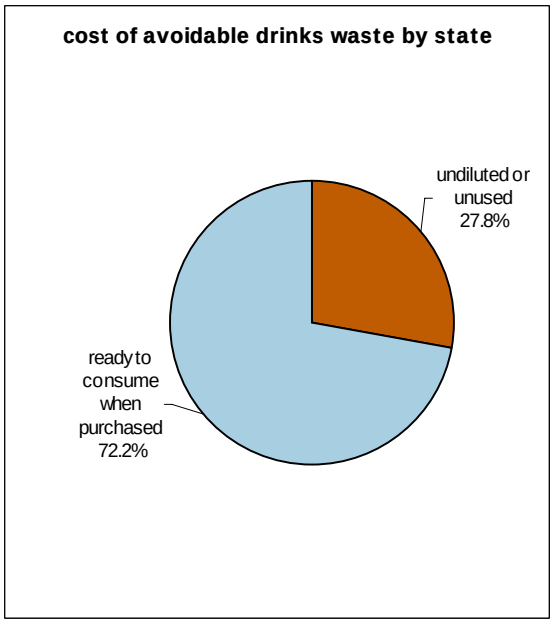
Drinks waste accounts for 3.6% and 2.7% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 119 and 120 The weight and cost of avoidable drinks waste by preparation state





The above charts illustrate that of the avoidable drinks waste generated, more than eight tenths by weight (81.5%) is ready to consume when purchased and the rest (18.5% by weight) is in an unused or undiluted state. In terms of cost, more than seven tenths (72.2%) of avoidable drinks waste are ready to consume when purchased and the balance (27.8%) is in an undiluted or unused state.

The table below gives the proportions and estimated UK annual tonnage and cost of avoidable drinks waste by preparation state.

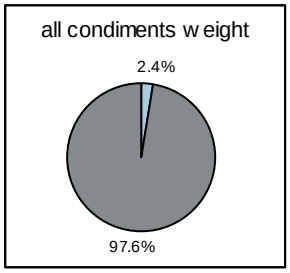
Table 96 The proportion and annual tonnage of avoidable drinks waste by preparation state

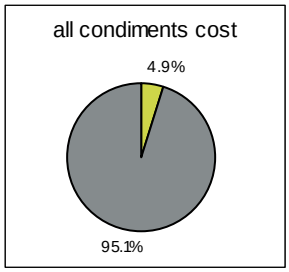
Preparation state	Weight of avoidable drinks waste	Cost of avoidable drinks waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable drinks waste	100% (3.6% of avoidable food waste)	100% (2.7% of avoidable food waste)	147,500	£280
Ready to consume when purchased	81.5%	72.2%	120,300	£200
Undiluted/unused	18.5%	27.8%	27,300	£80

4.12 In what preparation state is condiments waste?

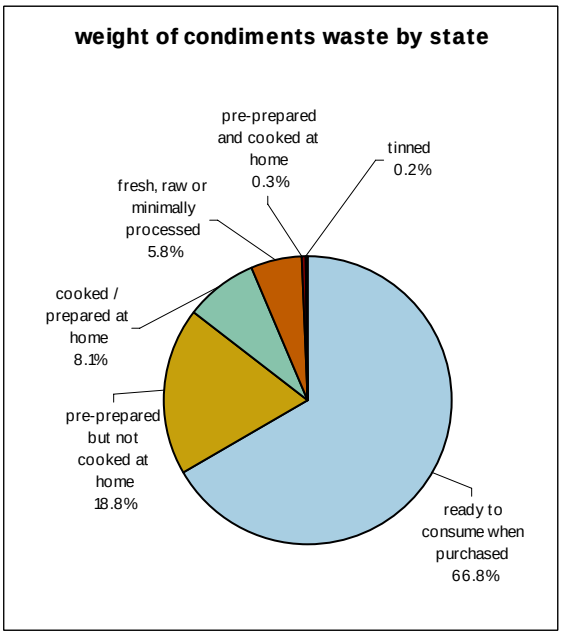
4.12.1 The weight and cost of all condiments waste

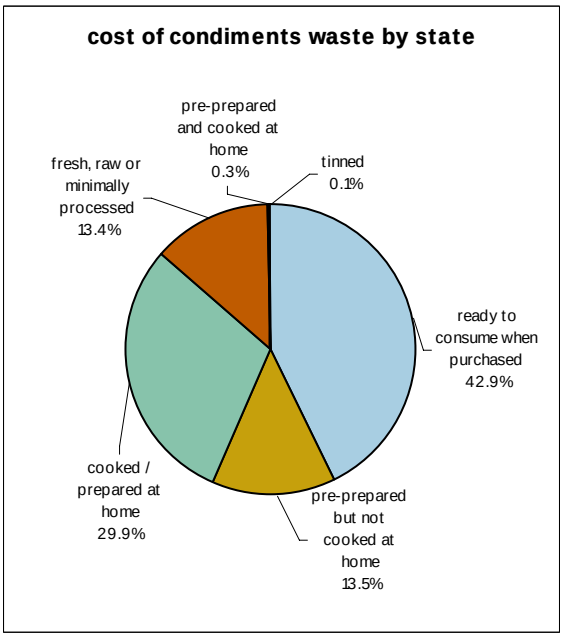
Condiments waste accounts for 2.4% and 4.9% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable). This category includes cook-in and other sauces, ketchups, mayonnaises, oils, spices and herbs (which could be fresh or packaged).





Figures 121 and 122 The weight and cost of all condiments waste by preparation state





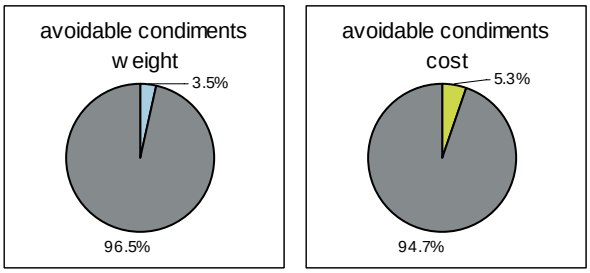
The above charts illustrate that of all the condiments waste arising, more than two thirds (66.8%) of the weight is made up of items that are ready to eat when purchased. Nearly a fifth (18.8%) is pre-prepared prior to purchase and although it requires cooking at home before being consumed, it has been thrown away uncooked. In terms of cost, over four tenths (42.9%) of condiments waste is ready to eat when purchased and three tenths (29.9%) is prepared or cooked at home. The table below gives the proportions and estimated UK annual tonnage and cost of all condiments waste by preparation state.

Table 97 The proportion and annual tonnage and cost of all condiments waste by preparation state

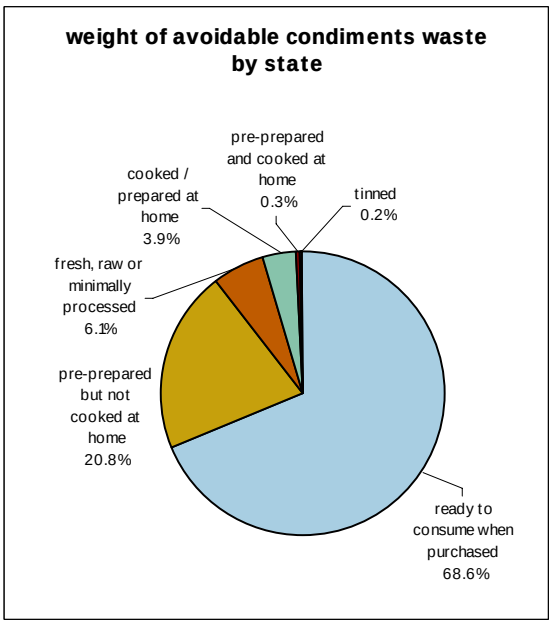
Preparation state	Weight of all condiments waste	Cost of all condiments waste	Weight (tonnes pa)	Cost (£ million pa)
All condiments waste	100% (2.4% of all waste)	100% (4.9% of all waste)	157,900	£710
Ready to consume when purchased	66.8%	42.9%	105,400	£300
Pre-prepared but not cooked at home	18.8%	13.5%	29,700	£100
Cooked/prepared at home	8.1%	29.9%	12,800	£210
Fresh, raw or minimally processed	5.8%	13.4%	9200	£100
Pre-prepared and cooked at home	0.3%	0.2%	500	<£10
Tinned	0.2%	0.1%	300	<£10

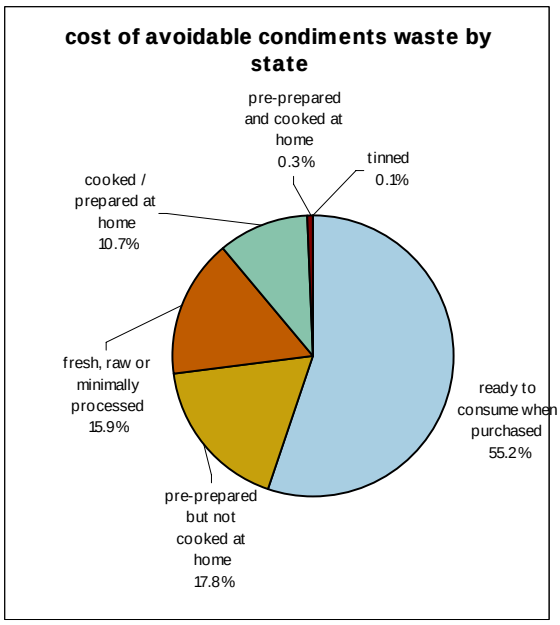
4.12.2 The weight and cost of avoidable condiments waste

Condiments waste accounts for 3.5% and 5.3% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).



Figures 123 and 124 The weight and cost of avoidable condiments waste by preparation state





The above charts illustrate that of the avoidable condiments waste generated more than two thirds by weight (68.6%) are items that are ready to eat when purchased. A fifth (20.8%) are items that are pre-prepared before purchase and are thrown away uncooked. In terms of cost, more than half (55.2%) of avoidable condiments waste consists of items that are ready to eat when bought and just less than a fifth (17.8%) are pre-prepared but uncooked.

The table below gives the proportions and estimated UK annual tonnage and cost of avoidable condiments waste by preparation state.

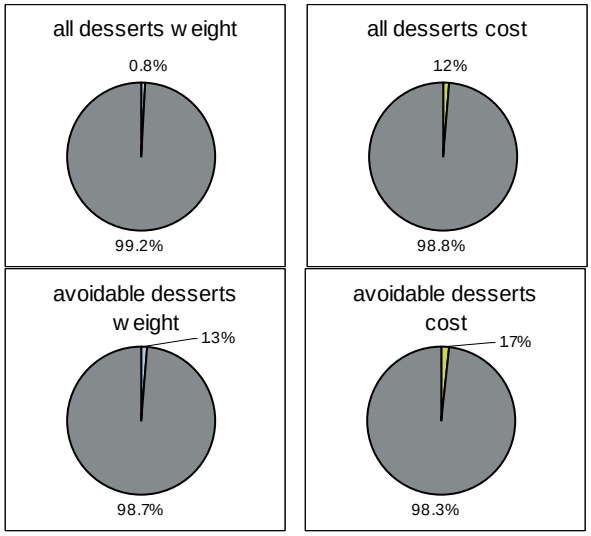
Table 98 The proportion and annual tonnage and cost of avoidable condiments waste by preparation state

Preparation state	Weight of avoidable condiments waste	Cost of avoidable condiments waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable condiments waste	100% (3.5% of avoidable food waste)	100% (5.3% of avoidable food waste)	142,400	£540
Ready to consume when purchased	68.6%	55.2%	97,700	£300
Pre-prepared but not cooked at home	20.8%	17.8%	29,600	£100
Fresh, raw or minimally processed	6.1%	15.9%	8700	£90
Cooked/prepared at home	3.9%	10.7%	5600	£60
Pre-prepared and cooked at home	0.3%	0.3%	500	<£10
Tinned	0.2%	0.1%	300	<£10

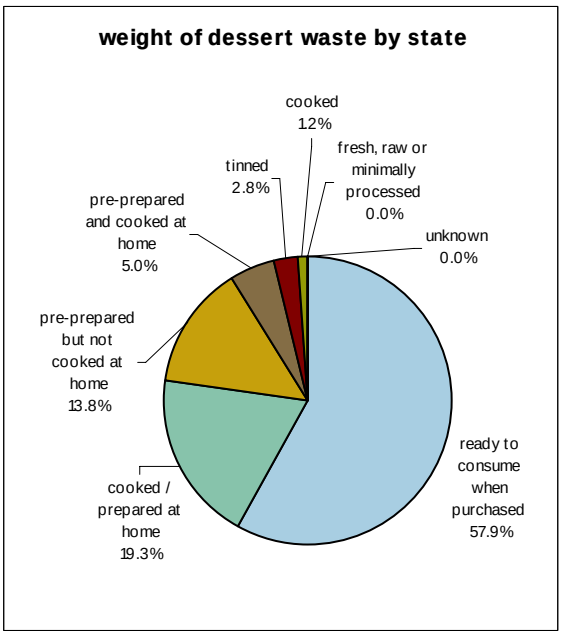
4.13 In what preparation state are desserts?

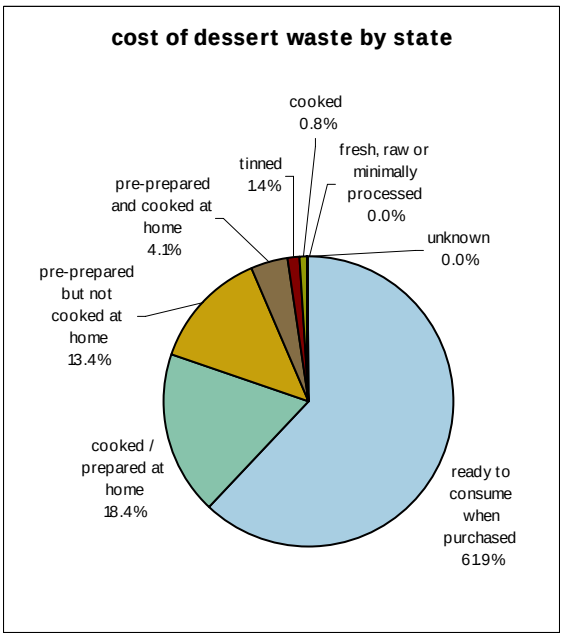
4.13.1 The weight and cost of all desserts waste

Desserts account for 0.8% of the weight and 1.2% of the cost of all food waste (avoidable, potentially avoidable and unavoidable). Desserts account for 1.3% of the weight and 1.7% of the cost of avoidable food waste (food that could have been eaten if managed or stored better). All of the desserts waste is avoidable waste, in that it could have been eaten if it had not been left on the plate, spoilt or allowed to go past its best.



Figures 125 and 126 The weight and cost of desserts waste by preparation state





The above charts illustrate that of all the desserts waste, nearly six tenths (57.9%) by weight is made up of items that are ready to eat when purchased and a fifth (19.3%) is cooked or prepared within the home. In terms of cost, more than six tenths (61.9%) are items that are ready to eat at the time of purchase and just less than a fifth (18.4%) is cooked or prepared within the home.

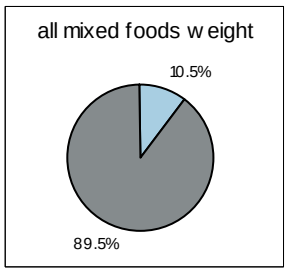
The table below gives the proportions and estimated UK annual tonnage and cost of desserts waste by preparation state.

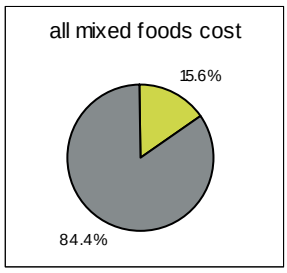
Table 99 The proportion and annual tonnage and cost of desserts waste by preparation state

Preparation state	Weight of desserts waste	Cost of desserts waste	Weight (tonnes pa)	Cost (£ million pa)
All desserts waste	100% (0.8% of all food waste, 1.3% of avoidable food waste)	100% (1.2% of all food waste, 1.7% of avoidable food waste)	54,200	£170
Ready to consume when purchased	57.9%	61.9%	31,400	£110
Cooked/prepared at home	19.3%	18.4%	10,400	£30
Pre-prepared but not cooked at home	13.8%	13.4%	7500	£20
Pre-prepared and cooked at home	5.0%	4.1%	2700	£10
Tinned	2.8%	1.4%	1500	<£10
Cooked	1.2%	0.8%	600	<£10

4.14 In what preparation state is mixed foods waste?

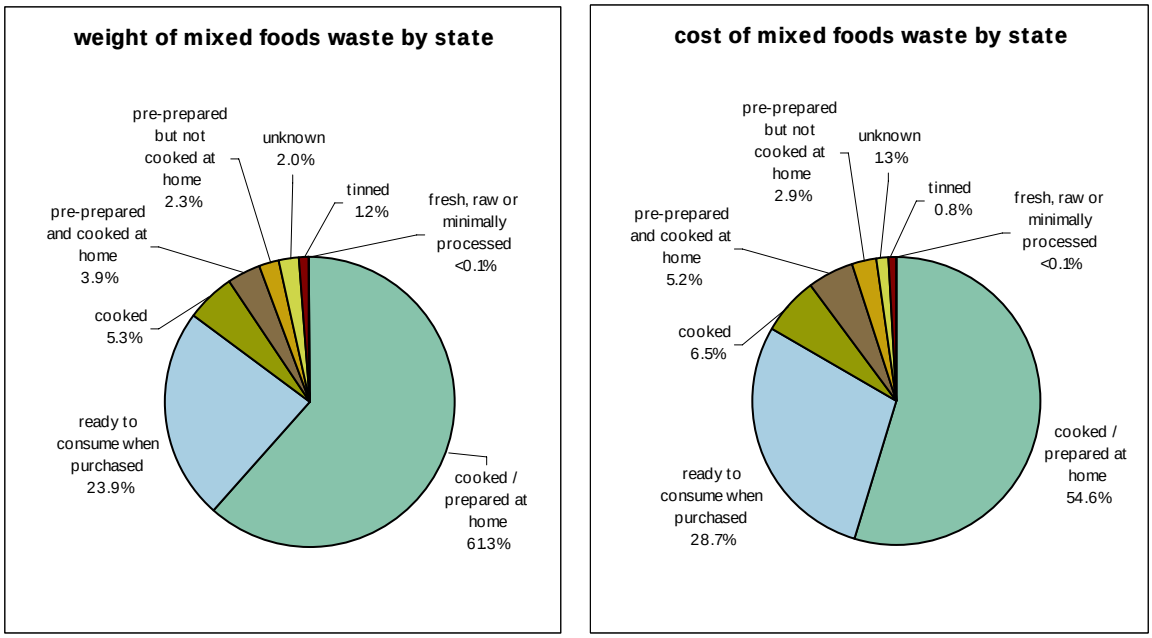
4.14.1 The weight and cost of all mixed foods waste





Mixed foods waste accounts for 10.5% and 15.6% of the weight and cost of all food waste (avoidable, potentially avoidable and unavoidable). Mixed foods waste is waste comprising of two or more food groups, e.g. grated cheese and carrot or a mixed meal like shepherd's pie or pizza. It should be noted that mixed meals could have been prepared by the manufacturer or cooked from scratch at home and it was often difficult to distinguish between the two during the sorting process unless the waste was within packaging. Therefore some food waste may be incorrectly categorised with respect to its preparation state.

Figures 127 and 128 The weight and cost of all mixed foods waste by preparation state



The above charts illustrate that of all the mixed foods waste arising, more than six tenths (61.3%) by weight is made up of items that are cooked or prepared at home. Nearly a quarter (23.9%) is food items that are ready to eat when purchased. In terms of cost, more than half (54.6%) of mixed foods waste is attributable to items that are prepared or cooked at home and nearly three tenths (28.7%) are items that are ready to eat when purchased.

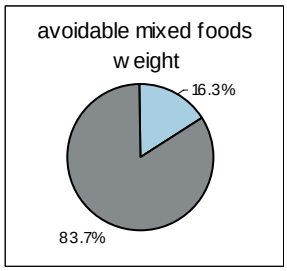
The table below gives the proportions and estimated UK annual tonnage and cost of all mixed foods waste by preparation state.

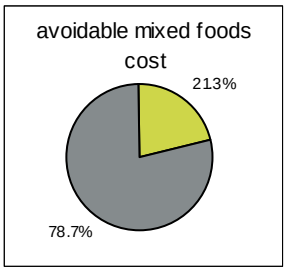
Table 100 The proportion and annual tonnage and cost of all mixed foods waste by preparation state

Preparation state	Weight of all mixed foods waste	Cost of all mixed foods waste	Weight (tonnes pa)	Cost (£ million pa)
All mixed foods waste	100% (10.5% of all waste)	100% (15.6% of all waste)	705,100	£2250
Cooked/prepared at home	61.3%	54.6%	432,500	£1230
Ready to consume when purchased	23.9%	28.7%	168,700	£650
Cooked	5.3%	6.5%	37,100	£150
Pre-prepared and cooked at home	3.9%	5.2%	27,600	£120
Pre-prepared but not cooked at home	2.3%	2.9%	16,400	£60
Unknown	2.0%	1.3%	14,200	£30
Tinned	1.2%	0.8%	8500	£20
Fresh, raw or minimally processed	<0.1%	<0.1%	100	<£10

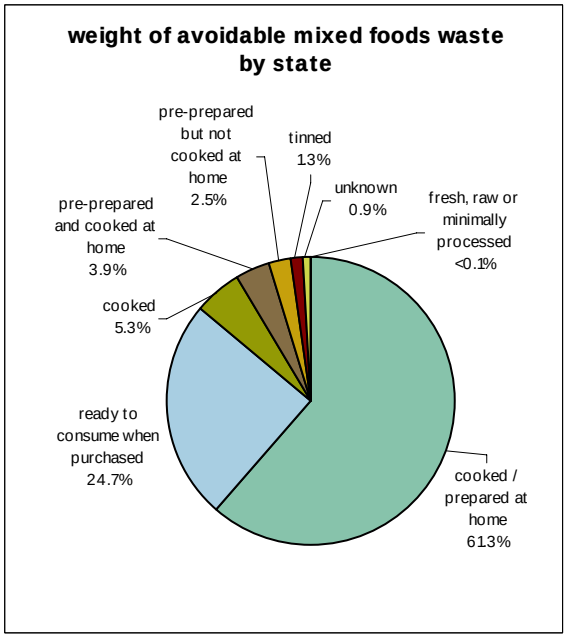
4.14.2 The weight and cost of avoidable mixed foods waste

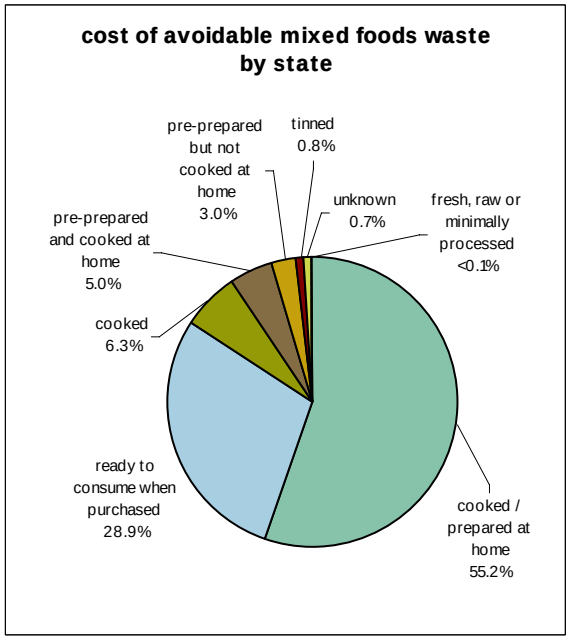
Mixed foods waste accounts for 16.3% and 21.3% of the weight and cost of avoidable food waste (food that could have been eaten if managed or stored better).





Figures 129 and 130 The weight and cost of avoidable mixed foods waste by preparation state





The previous charts illustrate that of the avoidable mixed foods waste generated, more than six tenths (61.3%) of the weight is made up of items that are cooked or prepared at home and a quarter (24.7%) are ready to eat at the time of purchase. In terms of cost, more than half (55.2%) of avoidable mixed foods waste consists of items that are cooked or prepared within the home and nearly three tenths (28.9%) is ready to eat when purchased.

The table below gives the proportions and UK annual tonnage and costs of avoidable mixed foods waste by preparation state.

Table 101 The proportion and annual tonnage and cost of avoidable mixed foods waste by preparation state

Preparation state	Weight of avoidable mixed foods waste	Cost of avoidable mixed foods waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable mixed foods waste	100% (16.3% of all waste)	100% (21.3% of all waste)	666,300	£2170
Cooked/prepared at home	61.3%	55.2%	408,800	£1190
Ready to consume when purchased	24.7%	28.9%	164,900	£630
Cooked	5.3%	6.3%	35,400	£140
Pre-prepared and cooked at home	3.9%	5.0%	26,000	£110
Pre-prepared but not cooked at home	2.5%	3.0%	16,400	£60
Unknown	1.3%	0.8%	8500	£20
Tinned	0.9%	0.7%	6200	£20
Fresh, raw or minimally processed	<0.1%	<0.1%	100	<£10

4.14.3 The weight and cost of key avoidable mixed foods waste

This section examines the proportions and estimated UK annual weights and costs of the main mixed foods wastes which are:

- meat and fish-based meals (24.3% of the avoidable mixed foods waste by weight and 27.8% by cost);
- vegetable-based meals (14.4% of the avoidable mixed foods waste by weight and 12.6% by cost);
- pasta-based meals (13.1% of the avoidable mixed foods waste by weight and 11.2% by cost);
- rice-based meals (12.8% of the avoidable mixed foods waste by weight and 11.4% by cost); and
- pizza (4.8% of the avoidable mixed foods waste by weight and 7.9% by cost).

Table 102 The proportion and annual tonnage and cost of avoidable mixed meat and fish-based meals by preparation state

Preparation state	Weight of avoidable meat and fish meals waste	Cost of avoidable meat and fish meals waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable meat and fish meals	100% (24.3% of avoidable mixed foods waste)	100% (27.8% of avoidable mixed foods waste)	161,800	£600
Cooked/prepared at home	53.3%	49.9%	86,200	£300
Ready to consume when purchased	31.6%	33.7%	51,100	£200
Cooked	5.9%	6.5%	9500	£40
Pre-prepared but not cooked at home	3.9%	4.5%	6300	£30
Pre-prepared and cooked at home	3.3%	3.8%	5300	£20
Tinned	1.1%	1.2%	1800	£10
Unknown	0.9%	0.4%	1400	<£10

Table 103 The proportion and annual tonnage and cost of avoidable mixed vegetable-based meals by preparation state

Preparation state	Weight of avoidable vegetable meals waste	Cost of avoidable vegetable meals waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable vegetable meals	100% (14.4% of avoidable mixed foods waste)	100% (12.6% of avoidable mixed foods waste)	95,900	£270
Cooked/prepared at home	80.8%	77.1%	77,500	£210
Ready to consume when purchased	9.8%	12.3%	9400	£30
Cooked	6.7%	7.1%	6400	£20
Pre-prepared and cooked at home	2.4%	3.1%	2300	£10
Tinned	0.3%	0.4%	300	<£10

Table 104 The proportion and annual tonnage and cost of avoidable mixed pasta-based meals by preparation state

Preparation state	Weight of avoidable pasta meals waste	Cost of avoidable pasta meals waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable pasta meals	100% (13.1% of avoidable mixed foods waste)	100% (11.2% of avoidable mixed foods waste)	87,100	£240
Cooked/prepared at home	74.9%	73.8%	65,200	£180
Ready to consume when purchased	7.6%	7.7%	6600	£20
Pre-prepared and cooked at home	5.5%	6.9%	4800	£20
Pre-prepared but not cooked at home	4.9%	5.9%	4200	£10
Tinned	4.1%	2.5%	3500	£10
Cooked	1.8%	1.5%	1600	<£10
Unknown	1.2%	1.7%	1000	<£10

Table 105 The proportion and annual tonnage and cost of avoidable mixed rice-based meals by preparation state

Preparation state	Weight of avoidable rice meals waste	Cost of avoidable rice meals waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable rice meals	100% (12.8% of avoidable mixed foods waste)	100% (11.4% of avoidable mixed foods waste)	85,000	£250
Cooked/prepared at home	67.8%	66.1%	57,600	£160
Ready to consume when purchased	22.9%	23.5%	19,500	£60
Cooked	5.3%	5.5%	4500	£10
Pre-prepared and cooked at home	2.3%	3.0%	2000	£10
Unknown	1.6%	1.7%	1400	<£10
Pre-prepared but not cooked at home	0.1%	0.1%	100	<£10

Table 106 The proportion and annual tonnage and cost of avoidable pizza waste by preparation state

Preparation state	Weight of avoidable pizza waste	Cost of avoidable pizza waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable pizza waste	100% (4.8% of avoidable mixed foods waste)	100% (7.9% of avoidable mixed foods waste)	31,900	£170
Ready to consume when purchased	48.5%	47.6%	15,500	£80
Pre-prepared and cooked at home	23.8%	24.4%	7600	£40
Cooked/prepared at home	12.0%	11.4%	3800	£20
Cooked	9.4%	10.5%	3000	£20
Pre-prepared but not cooked at home	6.3%	6.2%	2000	£10

4.15 The estimated annual tonnage and cost of avoidable food waste by food state

The following tables summarise the estimated weight (Table 107) and cost (Table 108) of avoidable food waste that is thrown away by UK households according to the reasons for disposing of the uneaten food.

Table 107 The estimated annual weight (tonnes) of avoidable food waste by food preparation state

	Total weight	Fresh, raw or minimally processed	Cooked / prepared at home	Ready to consume when purchased	Cooked	Pre-prepared cooked	Pre-prepared uncooked	Tinned	Unknown
Bakery	782,400	545,600	112,400	92,100	17,000	6800	8500	0	0
Meat and fish	278,800	99,000	65,000	74,700	4400	17,000	15,200	3400	100
Dairy	187,000	182,100	4200	600	0	0	0	0	0
Dried food	164,900	30,400	82,100	32,500	800	1600	17,500	0	0
Fruit	550,800	463,000	79,500	600	400	0	3600	3400	400
Salad	271,300	114,800	83,800	72,200	0	0	0	500	0
Vegetables	752,500	389,000	243,300	65,900	3400	7300	23,200	18,100	2500
Confectionery	62,500	4300	1500	56,600	100	0	0	0	0
Drinks	147,500	27,300	0	120,300	0	0	0	0	0
Condiments	142,400	8700	5600	97,700	0	500	29,600	300	0
Desserts	54,100	0	10,400	31,300	600	2700	7500	1500	0
Mixed foods	666,300	100	408,800	164,900	35,400	26,000	16,400	8500	6200
Other	19,700	0	0	12,700	900	0	300	900	4900
Total	**4,080,400**	**1,864,400**	**1,096,600**	**822,000**	**63,000**	**61,900**	**121,800**	**36,500**	**14,100**

Table 108 The estimated annual cost (£ million) of avoidable food waste by food preparation state

	Total cost	Fresh, raw or minimally processed	Cooked / prepared at home	Ready to consume when purchased	Cooked	Pre-prepared cooked	Pre-prepared uncooked	Tinned	Unknown
Bakery	£1430	£870	£210	£260	£50	£20	£20	£0	£0
Meat and fish	£1470	£620	£330	£330	£20	£70	£70	£20	<£10
Dairy	£560	£540	£10	<£10	£0	£0	£0	£0	£0
Dried food	£440	£60	£190	£110	<£10	£10	£70	£0	£0
Fruit	£1090	£900	£160	<£10	<£10	£0	£10	£10	<£10
Salad	£620	£230	£160	£230	£0	£0	£0	<£10	£0
Vegetables	£1000	£540	£310	£90	<£10	£10	£30	£20	<£10
Confectionery	£350	£30	£10	£310	<£10	£0	£0	£0	£0
Drinks	£280	£80	£0	£200	£0	£0	£0	£0	£0
Condiments	£540	£90	£60	£300	£0	<£10	£100	<£10	£0
Desserts	£170	£0	£30	£100	<£10	£10	£20	<£10	£0
Mixed foods	£2170	<£10	£1190	£630	£140	£110	£60	£20	£20
Other	£70	£0	£0	£40	<£10	£0	<£10	<£10	£30
Total	**£10,180**	**£3940**	**£2670**	**£2610**	**£220**	**£230**	**£380**	**£80**	**£50**

4.16 Summary of chapter

This chapter has provided estimated annual weights and costs associated with food waste according to the different food preparation states. Key findings include these points:

- of the avoidable food waste, analysis by weight indicates that the most frequently disposed of items are foods that are thrown away in their natural or uncooked state. These foods make up more than 1.8 million tonnes of avoidable food waste each year in the UK;
- foods that are most likely to be thrown away uncooked or untouched are:
  - uneaten slices of bread which account for 327,000 tonnes of food waste each year in the UK;
  - untouched apples which account for 189,900 tonnes of food waste in the UK each year;
  - uncooked potatoes which make up 176,000 tonnes of food waste each year in the UK;
  - uneaten yoghurts which account for 67,300 tonnes of food waste each year in the UK; and
  - uneaten tomatoes which make up 52,500 tonnes of food waste in the UK each year;
- more than a million tonnes of avoidable food waste is thrown away after it has been prepared or cooked at home. This includes:
  - 104,700 tonnes of potatoes thrown away in the UK each year;
  - 45,100 tonnes of rice thrown away each year in the UK;
  - 32,700 tonnes of pasta thrown out every year in the UK; and
  - 86,200 tonnes of meat and fish mixed meals thrown away in the UK each year.

5 The weight and cost of food thrown away whole or unopened

5.1 Introduction

This chapter provides information on the financial cost and weight of the avoidable food waste items that were disposed of whole (which may be cooked or uncooked) 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. For the purposes of this analysis 'whole or unopened' food waste is defined as:

- packs or individual items of foods which are not eaten at all such as an uneaten apple, a whole jacket potato or pot of yoghurt.

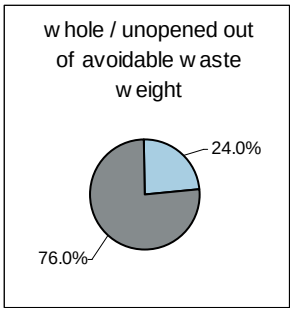
It excludes:

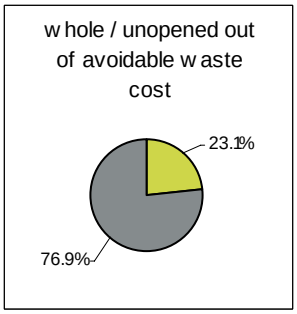
- foods thrown away partially consumed such as half a pot of yoghurt and foods that were deemed to originally have been part of a pack, such as a rasher of bacon or a slice of bread; these items are, however, included in the analysis of food waste in Sections 5.4 onwards for the different food groups;
- fruit and vegetable items that are not normally purchased in singe units (such as a grape or cherry tomato); these items are, however, included in the analysis of fresh food waste in Section 5.4; and
- items that were classified as a preparation state of 'fresh, raw or minimally processed' (see Chapter 4) during the food sorting process but were not described as being intact; although it is likely that these items are in fact untouched, because we cannot be completely certain they have been excluded. This means that this chapter is likely to under-report items thrown away whole.

Information is provided on the main food groups and then each food type within each of the main food groups. Where food was thrown away in its packaging, the weight of the packaging is not included. An analysis of food waste thrown away in packaging can be found in Chapter 6.

5.2 What are we disposing of whole or unopened?

Of all the avoidable food waste (i.e. food that could have been eaten if it had been better stored or managed) thrown away, nearly a quarter (24.0%) of it by weight is disposed of whole or unopened. In terms of cost nearly a quarter (23.1%) of avoidable food waste is thrown away in a whole or unopened state.





A fifth of avoidable food waste consists of whole single items and just less than a twentieth is food thrown away as whole packets or bags. Every year in the UK, households throw away 9450 million packs and single units of food that could have been eaten if managed or stored better.

Table 109 The proportion, annual weight (tonnes), cost (£ million) and number of units of food waste thrown away whole or unopened each year in the UK

	% weight of avoidable food waste	% cost of avoidable food waste	Weight (tonnes)	Cost (£ million)	Number of units (million)
Whole individual items	20.7%	18.4%	844,100	£1880	8800
Whole packets	3.3%	4.7%	134,700	£480	650
Total	24.0%	23.1%	978,800	£2350	9450

5.3 What types of food are we throwing away whole or unopened?

The avoidable food that is most commonly thrown away whole or unused is fruit; fruit thrown away whole makes up nearly a tenth (7.7%) of all avoidable food waste. Every year, UK households throw away 2890 million single whole items of fruit (i.e. fruit that can normally be purchased as single units) and 20 million unopened bags, packets or punnets of fruit.

The number of vegetables thrown away whole makes up nearly a twentieth (4.7%) of all avoidable food waste. Every year, UK households throw away 1910 million single whole items of vegetables and 70 million full bags or packets of vegetables.

The estimated weight, cost and number of food items thrown away whole each year by UK households are provided in the table below.

Table 110 The proportion, annual weight (tonnes), cost (£ million) and number of units of food waste thrown away whole or unopened each year in the UK by food group (only things that can be purchased in single units)

Food group	Whole waste	% weight of avoidable food waste	% cost of avoidable food waste	Weight (tonnes)	Cost (£ million)	Number (million)
Fruit	Packets	0.2%	0.2%	8200	£20	20
	Individual	7.5%	5.4%	306,500	£550	2890
Vegetables	Packets	0.6%	0.5%	23,400	£50	70
	Individual	4.1%	2.0%	167,100	£200	1910
Bakery	Packets	0.5%	0.5%	19,400	£60	70
	Individual	2.8%	2.4%	114,600	£240	1240
Dairy	Whole	1.9%	2.1%	76,900	£222	760
Meat and fish	Packets	0.6%	1.4%	26,400	£140	100
	Individual	1.1%	2.8%	44,100	£280	650
Salad	Packets	0.4%	0.5%	15,900	£50	70
	Individual	1.1%	0.7%	44,100	£80	630
Mixed meal	Packets	0.3%	0.4%	11,000	£40	40
	Individual	0.8%	1.3%	33,800	£130	320
Confectionery	Packets	0.2%	0.4%	7400	£50	140
	Individual	0.1%	0.3%	4400	£30	130
Drinks	Individual	0.7%	0.8%	30,000	£80	120
Desserts	Individual	0.4%	0.4%	14,300	£50	110
Condiments	Individual	0.4%	0.6%	18,000	£60	90
Dried foods	Packets	0.3%	0.4%	13,200	£40	100
All whole or unopened food waste	Individual	20.7%	18.4%	844,100	£1,880	8,800
	Packets	3.3%	4.7%	134,700	£480	650
	Total	24.0%	23.1%	978,800	£2,350	9,450

5.4 How many units of fresh fruit, vegetables and salad are we throwing away whole?

Because fruit, vegetables and salad, taken together, are the most significant type of food wasted whole or unopened, this section looks at the number of single units that are thrown away whole or unused. Where these foods have been thrown away in whole packets or bags, the number of single units has been calculated according to the total weight of the waste. This analysis therefore provides an estimate of the number of single items of fresh fruit, vegetables and salads that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole that are not normally purchased as a single unit (such as a grape) are included in this analysis, unlike in Sections 5.2 and 5.3 above. The estimated weight, cost and number of food items thrown away whole each year by UK households are provided in the table below.

Table 111 The annual weight (tonnes), cost (£ million) and number of units of fresh fruit, vegetables and salads thrown away whole each year in the UK

Type of fresh fruit, vegetable or salad	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Apples	1600	178,800	300
Potatoes	1870	177,400	140
Bananas	600	78,400	90
Tomatoes	1030	46,000	80
Oranges	450	45,300	70
Carrots	480	37,200	30
Pears	350	37,000	60
Onions	250	29,300	20
Lettuces	100	21,500	20
Plums	370	18,700	70
Grapes	4830	17,900	40
Beans	210	17,100	60
Sweetcorn	160	14,400	20
Celery	110	13,100	30
Mushrooms	520	12,000	30
Peppers	80	9800	30
Strawberries	190	8800	30
Spring onions	290	4600	20
Other	650	171,100	440
All	14,130	938,400[21]	1580

5.5 How many units of bakery items are we throwing away whole?

This section looks at the number of single units of bakery items that are thrown away whole or unused. For biscuits the number of whole packets has been stated; for other bakery items the number of individual items (e.g. bread rolls, croissants) is given. This analysis provides an estimate of the number of bakery items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole that are not normally purchased as a single unit (such as a slice of bread) are included in this analysis. The estimated weight, cost and number of bakery items thrown away whole each year by UK households are provided in the table below.

[21] *Note that the totals in this and the following tables in this section are not comparable with the figures in Table 110 because they include items that would not normally be purchased individually, for example grapes.*

Table 112 The annual weight (tonnes), cost (£ million) and number of units of bakery items thrown away whole each year in the UK

Type of bakery food	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Bread slices	2570	119,000	£40
Bread rolls	775	53,100	£80
World bread items	396	32,600	£130
Loaves of bread	69	31,200	£50
Cakes	274	15,500	£10
Pastries	154	12,000	£30
Doughnuts	93	5900	£10
Crumpets	82	4900	<£10
Biscuits (whole packs)	12	2700	£10
Croissants	23	1000	£130
Other bakery	39	4000	£20
All	4488	281,900	£490

5.6 How many units of meat and fish are we throwing away whole?

This section looks at the number of meat and fish items that are thrown away whole or unused. Except where stated, the number of single units (e.g. burgers) is given rather than the number of packets. This analysis provides an estimate of the number of single meat and fish items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole that are not normally purchased as a single unit (such as a slice of ham) are included in this analysis. The estimated weight, cost and number of meat and fish items thrown away whole each year by UK households are provided in the table below.

Table 113 The annual weight (tonnes), cost (£ million) and number of units of meat and fish thrown away whole each year in the UK

Type of meat and fish	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Sausages	440	16,800	£60
Chicken portions	120	13,700	£70
Ham slices	360	8500	£30
Fish portions	60	7700	£60
Bacon rashers	200	7200	£50
Beef portions	30	4700	£30
Pork portions	30	3400	£10
Sandwich spreads (pots)	20	2900	£10
Burgers	30	2600	£10
Mince (pack)	10	2200	£10
Pork chops	10	1700	£10
Shellfish	60	1200	£10
Processed chicken portions	40	1100	£10
Hotdogs	30	1000	<£10
Turkey portions	20	900	<£10
Other meat and fish portions	40	13,200	£130
All	1500	88,800	£511

5.7 How many units of dairy items are we throwing away whole?

This section looks at the number of single units of dairy items that are thrown away whole or unused. Except where stated, the number of single units (e.g. eggs) is given rather than the number of packets. This analysis provides an estimate of the number of single dairy items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole that are not normally purchased as a single unit (such as eggs) are included in this analysis. The estimated weight, cost and number of dairy items thrown away whole each year by UK households are provided in the table below.

Table 114 The annual weight (tonnes), cost (£ million) and number of units of dairy foods thrown away whole each year in the UK

Type of dairy	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Yoghurts and yoghurt drinks (unopened pots)	484	52,900	£130
Eggs (whole)	240	14,500	£50
Cheese (unopened packets)	96	6800	£40
Milk (full containers)	8	4600	<£10
Cream (unopened pots)	5	1200	<£10
Butter (unopened packs)	2	700	<£10
Crème fraîche (unopened pots)	1	400	<£10
Margarine (unopened packs)	2	<100	<£10
All	839	81,100	£230

5.8 How many units of dried foods are we throwing away whole?

This section looks at the number of single units of dried food items that are thrown away whole or unused. Where these foods have been thrown away in whole packets or bags consisting of multiple sachets, the number of single sachets has been analysed. This analysis provides an estimate of the number of single dried food items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole that are not normally purchased as a single unit (such as Weetabix) are included in this analysis. The estimated weight, cost and number of dried food items thrown away whole each year by UK households are provided in the following table.

Table 115 The annual weight (tonnes), cost (£ million) and number of units of dried foods thrown away whole each year in the UK

Type of dried food	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Pasta	20	3500	£10
Cereal/porridge (packs)	20	1900	£10
Flour	0	1800	<£10
Soup/drinks	20	1500	£10
Rice	0	1100	<£10
Pulses/seeds	0	800	<£10
Sauce/seasoning mix	10	700	£10
Cake/bread mix	0	500	<£10
Dried fruit	10	400	<£10
Pudding mix	10	300	<£10
Weetabix	10	200	<£10
Snacks	10	100	<£10
Other	10	800	<£10
All	120	13,600	£40

5.9 How many units of confectionery and snack items are we throwing away whole?

This section looks at the number of single units of confectionery and snack items that are thrown away whole or unused. Where these foods have been thrown away in whole packets or bags, the number of single units has been calculated according to the total weight of the waste. This analysis provides an estimate of the number of single confectionery and snack items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole that are not normally purchased as a single unit (such as nuts) are included in this analysis. The estimated weight, cost and number of confectionery and snack items thrown away whole each year by UK households are provided in the table below.

Table 116 The annual weight (tonnes), cost (£ million) and number of units of confectionery and snack items thrown away whole each year in the UK

Type of confectionery	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Chocolate/sweets (full packs)	259	7800	£40
Crisps (full packets)	108	3500	£20
Nuts (full packets)	26	1100	£10
Cereal bars	16	600	£10
Savoury snacks (full packets)	17	400	<£10
Prawn crackers (full packets)	8	100	<£10
Other (full packs)	19	600	<£10
All	453	14,100	£90

5.10 How many units of drinks items are we throwing away whole?

This section looks at the number of single units of drinks items that are thrown away whole or unused. The exception to this is coffee which is analysed as whole packs. This analysis provides an estimate of the number of single drinks items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole that are not normally purchased as a single unit (such as teabags) are included in this analysis. The estimated weight, cost and number of drinks items thrown away whole each year by UK households are provided in the table below.

Table 117 The annual weight (tonnes), cost (£ million) and number of drinks items thrown away whole each year in the UK

Type of drink	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Milkshakes (bottles)	20	9300	£10
Soda (bottles or cans)	13	4400	£10
Water (bottles)	13	4200	<£10
Squash (cartons or bottles)	19	2900	<£10
Fruit juice (cartons)	4	2100	<£10
Coffee (packs)	32	1600	£20
Teabags (unused)	191	1500	£10
Lager (bottles or cans)	1	400	<£10
Other	10	4800	£30
All	305	31,200	£85

5.11 How many units of condiments, sauces, oils and spices are we throwing away whole?

This section looks at the number of single units of condiments, sauces, oils and spices that are thrown away whole or unused. Where these foods have been thrown away in whole packets or bags, the number of single units has been calculated according to the total weight of the waste. This analysis provides an estimate of the number of single condiment items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole that are not normally purchased as a single unit (such as takeaway sachets of dips) are included in this analysis. The estimated weight, cost and number of condiment items thrown away whole each year by UK households are provided in the table below.

Table 118 The annual weight (tonnes), cost (£ million) and number of units of condiments, sauces, oils and spices thrown away whole each year in the UK

Type of condiment, sauce, oil, spice	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Cook-in sauces (whole packs)	10	4900	£20
Other sauces (whole packs)	20	3500	£10
Sauce sachets	80	2300	£10
Dips (whole packs)	10	900	<£10
Garlic (cloves)	20	800	£10
Spreads (whole packs)	<10	600	<£10
Olives (whole packs)	<10	500	<£10
Other condiments (whole packs)	<10	500	<£10
Herbs/spices (whole packs)	<10	400	<£10
Pickles (whole packs)	<10	300	<£10
Ketchup (whole packs)	<10	200	<£10
Gravy (whole packs)	<10	100	<£10
Salad cream (whole packs)	<10	100	<£10
Other (whole packs)	10	5200	£10
All	150	20,300	£66

5.12 How many units of desserts are we throwing away whole?

This section looks at the number of single units of desserts that are thrown away whole or unused. Where these foods have been thrown away in whole packets or bags, the number of single units has been calculated according to the total weight of the waste. This analysis provides an estimate of the number of single dessert items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole but which make up only part of a whole pack (such as four apple pies in a packet that originally held six) are included in this analysis. The estimated weight, cost and number of desserts thrown away whole each year by UK households are provided in the table below.

Table 119 The annual weight (tonnes), cost (£ million) and number of units of desserts thrown away whole each year in the UK

Type of dessert	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Gateaux	30	4000	£20
Fruit pies	30	3100	£10
Milk puddings	10	2500	£10
Trifles	10	1900	£10
Ice lollies	30	1400	<£10
Chocolate desserts	10	1000	<£10
Mousses	10	900	<£10
Cheesecakes	<10	500	<£10
Ice creams	10	400	<£10
Jellies	<10	300	<£10
Other	20	1700	£10
All	160	17,700	£60

5.13 How many units of mixed foods are we throwing away whole?

This section looks at the number of single units of mixed foods that are thrown away whole or unused. Where these foods have been thrown away in whole packets or bags, the number of single units has been calculated according to the total weight of the waste. This analysis provides an estimate of the number of single mixed foods items that are thrown away whole that could have been eaten if they had been better stored or managed. Items of food waste thrown away whole but which make up only part of a whole pack (such as four onion bhajis in a packet that originally held six) are included in this analysis. The estimated weight, cost and number of mixed food items thrown away whole each year by UK households are provided in the table below.

Table 120 The annual weight (tonnes), cost (£ million) and number of units of mixed foods thrown away whole each year in the UK

Type of mixed food	Units	Weight	Cost
	Total (million)	Total (tonnes)	Total (£ million)
Meat meals (whole unopened)	120	14,900	£60
Sausage rolls	100	6700	£20
Pies/pasties (whole unopened)	40	6300	£30
Pasta meals (whole unopened)	10	5900	£20
Sandwiches	30	5100	£20
Pizzas	20	4300	£20
Vegetable meals (whole unopened)	10	2800	£10
Samosas	40	2300	£20
Snacks	50	2300	£20
Kebabs	40	2000	£10
Fish meals (whole unopened)	10	1900	£10
Pork pies	30	1500	£10
Scotch eggs	40	1500	£10
Soup	<10	1500	<£10
Onion bhajis	40	1100	<£10
Rice meals (whole unopened)	<10	200	<£10
Other	20	500	<£10
All	600	60,800	£240

5.14 Summary of chapter

Nearly a quarter of the food that could have been eaten if it had been stored or managed better that is thrown away by UK households is in a whole, unopened or untouched state. This food waste makes up more than 970,000 tonnes of waste every year in the UK and includes whole packets or bags of unopened foods as well as single units of food items (except those that are not normally purchased individually such as grapes and bread slices).

The food type most commonly disposed of whole and unopened is fruit; fruits make up a third of all food waste disposed of whole. A fifth of the avoidable food waste thrown away whole consists of vegetables. Every year UK households throw away 4.8 billion individual pieces and 90 million full bags of fruit and vegetables.

The weight of the fresh fruits, vegetables and salads thrown away whole (including items that are not normally purchased as single units) within the UK each year is nearly 940,000 tonnes. Nearly 40% of this avoidable food waste consists of whole individual apples and potatoes (1.6 and 1.9 billion respectively in number).

A significant number of bakery items are thrown away unused or untouched. Whole bread loaves and rolls together make up more than 80,000 tonnes of food waste. In numbers of units, 775 million bread rolls and nearly 70 million whole loaves of bread are thrown away each year in the UK. Although not purchased as a single unit, 2.6 billion slices of bread are thrown away each year in the UK, making up nearly 120,000 tonnes in weight.

Of the meat and fish items that are thrown away as whole units, sausages are the most commonly thrown away. Every year in the UK, 440 million uneaten sausages are thrown away. UK households also throw away 360 million slices of ham and 200 million rashers of bacon each year. These three foods account for more than 32,000 tonnes of avoidable food waste and cost £140 million each year.

The amount of unopened yoghurts and yoghurt drinks that are thrown away is also significant. Each year, UK households dispose of more than 52,000 tonnes of unopened yoghurts and yoghurt drinks. This is the equivalent of more than 480 million pots of yoghurt and yoghurt drinks. Every year, UK households throw away 240 million unused or uneaten eggs which weigh more than 14,000 tonnes.

120 million meat-based meals are thrown away whole every year, weighing nearly 15,000 tonnes. UK households also dispose of 100 million uneaten sausage rolls and 40 million pies and pasties with a combined annual weight of 13,000 tonnes.

6 The weight and cost of food waste thrown away still in date

6.1 Introduction

This chapter provides information on the weight and financial cost of the food waste thrown away still in date. Although we know that there is a misunderstanding of food dates amongst consumers, we don't know how this translates in terms of good food wasted.

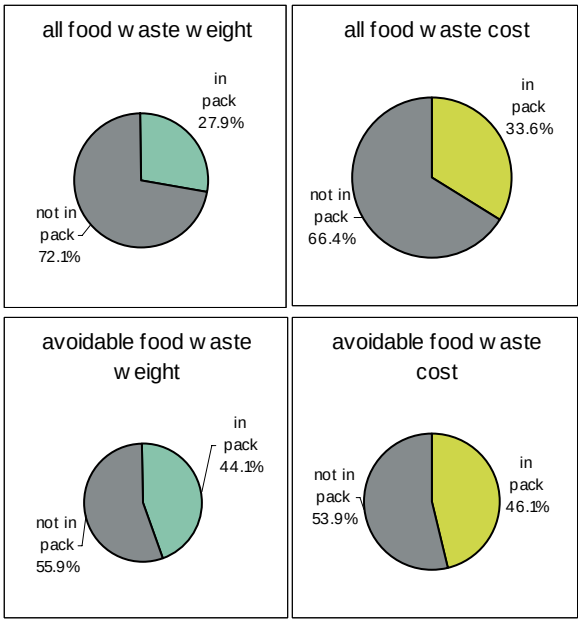
There are several methodological factors that affect the reliability of the analysis presented in this chapter and it is important to be clear about this from the outset.

1. Only food that was found in the waste still in its packaging could be included in this assessment and around seven tenths of food is thrown away unpackaged; the first part of this chapter looks at this in more depth.
2. The method used does not enable us to know when food that is in its original packaging was placed into the bin by the householder; the analysis carried out on food dates takes the collection as the date of disposal, although clearly food may have been in the bin for much longer.
3. We have not been able to take account of foods that have been frozen for some time and then disposed; these will be regarded as 'out of date' for this analysis.
4. Foods that have instructions along the lines of 'once opened eat within three days' would be classified as 'in date' if the 'best before' date had not passed but the item had been opened for more than the recommended time because the method does not enable us to distinguish this.
5. At the UK level the findings have been scaled up so they apply to all waste, not just waste found packaged and dated during the waste analysis. This approach assumes that food thrown away in packaging is similar in terms of shelf life to food thrown away not in packaging.

Although there are some aspects of the method that are likely to lead to overestimation (point 4 above, for example), overall the approach used will underestimate amounts of food thrown away in date, so the figures presented in this chapter should be read as **minimum** amounts.

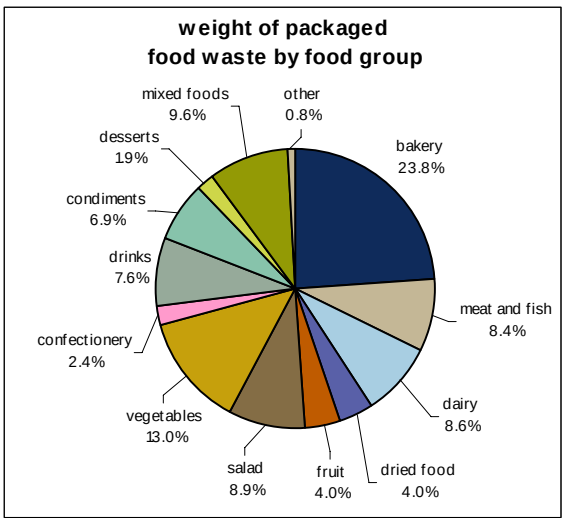
6.2 How much food is thrown away in its original packaging?

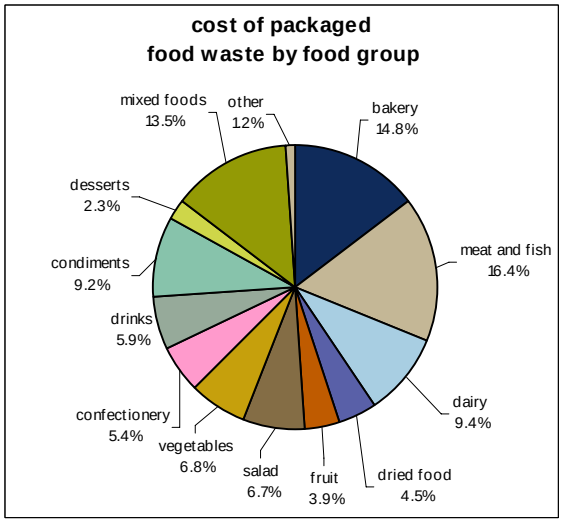
Of all the food waste that is thrown away, nearly three tenths (27.9%) by weight and a third (33.6%) by cost is in its original packaging. With respect to avoidable food waste (that is food that could have been eaten if it had been better stored or managed), more than four tenths of the weight and cost (44.1% and 46.1% respectively) is thrown away in its packaging.



6.2.1 *The weight and cost of packaged foods by food group*

Figure 131 and 132 The proportion of food waste that is thrown away in its original packaging by food group





The above charts illustrate the proportion of the weight and cost of all food waste thrown away within its original packaging. Nearly a quarter (23.8%) by weight of the packaged food waste is bakery foods and more than a tenth (13%) is made up of vegetables in their packaging. Mixed foods such as shepherd's pie, pizza or lasagne account for nearly a tenth (9.6%) of the weight of food disposed of in its packaging. Four tenths (40.6%) of the mixed foods thrown away in packaging are takeaways. By weight, at least 15% of bakery foods, 15% of vegetables and 18% of mixed meals that are thrown away in their packaging have never been used (unopened).

Less than a fifth (16.4%) of the cost of food waste thrown away in its packaging is meat and fish and a slightly lower proportion is accounted for by bakery foods (14.8%) and mixed foods (13.5%). Just over four tenths (42.7%) of the cost of mixed foods thrown away in packaging are takeaways. By cost, at least 18.3% of bakery foods, 19.6% of vegetables and 19.9% of mixed meals that are thrown away in their packaging have never been used (unopened). The table below gives estimates of the annual minimum weight (tonnes) and cost (£ million) of food that could have been eaten if better managed thrown away in packaging and without packaging in the UK.

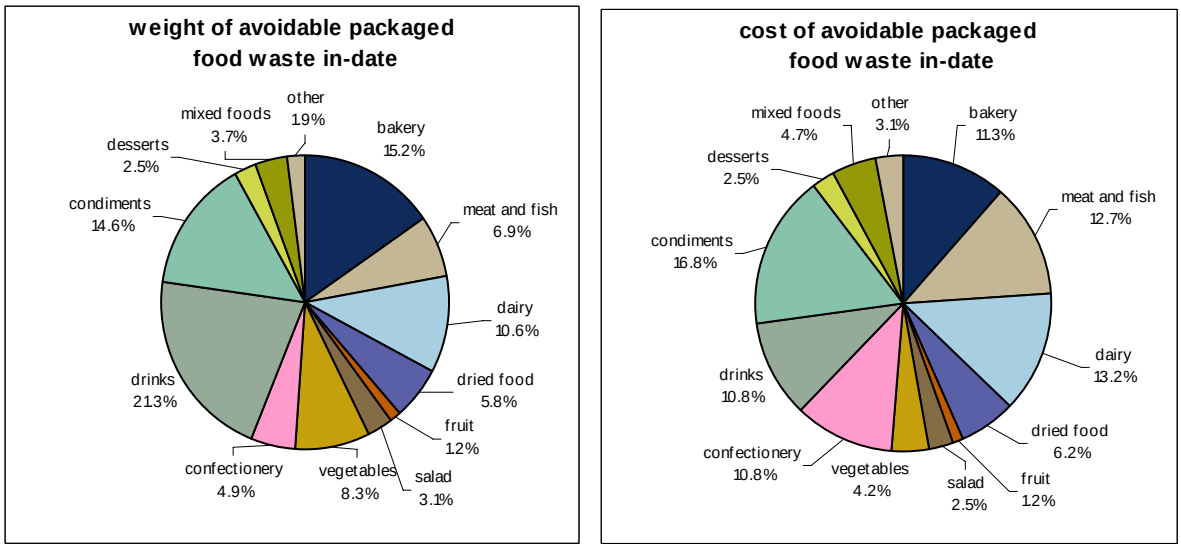
Table 121 The annual weight (tonnes) and cost (£ million) of avoidable food waste thrown away in its original packaging and without packaging in the UK each year

Food group	Weight (tonnes)		Cost (£ million)	
	Packaged	Unpackaged	Packaged	Unpackaged
Bakery	181,000	601,500	£280	£1150
Meat and fish	137,600	141,300	£700	£770
Dairy	132,200	54,800	£360	£200
Dried food	75,700	89,200	£220	£210
Fruit	74,800	476,000	£190	£900
Salad	124,100	147,200	£350	£270
Vegetables	242,600	510,000	£320	£680
Confectionery	44,800	17,800	£260	£90
Drinks	142,600	4900	£270	£10
Condiments	126,100	16,300	£430	£110
Desserts	37,200	16,900	£110	£60
Mixed foods	183,700	482,600	£650	£1520
Other	13,600	6000	£50	£20
Total	1,516,000	2,564,500	£4190	£5990

6.3 To what extent is avoidable food thrown away still in date?

This section examines the amount of avoidable food that is thrown away in dated packaging, where this date had not expired when the food waste was analysed. As explained above, this approach will **underestimate** the amount of food still in date so the quantities that follow should be regarded as minimum amounts. The results have been scaled up to apply to all food in a particular category, not just that found in dated packaging in the waste analysis.

Figure 133 and 134 The proportion of avoidable food waste that is thrown away in date



The above charts indicate that of the avoidable food that is thrown away before the date has expired, drinks make up the largest proportion at just over a fifth (21.3%) of the weight followed by bakery items at 15.2% and condiments at 14.6%. In terms of cost, condiments make up the greatest proportion at just less than a fifth (16.8%) followed by dairy at 13.2% and meat and fish at 12.7%. The table below shows the estimated proportion of avoidable food waste that is thrown away before the food date has expired.

Table 122 Estimated proportion and annual weight and cost of food waste thrown away before the date has expired in the UK each year

Avoidable food waste	Proportion of weight thrown away in date	Proportion of cost thrown away in date	Weight (tonnes pa)	Cost (£m pa)
Drinks	48.8%	36.8%	72,000	£100
Bakery	6.6%	7.4%	51,500	£110
Condiments	34.7%	29.7%	49,500	£160
Dairy	19.1%	22.5%	35,700	£130
Vegetables	3.7%	4.0%	28,000	£40
Meat and fish	8.4%	8.2%	23,400	£120
Dried food	12.0%	13.4%	19,800	£60
Confectionery	26.7%	29.2%	16,700	£100
Mixed foods	1.9%	2.1%	12,400	£40
Salad	3.9%	3.9%	10,500	£20
Desserts	15.9%	13.7%	8,600	£20
Other	33.5%	41.5%	6,600	£30
Fruit	0.7%	1.0%	3,900	£10
All avoidable food waste	8.3%	9.3%	338,700	£950

6.4 Summary of chapter

We estimate that just less than a tenth of avoidable food thrown away is still in date; this is likely to be an underestimate due to the constraints of the method used. Looking at the main food waste categories, this is most commonly the case for drinks, confectionery and condiments; these items tend to have long shelf lives which suggest that they are thrown away for reasons other than that the food has 'gone off'. Fruit, salad, vegetables and bakery items tend to be thrown away out of date, suggesting that 'going out of date' is a problem for these more perishable items.

Part Two: Why do we throw away food?

7 Reasons for throwing away uneaten foods

7.1 Introduction

Part One of this report has provided information on the types of food waste that households produce. Because of the method used, the study could not obtain information on **why** householders throw away uneaten food, only observe **what** was thrown away. Information on why certain food types were thrown away was captured during the kitchen diary exercise, and this chapter examines the reasons given during this exercise by the householders for throwing away uneaten food, by type and 'avoidability'. Because the results of this project have shown the diary results to be generally robust, we have applied the findings of the diary work to the quantities reported here to derive quantitative estimates of food waste according to reason for disposal. Because the sample size for the diary was relatively small at 284, caution should be exercised in using these results as they are likely to be less reliable than the headline results reported previously in this document.

In order to determine the avoidability of the food waste, foods were classified as one of the following:

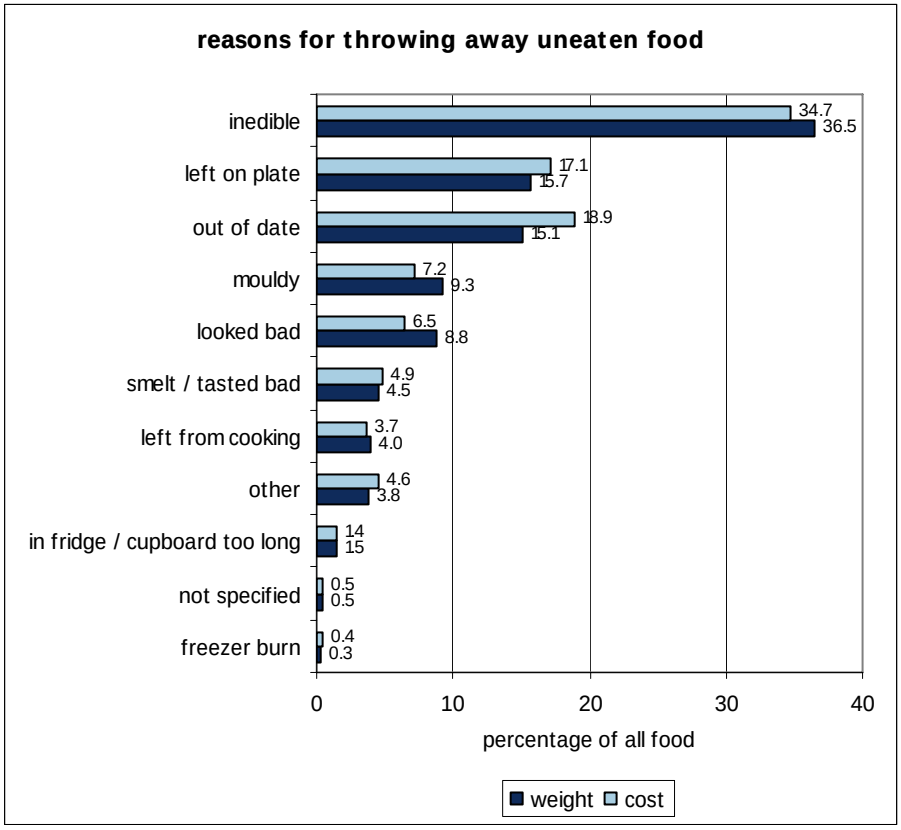
- the category 'avoidable waste' was assigned to food items that could have been eaten if they had not been allowed to go off, had not been past their food date or had been wanted (e.g. food left on the plate);
- the category 'possibly avoidable waste' was assigned to food that could be eaten but which some individuals choose not to eat, e.g. bread crusts, meat rinds and soft vegetable and fruit skins; and
- the category 'unavoidable waste' (sometimes referred to as 'inedible waste') was applied to food that could not have been eaten and includes items such as teabags, bones and hard fruit and vegetable peel.

The category 'inedible' waste that appears in the charts in this chapter relates to the diary respondents' own description of the reason why they did not eat the food. In most cases we have been unable to elaborate on this but believe that it relates to peelings, cores, bones and other genuinely inedible parts of food.

The chapter first of all looks at the reasons for disposing of **all** foods, including the unavoidable fraction, and then goes on to break down the results by food type and according to whether the food waste was avoidable or not.

7.2 Why do we throw food away?

Figure 135 Reasons for throwing away food



The above chart illustrates the proportion of uneaten food that is thrown away by the reason for disposal. More than a third of food in terms of both weight and cost is thrown away because it is perceived as being 'inedible'. The next most significant reasons for throwing away food are a) that it is left on the plate after a meal and b) that the item is past its 'use by' or 'best before' date.

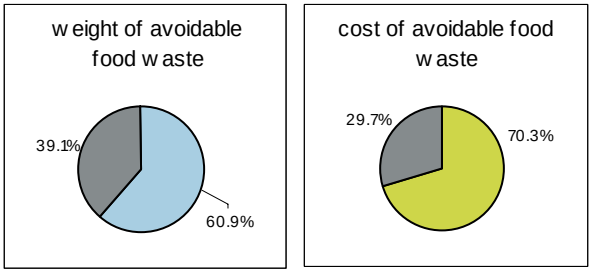
Table 123 The proportion and annual tonnage and cost of all food waste by stated reason for disposal

Stated reason for disposal	Weight of all food waste	Cost of all food waste	Weight (tonnes pa)	Cost (£ million pa)
All food waste	100%	100%	6,700,200	£14,480
Inedible	36.5%	34.7%	2,445,600	£5020
Left on plate	15.7%	17.1%	1,051,900	£2480
Out of date	15.1%	18.9%	1,011,700	£2740
Mouldy	9.3%	7.2%	623,100	£1040
Looked bad	8.8%	6.5%	589,600	£940
Smelt/tasted bad	4.5%	4.9%	301,500	£710
Left from cooking	4.0%	3.7%	268,000	£540
Other	3.8%	4.6%	254,600	£670
In fridge/cupboard too long	1.5%	1.4%	100,500	£200
Not specified	0.5%	0.5%	33,500	£70
Freezer burn	0.3%	0.4%	20,100	£60

Food is most often thrown away because it is deemed to be 'inedible'.[22] The above table indicates that when this finding is applied to the compositional research data, every year in the UK households throw away more than 2.4 million tonnes of food because it is deemed to be 'inedible'.

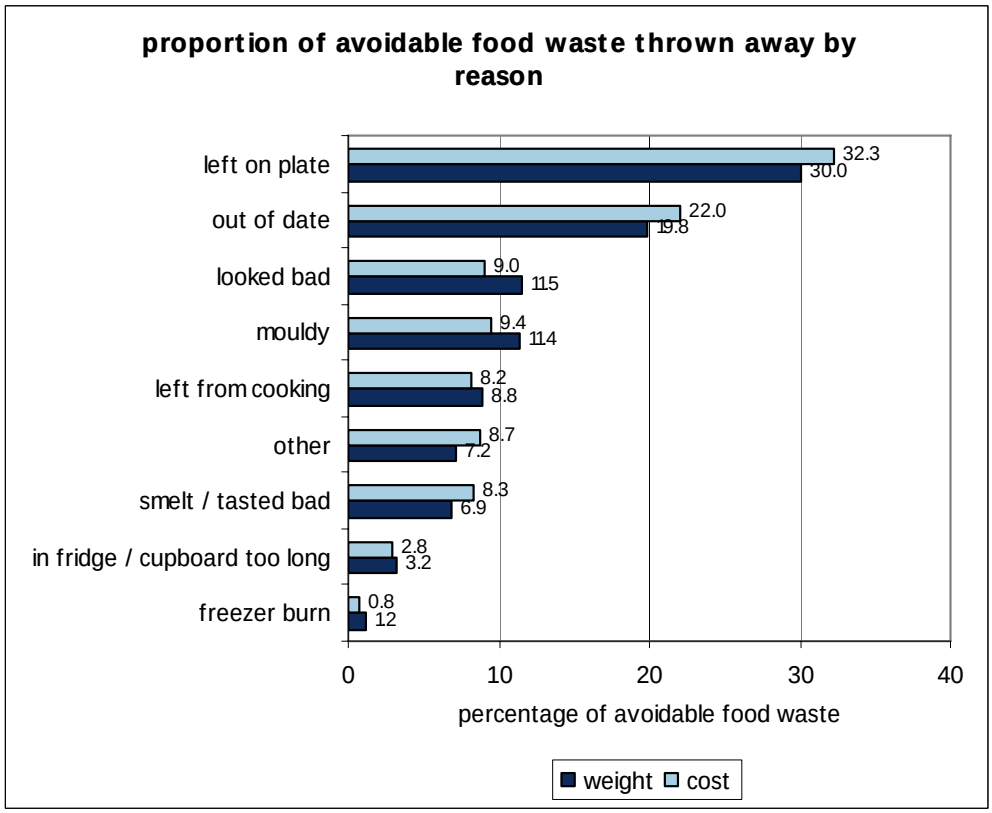
7.3 Why do we throw away avoidable food?

7.3.1 Definitely avoidable waste (food that could have been eaten had it been managed better)



Approaching two thirds (60.9%) of the weight of all food waste could have been avoided if it had been better managed or stored. Seven tenths (70.3%) of the cost of all food waste could be avoided if the food is better managed or stored. This section sets out the reasons why avoidable food waste is thrown away.

Figure 136 Reasons for throwing away avoidable food



Nearly a third by weight and three tenths by cost of the food that could have been eaten if it had been better stored or managed was thrown away because it was left over on the plate. Nearly a quarter of avoidable food waste in terms of cost that was thrown away was disposed of because the 'use by' or 'best before' date had expired; this equates to a fifth of avoidable food by weight.

[22] *Note that 'inedible' as used in this chapter is not necessarily the same as 'unavoidable' used in Part One of this report. This is because 'inedible' is the diary respondent's description of why the food was not eaten whereas in Part One 'unavoidable' is an objective assessment made by the researchers and applied to things that the vast majority of people would not eat, such as banana skins and apple cores.*

There are three types of date in common usage.

1. Use by:
This is the key date in terms of safety. The Food Standards Agency (FSA) advises that products should never be eaten after this date and storage instructions should be carefully observed. 'Use by' dates are usually found on chilled products such as cooked meats, soft cheeses and dairy-based desserts.

2. Best before:
'Best before' dates are usually on longer-shelf-life foods such as frozen, tinned or dried goods and refer to quality rather than safety. The FSA advises consumers to use their judgement when deciding whether food is edible, commenting that it should be safe to eat food after the 'best before' date, but food may no longer be at its best. One exception is eggs; eggs should never be eaten after the 'best before' date.

3. Display until\sell by:
Date marks such as 'display until' or 'sell by' often appear near or next to the 'best before' or 'use by' date. They are used by some shops to help with stock control and are instructions for shop staff, not shoppers.

Research by the FSA shows that food dates are poorly understood by consumers. The most recent survey[23] shows that 36% of people interpret a 'best before' date as a 'use by' date and only 55% correctly interpret 'use by' dates. So although this research could not distinguish between foods disposed with 'use by' as opposed to 'best before' dates, it is likely that some of this food was thrown away unnecessarily because consumers had interpreted a 'best before' date as a 'use by' date. In addition, all of this food waste could have been avoided had the food been better managed.

In addition to food being disposed because it had passed its date, a quarter of uneaten food that was thrown away (by cost) had been prepared and served up but then left on the plate (equivalent to just over one fifth by weight).

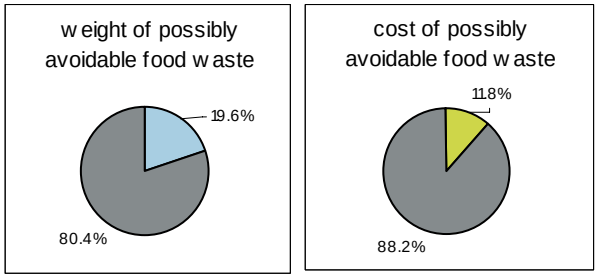
Table 124 The proportion and annual tonnage and cost of avoidable food waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable food waste	Cost of avoidable food waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable food waste	100% (60.9% of all food waste	100% (70.3 % of all food waste)	4,080,400	£10,180
Left on plate	30.0%	32.3%	1,225,700	£3,290
Out of date	19.8%	22.0%	808,000	£2,240
Looked bad	11.5%	9.0%	468,500	£920
Mouldy	11.4%	9.4%	465,700	£960
Left from cooking	8.8%	8.2%	360,600	£830
Other	7.2%	8.7%	292,900	£890
Smelt / tasted bad	6.9%	8.3%	282,000	£840
In fridge / cupboard too long	3.2%	2.8%	130,800	£290
Freezer burn	1.2%	0.8%	47,600	£80
Left on plate	30.0%	32.3%	1,225,700	£3,290
Out of date	19.8%	22.0%	808,000	£2,240

[23] *Food Standards Agency 2008. Consumer attitudes to food waste: wave 8. UK report final London, FSA.*

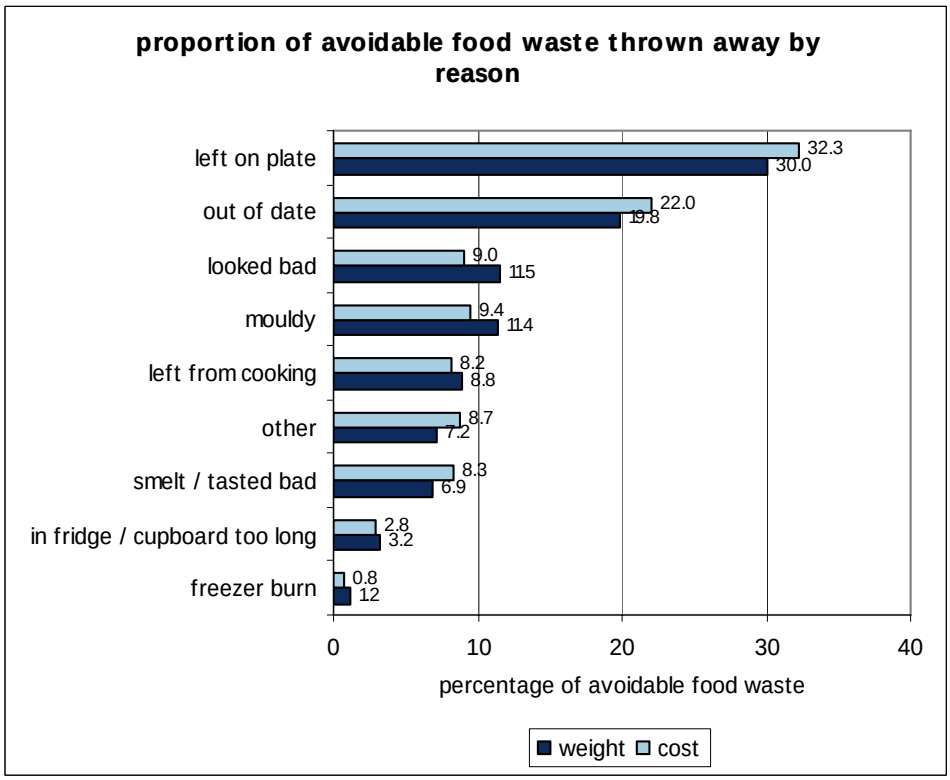
The most common reason for throwing away food that could have been eaten had it been managed or stored better is that it was left on the plate. The above table indicates that every year in the UK households throw away more than 1 million tonnes of food for this reason. Nearly 1 million tonnes of food is thrown away because the food date has expired.[24]

7.3.2 Possibly avoidable food waste (food that could have been eaten but individuals chose not to do so)



A fifth (19.6%) of the weight of all food waste can possibly be avoided. This includes items like bread crusts and soft peelings that some people would choose to eat and others would choose not to. Just over a tenth (11.8%) of the cost of all food waste could be avoided if people would eat the edible food that they choose not to.

Figure 137 Reasons for throwing away possibly avoidable food waste



'Possibly avoidable' food waste is food which can in theory be eaten but which some people choose not to eat. The most common reason for throwing away possibly edible waste such as bread crusts, potato peelings and apple skins is that it is not felt to be suitable for consumption; more than three quarters by weight and by cost of the food that could have been eaten if the respondents had chosen to do so is thrown away for this reason.

[24] This figure is different to that reported in Table 122 because it is based on the diary respondents' perceptions of whether food is in or out of date. Because people are confused about food dates it is likely that the truth lies somewhere between the two estimates of 1 million tonnes and 340,000 tonnes.

Table 125 The proportion and annual tonnage and cost of possibly avoidable food waste by stated reason for disposal

Stated reason for disposal	Weight of possibly avoidable food waste	Cost of possibly avoidable food waste	Weight (tonnes pa)	Cost (£ million pa)
Possibly avoidable food waste	100% (19.6% of all waste)	100% (11.8% of all waste)	1,309,600	£1700
Inedible	81.4%	76.2%	1,066,000	£1300
Left on plate	8.2%	9.5%	107,400	£160
Looked bad	3.9%	3.8%	51,100	£60
Other	3.3%	5.7%	43,200	£100
Left from cooking	1.1%	2.2%	14,400	£40
Out of date	0.7%	1.3%	9200	£20
Not specified	0.5%	0.3%	6500	£10
Smelt/tasted bad	0.4%	0.5%	5200	£10
Mouldy	0.3%	0.4%	3900	£10
In fridge/cupboard too long	0.2%	0.2%	2600	<£10

The most common reason for throwing away food waste that could possibly be eaten (bread crusts, soft fruit, vegetable peelings and the like) is that the food is deemed to be inedible. The above table indicates that every year in the UK households throw away more than 1 million tonnes of possibly avoidable food waste for this reason.

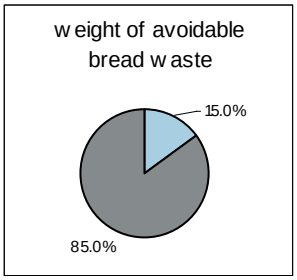
The remainder of this chapter focuses on avoidable waste.

7.4 Why do we throw away particular types of food waste that could have been avoided?

The following analysis provides indicative information regarding why different types of food that could have been eaten had they been managed better were thrown away by the kitchen diarists. It should be remembered that the reasons provided are those given by the respondents. Also in some cases the sample size ('base') is very small. This means that there is more error associated with these figures and ultimately the results become unreliable. At best, the reliability of the data is ± 5.8% with 95% confidence.

7.4.1 Bread

Less than a fifth (15%) of the weight of avoidable food waste consists of bread loaves, rolls and slices. A tenth (10.1%) of the cost of all avoidable food waste is made up of bread items. The analysis below excludes crusts which were classified as 'possibly avoidable'.



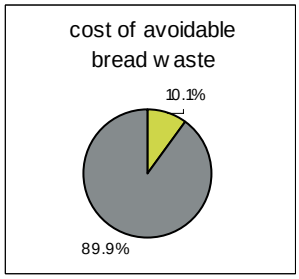
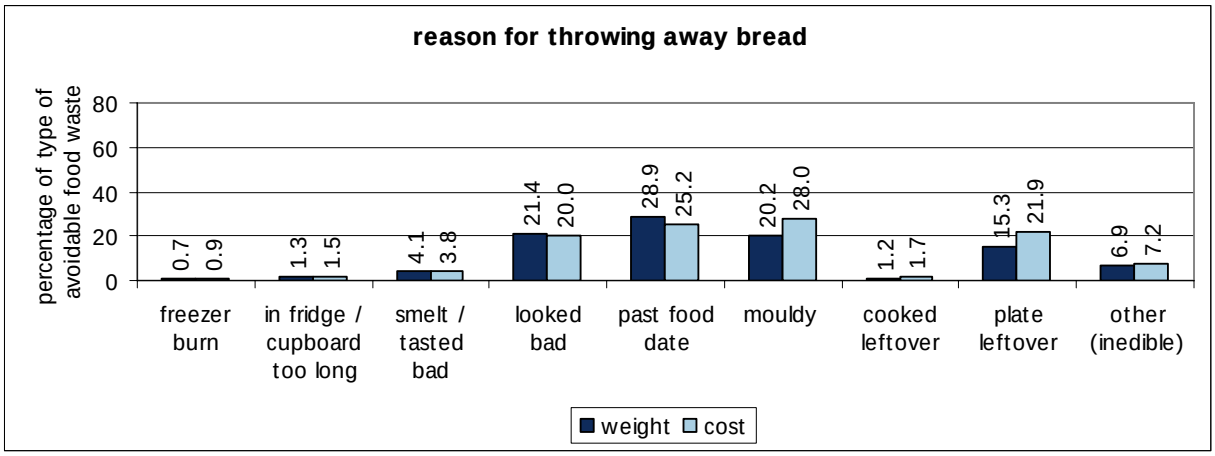


Figure 138 Reasons for throwing away avoidable bread waste



The above chart shows the most common reasons for disposing of bread are that it is past the 'best before' date (at least a quarter of all bread in terms of weight and cost) or that it has gone mouldy or that it does not look nice (around a fifth of all bread in terms of weight and cost for both reasons combined). Bread left on the plate makes up a fifth of all uneaten bread thrown away in terms of cost (slightly less in terms of weight).

Table 126 The proportion and annual tonnage and cost of avoidable bread waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable bread waste	Cost of avoidable bread waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable bread waste	100% (15% of avoidable food waste)	100% (10.1% of avoidable food waste)	613,500	£1030
Past food date	28.9%	25.2%	177,300	£260
Looked bad	21.4%	20.0%	131,300	£210
Mouldy	20.2%	28.0%	123,900	£290
Plate leftover	15.3%	21.9%	93,900	£230
Other (inedible)	6.9%	7.2%	42,300	£70
Smelt/tasted bad	4.1%	3.8%	25,200	£40
In fridge/cupboard too long	1.3%	1.5%	8000	£20
Cooked leftover	1.2%	1.7%	7400	£20
Freezer burn	0.7%	0.9%	4300	£10

Bread being thrown away because it is past its food date causes the most amount of waste in the bread category. The above table indicates that every year in the UK households throw away more than 177,000 tonnes of bread for this reason.

7.4.2 Breakfast cereals

0.3% of the weight of avoidable food waste consists of breakfast cereals (this excludes the weight of any milk). A similar proportion (0.5%) of the cost of all avoidable food waste is made up of breakfast cereals.

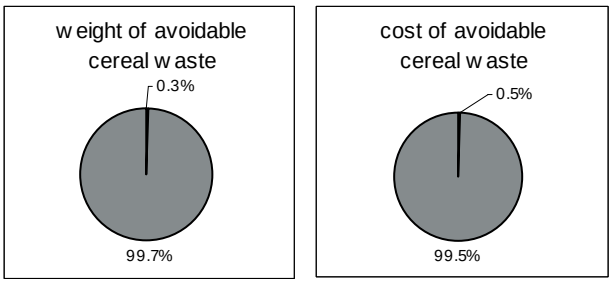
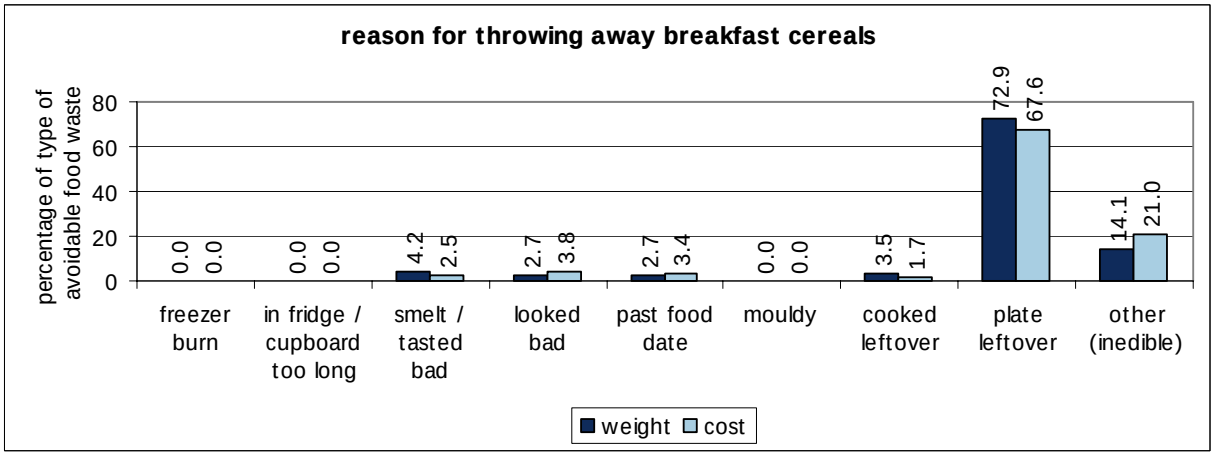


Figure 139 Reasons for throwing away avoidable breakfast cereals waste



The above chart illustrates that in terms of weight and financial cost, the majority of cereal that was thrown away was left in the cereal bowl.

Table 127 The proportion and annual tonnage and cost of avoidable breakfast cereals waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable cereal waste	Cost of avoidable cereal waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable breakfast cereals waste	100% (0.3% of avoidable food waste)	100% (0.5% of avoidable food waste)	19,700	£70
Plate leftover	72.9%	67.6%	14,400	£40
Other (inedible)	14.1%	21.0%	2800	£10
Smelt/tasted bad	4.2%	2.5%	800	<£10
Cooked leftover	3.5%	1.7%	700	<£10
Looked bad	2.7%	3.8%	500	<£10
Past food date	2.7%	3.4%	500	<£10

The most common reason for throwing away breakfast cereal that could have been eaten is that it is left over from a meal. The above table indicates that every year in the UK households throw away more than 14,000 tonnes of breakfast cereals for this reason.

7.4.3 Biscuits and cakes

2.5% of the weight of avoidable food waste consists of biscuits and cakes. A similar proportion (3%) of the cost of all avoidable food waste is made up of biscuits and cakes.

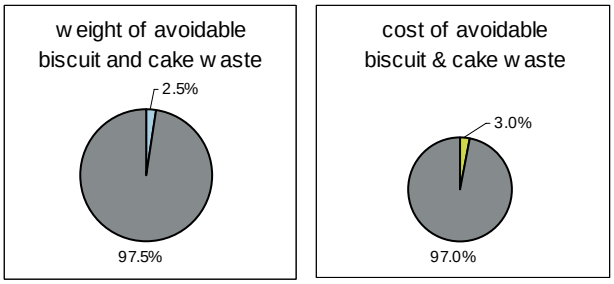
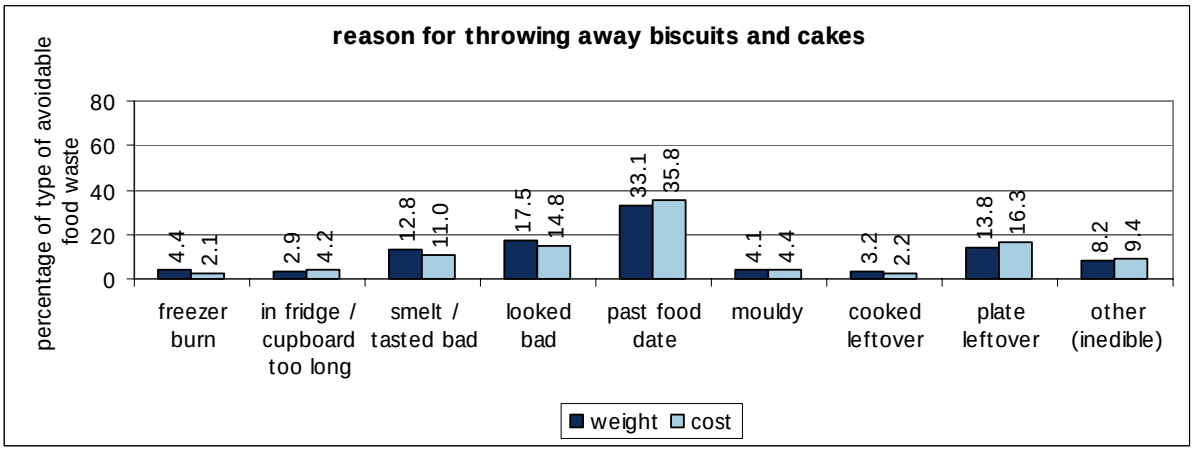


Figure 140 Reasons for throwing away avoidable biscuit and cake waste



The most common reason for throwing away biscuits and cakes is that their 'best before' date has expired, with one third of all cakes and biscuits in terms of weight and cost being thrown away for this reason.

Table 128 The proportion and annual tonnage and cost of avoidable biscuit and cake waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable biscuit and cake waste	Cost of avoidable biscuit and cake waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable biscuit and cake waste	100% (2.5% of avoidable food waste)	100% (3% of avoidable food waste)	103,600	£300
Past food date	33.1%	35.8%	34,300	£110
Looked bad	17.5%	14.8%	18,100	£40
Plate leftover	13.8%	16.3%	14,300	£50
Smelt/tasted bad	12.8%	11.0%	13,300	£30
Other (inedible)	8.2%	9.4%	8500	£30
Freezer burn	4.4%	2.1%	4600	£10
Mouldy	4.1%	4.4%	4200	£10
Cooked leftover	3.2%	2.2%	3300	£10
In fridge/cupboard too long	2.9%	4.2%	3000	£10

The most common reason for throwing away biscuits and cakes that could have been eaten is that they are past their 'best before' food date. The above table indicates that every year in the UK households throw away more than 34,000 tonnes of biscuits and cakes for this reason.

7.4.4 Cheese

1% of the weight and 2.4% of the cost of avoidable food waste consists of cheese.

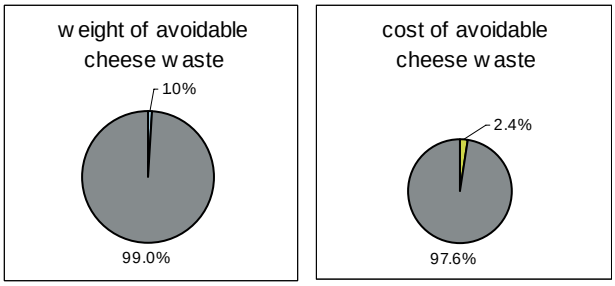
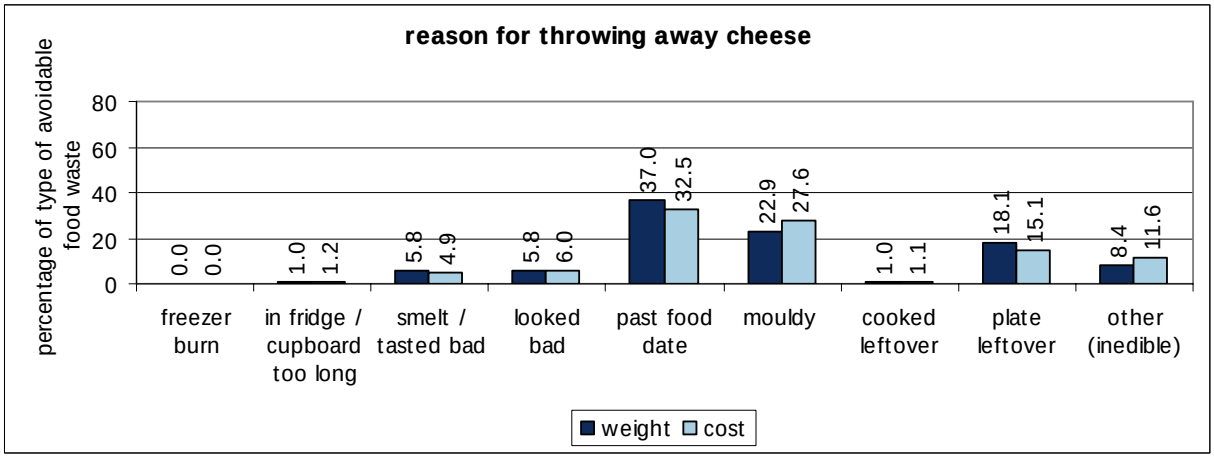


Figure 141 Reasons for throwing away avoidable cheese waste



People are most likely to throw away cheese because its 'use by' date has expired, closely followed by it going mouldy.

Table 129 The proportion and annual tonnage and cost of avoidable cheese waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable cheese waste	Cost of avoidable cheese waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable cheese waste	100% (1% of avoidable food waste)	100% (2.4% of avoidable food waste)	39,900	£250
Past food date	37.0%	32.5%	14,800	£80
Mouldy	22.9%	27.6%	9100	£70
Plate leftover	18.1%	15.1%	7200	£40
Other (inedible)	8.4%	11.6%	3400	£30
Smelt/tasted bad	5.8%	4.9%	2300	£10
Looked bad	5.8%	6.0%	2300	£10
In fridge/cupboard too long	1.0%	1.2%	400	<£10
Cooked leftover	1.0%	1.1%	400	<£10

The most common reason for throwing away cheese that could have been eaten is that the food date has expired. The above table indicates that every year in the UK households throw away more than 14,000 tonnes of cheese for this reason.

7.4.5 Confectionery and savoury snacks

1.5% of the weight and 3.4% of the cost of avoidable food waste consists of confectionery foods and snacks.

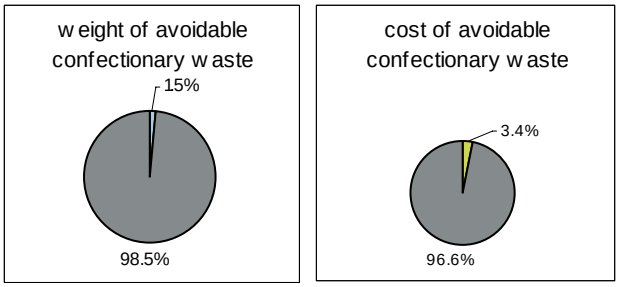
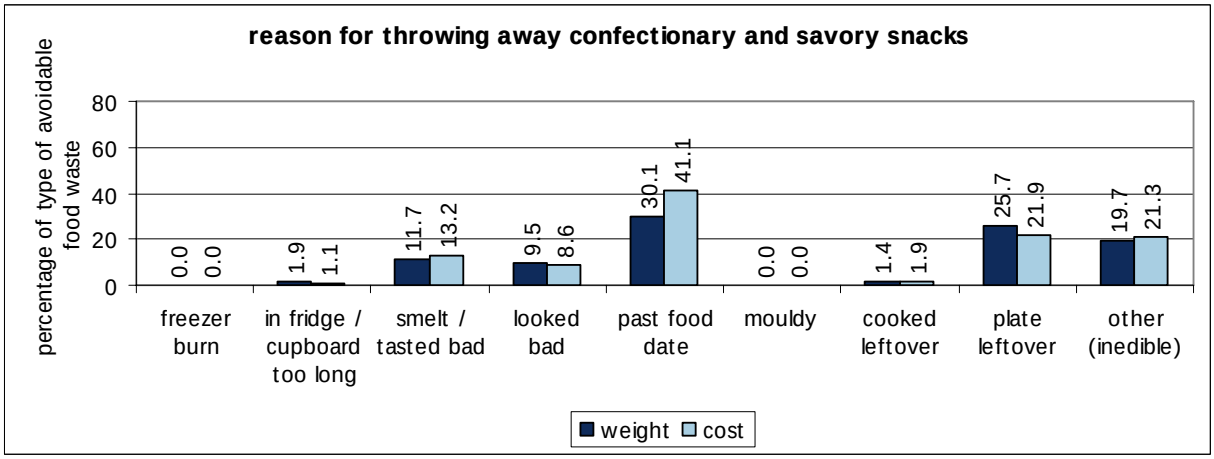


Figure 142 Reasons for throwing away avoidable confectionery and savoury snacks waste



The most common reason for throwing away confectionery such as sweets and savoury snacks is that the 'best before' date has expired, followed by individuals not being able to eat all of it. In terms of cost, four tenths of all confectionery is thrown away because it is past its 'best before' date.

Table 130 The proportion and annual tonnage and cost of avoidable confectionery and snack waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable confectionery waste	Cost of avoidable confectionery waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable confectionery waste	100% (1.5% of avoidable food waste)	100% (3.4% of avoidable food waste)	62,500	£350
Past food date	30.1%	41.1%	18,800	£140
Plate leftover	25.7%	21.9%	16,100	£80
Other (inedible)	19.7%	21.3%	12,300	£70
Smelt/tasted bad	11.7%	13.2%	7300	£50
Looked bad	9.5%	8.6%	5900	£30
In fridge/cupboard too long	1.9%	1.1%	1200	£0
Cooked leftover	1.4%	1.9%	900	£10

The most common reason for throwing away confectionery that could have been eaten is that the food date has expired. The above table indicates that every year in the UK households throw away more than 18,000 tonnes of confectionery and snacks for this reason.

7.4.6 Eggs

0.5% of the weight and 0.6% of the cost of avoidable food waste consists of eggs.

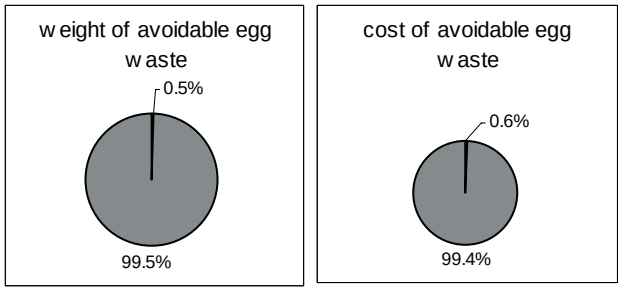
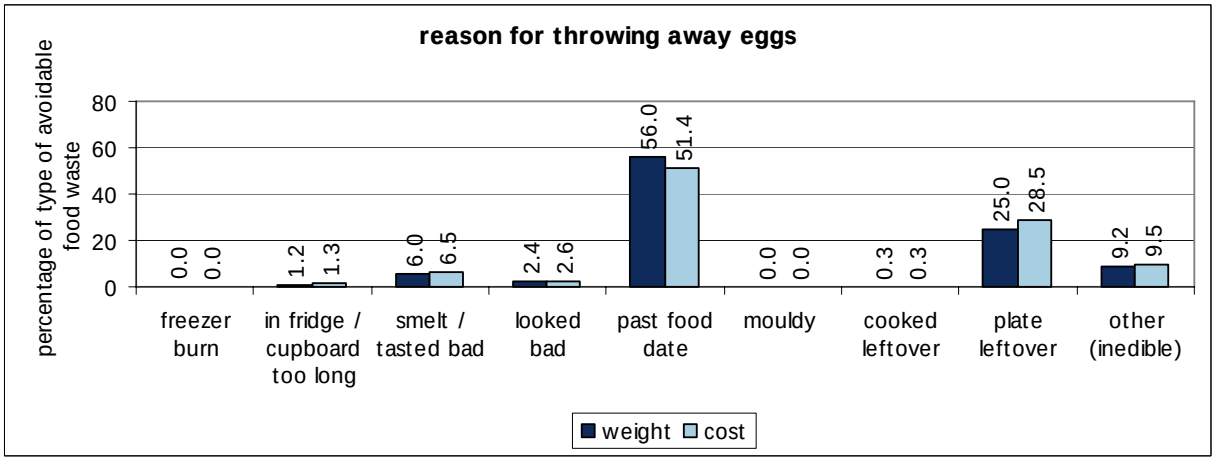


Figure 143 Reasons for throwing away avoidable egg waste



The most likely reason for throwing away eggs was stated as the 'best before' date expiring; more than half of the eggs thrown away, in terms of both weight and cost, were disposed of because the food date had passed. In food safety terms eggs are unusual. Food safety advice is that eggs should not be consumed past their 'best before' date; for all other types of food, 'best before' dates are indicative of likely food quality and not a guide to food safety. This suggests that although in one sense it is good that people are following the FSA's advice on not eating eggs past their 'best before' date, the waste could still have been avoided had the eggs been eaten in time.

Table 131 The proportion and annual tonnage and cost of avoidable egg waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable egg waste	Cost of avoidable egg waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable egg waste	100% (0.5% of avoidable food waste)	100% (0.6% of avoidable food waste)	18,800	£60
Past food date	56.0%	51.4%	10,500	£30
Plate leftover	25.0%	28.5%	4700	£20
Other (inedible)	9.2%	9.5%	1700	£10
Smelt/tasted bad	6.0%	6.5%	1100	<£10
Looked bad	2.4%	2.6%	500	<£10
In fridge/cupboard too long	1.2%	1.3%	200	<£10
Cooked leftover	0.3%	0.3%	100	<£10

The most common reason for throwing away eggs that could have been eaten is that the date has expired. Table 131 indicates that every year in the UK households throw away more than 10,000 tonnes of eggs for this reason.

7.4.7 Fresh fruit

More than a tenth (13.3%) of the weight of avoidable food waste consists of fresh fruit. A tenth (10.5%) of the cost of all avoidable food waste is made up of fresh fruit.

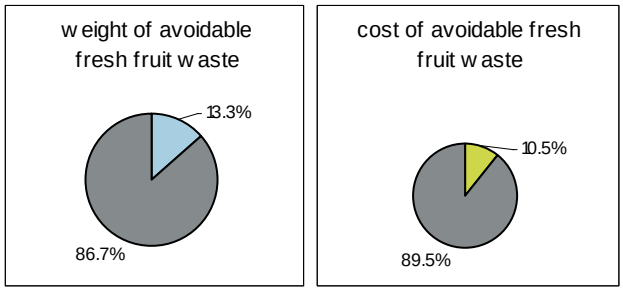
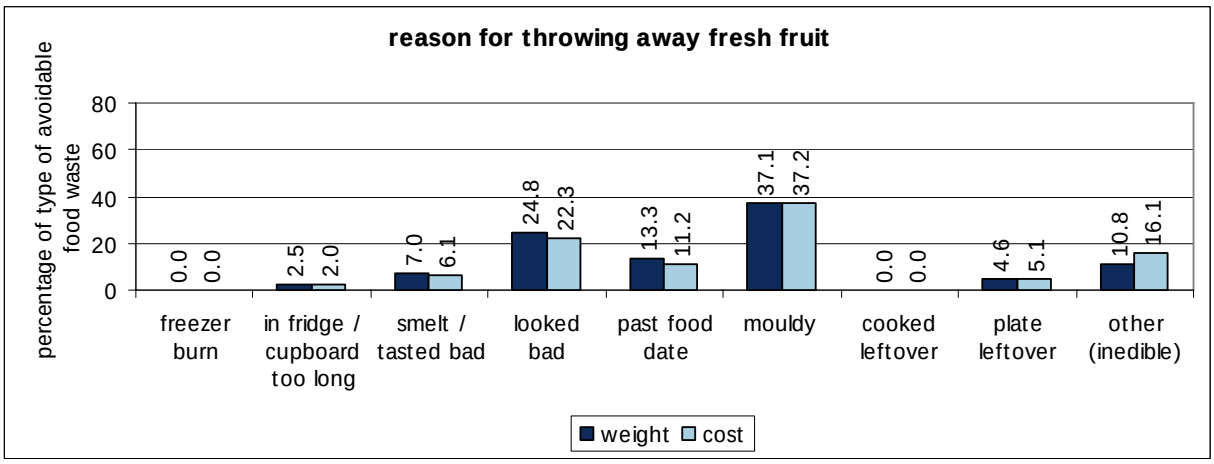


Figure 144 Reasons for throwing away avoidable fresh fruit waste



Indications are that fresh fruit is most likely to be thrown away because it has gone mouldy. More than a third of disposed uneaten fresh fruit with respect to both weight and cost was said to be mouldy by the respondents.

Table 132 The proportion and annual tonnage and cost of avoidable fresh fruit waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable fresh fruit waste	Cost of avoidable fresh fruit waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable fresh fruit waste	100% (13.3% of avoidable food waste)	100% (10.5% of avoidable food waste)	543,500	£1070
Mouldy	37.1%	37.2%	201,300	£400
Looked bad	24.8%	22.3%	134,500	£240
Past food date	13.3%	11.2%	72,200	£120
Other (inedible)	10.8%	16.1%	58,600	£170
Smelt/tasted bad	7.0%	6.1%	38,000	£70
Plate leftover	4.6%	5.1%	25,000	£50
In fridge/cupboard too long	2.5%	2.0%	13,600	£20

The most likely reasons for throwing away fresh fruit that could have been eaten is that the fruit has gone mouldy or that it looks bad. The above table indicates that every year in the UK households throw away more than 330,000 tonnes of fresh fruit for these reasons.

7.4.8 Fresh meat and fish

4.4% of the weight and 10% of the cost of avoidable food waste consists of fresh meat and fish.

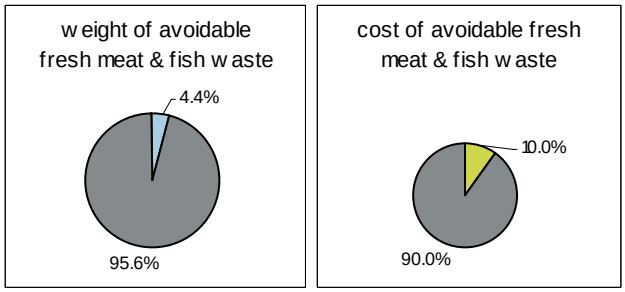
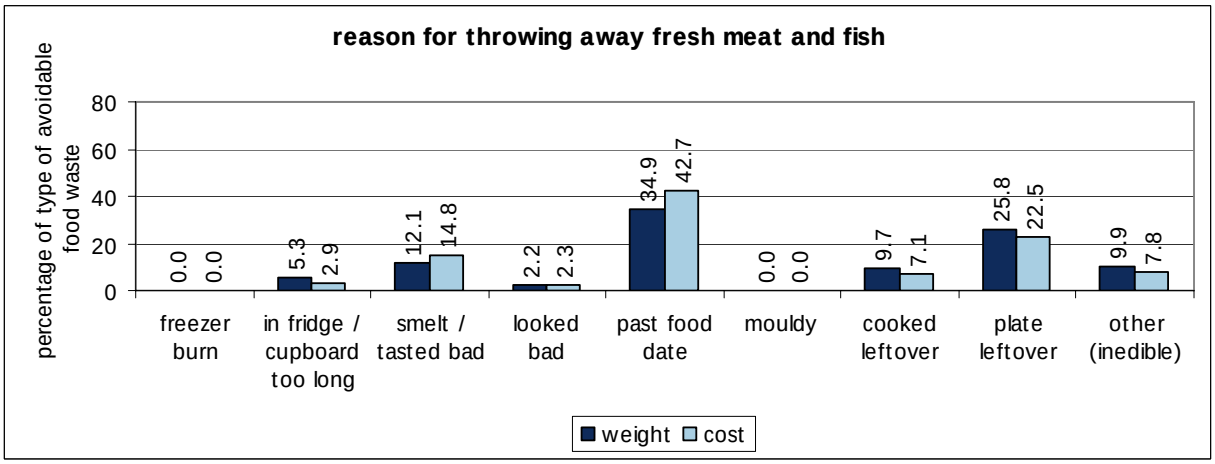


Figure 145 Reasons for throwing away avoidable fresh meat and fish waste



Most meat and fish is thrown away because the 'use by' date has expired: in terms of cost, this accounts for more than four tenths of disposed fresh fish and meat. Throwing meat and fish away because it is left on the plate is also common. At least a fifth of the wasted fresh fish and meat is because it is served up but not eaten.

Table 133 The proportion and annual tonnage and cost of avoidable fresh meat and fish waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable fresh meat and fish waste	Cost of avoidable fresh meat and fish waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable fresh meat and fish waste	100% (4.4% of avoidable food waste)	100% (10% of avoidable food waste)	181,000	£1020
Past food date	34.9%	42.7%	63,200	£440
Plate leftover	25.8%	22.5%	46,700	£230
Smelt/tasted bad	12.1%	14.8%	21,900	£150
Other (inedible)	9.9%	7.8%	17,900	£80
Cooked leftover	9.7%	7.1%	17,600	£70
In fridge/cupboard too long	5.3%	2.9%	9600	£30
Looked bad	2.2%	2.3%	4000	£20

The most common reason for throwing away fresh meat and fish that could have been eaten is that the food date has expired. The above table indicates that every year in the UK households throw away more than 63,000 tonnes of fresh meat and fish for this reason.

7.4.9 *Fresh vegetables (excluding potatoes)*

5% of the weight and 3.7% of the cost of avoidable food waste consists of fresh vegetables (excluding potatoes). Potatoes are looked at separately in Section 7.4.15 because they are of particular interest as they make up a significant part of avoidable vegetable waste.

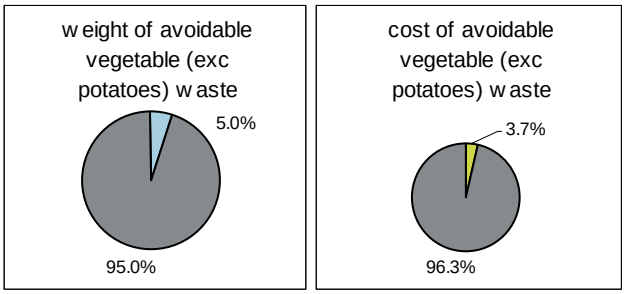
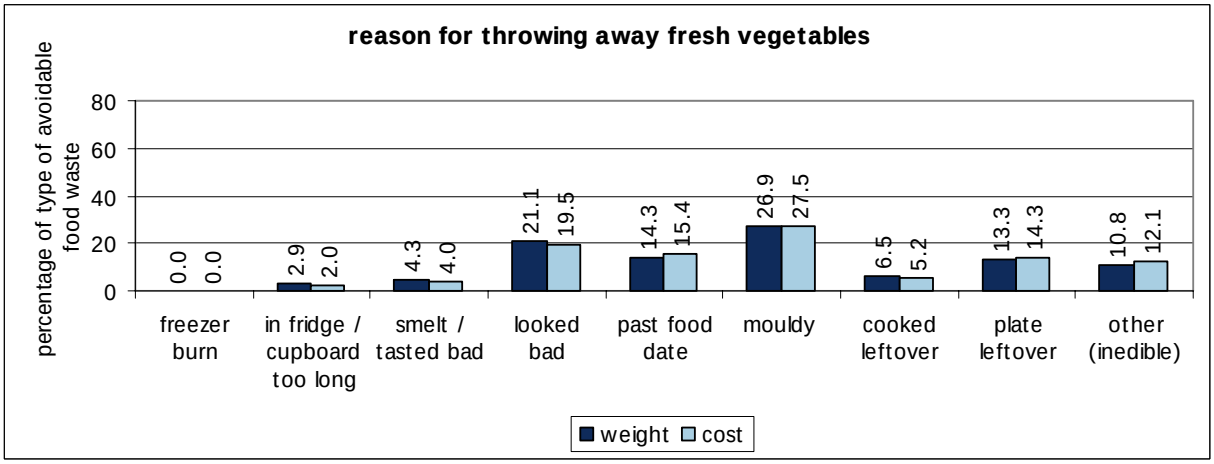


Figure 146 Reasons for throwing away avoidable fresh vegetable waste



The most likely reason for throwing away fresh vegetables (excluding potatoes which are covered in Section 7.4.15 below) is that they are mouldy; in terms of weight and cost, mould accounts for nearly three tenths of all fresh vegetables thrown away. A further fifth of all fresh vegetables are thrown away because they look as if they are past their best.

Table 134 The proportion and annual tonnage and cost of avoidable fresh vegetable waste (excluding potatoes) by stated reason for disposal

Stated reason for disposal	Weight of avoidable fresh vegetable waste	Cost of avoidable fresh vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable vegetable waste (excluding potatoes)	100% (5% of avoidable food waste)	100% (3.7% of avoidable food waste)	203,600	£380
Mouldy	26.9%	27.5%	54,800	£100
Looked bad	21.1%	19.5%	43,000	£70
Past food date	14.3%	15.4%	29,100	£60
Plate leftover	13.3%	14.3%	27,100	£50
Other (inedible)	10.8%	12.1%	22,000	£50
Cooked leftover	6.5%	5.2%	13,200	£20
Smelt/tasted bad	4.3%	4.0%	8800	£20
In fridge/cupboard too long	2.9%	2.0%	5900	£10

The most common reason for throwing away fresh vegetables (excluding potatoes) that could have been eaten is that the vegetable has gone mouldy. The above table indicates that every year in the UK households throw away more than 54,000 tonnes of fresh vegetables (excluding potatoes) for this reason.

7.4.10 Meat and fish products

0.2% of the weight and 0.4% of the cost of avoidable food waste consists of meat and fish products. This food category incorporates items such as burgers and fish fingers.

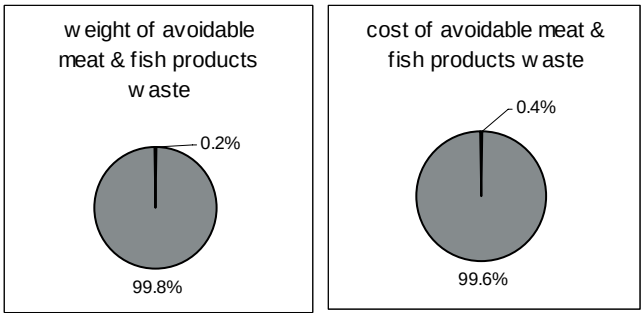
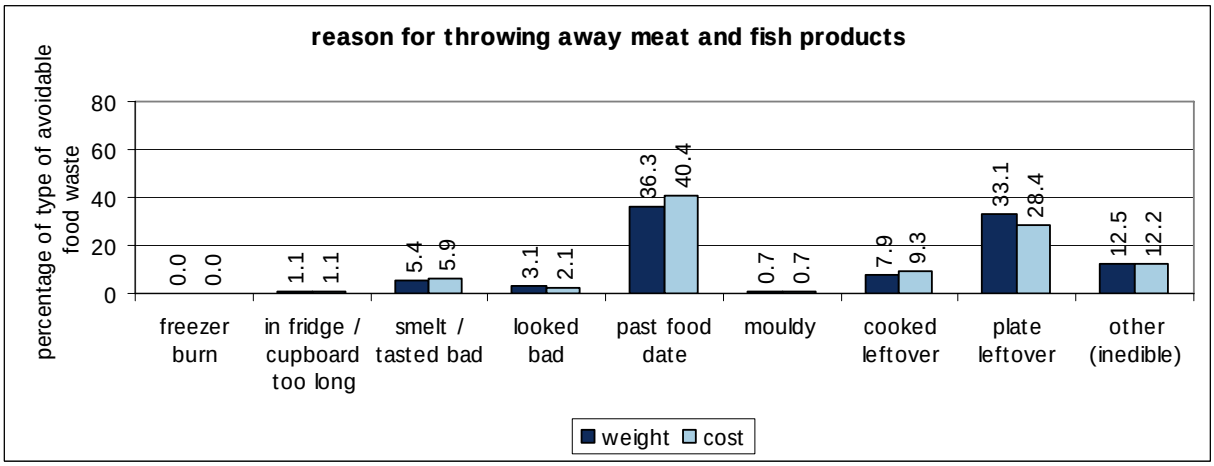


Figure 147 Reasons for throwing away avoidable meat and fish products waste



Meat and fish products are predominantly thrown away because the food date has expired (four tenths of this food type by cost is disposed of for this reason) or they are left over after being prepared and served (more than one quarter by cost).

Table 135 The proportion and annual tonnage and cost of avoidable meat and fish products waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable meat and fish products waste	Cost of avoidable meat and fish products waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable meat and fish products waste	100% (0.2% of avoidable food waste)	100% (0.4% of avoidable food waste)	7900	£40
Past food date	36.3%	40.4%	2900	£20
Plate leftover	33.1%	28.4%	2600	£10
Other (inedible)	12.5%	12.2%	1000	£<10
Cooked leftover	7.9%	9.3%	600	£<10
Smelt/tasted bad	5.4%	5.9%	400	£<10
Looked bad	3.1%	2.1%	200	£<10
In fridge/cupboard too long	1.1%	1.1%	100	£<10
Mouldy	0.7%	0.7%	100	£<10

The most common reason for throwing away meat and fish products that could have been eaten is that the food date has expired. The above table indicates that every year in the UK households throw away more than 2000 tonnes of meat and fish products for this reason.

7.4.11 Milk

1% of the weight and 0.3% of the cost of avoidable food waste consists of milk. This is milk that was found in a container in the rubbish collected by the council; milk is also disposed of via the sink or drain but this is not included in the analysis.

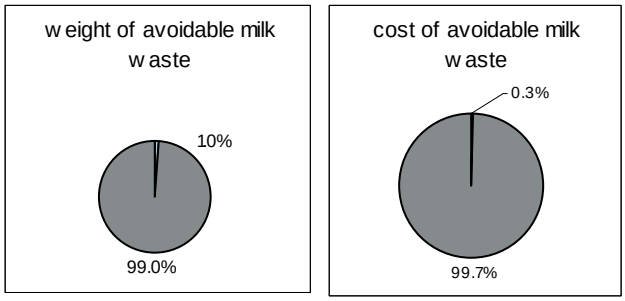
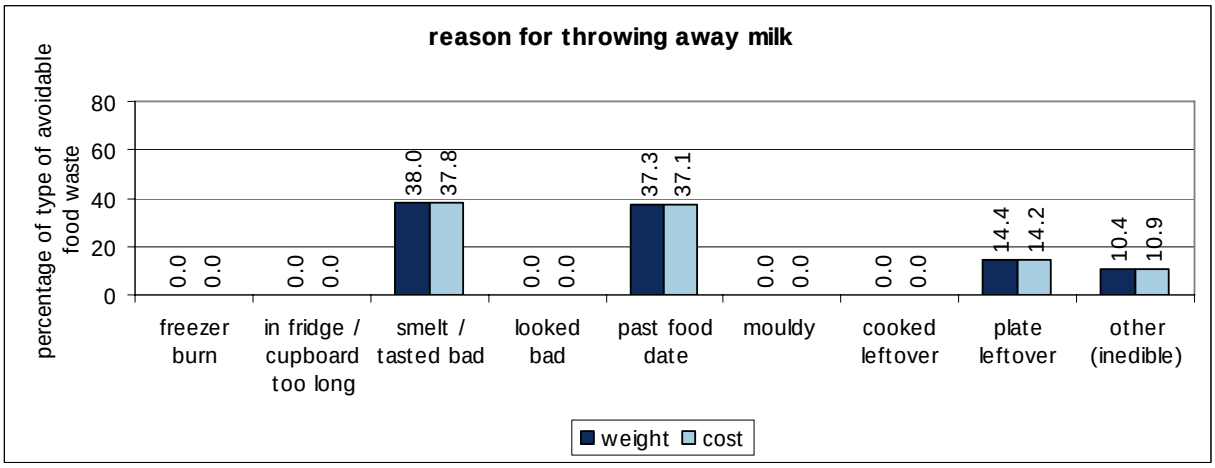


Figure 148 Reasons for throwing away avoidable milk waste



Milk is thrown away equally because it is past its 'use by' date or because it smells or tastes off; these two reasons account for three quarters of all milk thrown away in terms of both weight and cost.

Table 136 The proportion and annual tonnage and cost of avoidable milk waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable milk waste	Cost of avoidable milk waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable milk waste	100% (1% of avoidable food waste)	100% (0.3% of avoidable food waste)	40,200	£30
Smelt/tasted bad	38.0%	37.8%	15,300	£10
Past food date	37.3%	37.1%	15,000	£10
Plate leftover	14.4%	14.2%	5800	£0
Other (inedible)	10.4%	10.9%	4200	£0

The most common reasons for throwing away milk that could have been consumed are that it is past its food date or does not smell or taste nice. The above table indicates that every year in the UK households throw away more than 30,000 tonnes of milk for this reason.

7.4.12 Other dairy products

2.2% of the weight and 2.2% of the cost of avoidable food waste consists of dairy foods (excluding milk or cheese). This category includes cream and yoghurt but excludes milk, eggs and cheese which are of particular interest and have been reported separately in Sections 7.4.4 (cheese), 7.4.6 (eggs) and 7.4.11 (milk) above.

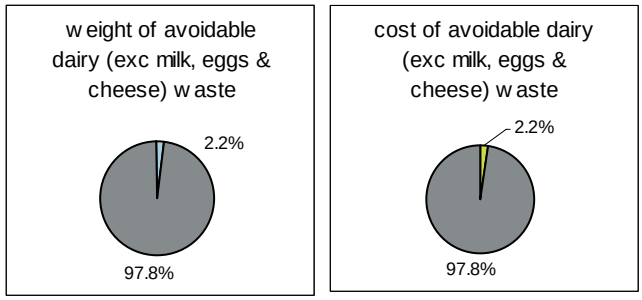
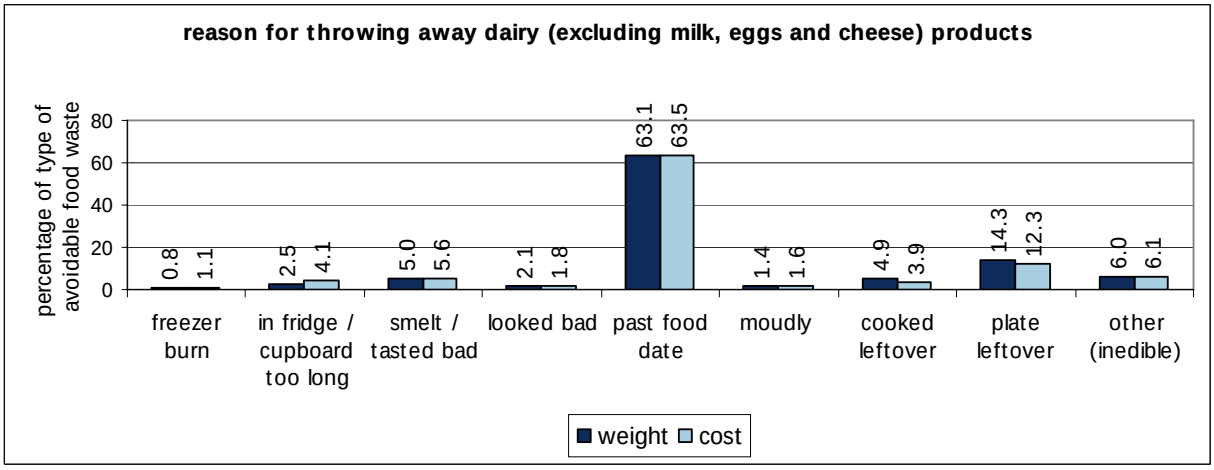


Figure 149 Reasons for throwing away avoidable other dairy products waste (excluding milk, eggs and cheese)



Other dairy products such as yoghurts and cream are overwhelmingly likely to be thrown away because the food date has expired. This is the case for nearly two thirds of all other dairy products disposed of in terms of both weight and cost. These types of product will have a mixture of 'use by' and 'best before' dates.

Table 137 The proportion and annual tonnage and cost of avoidable dairy (excluding milk, eggs and cheese) waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable other dairy waste	Cost of avoidable other dairy waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable dairy (excluding cheese, eggs and milk) waste	100% (2.2% of avoidable food waste)	100% (2.2% of avoidable food waste)	88,200	£220
Past food date	63.1%	63.5%	55,600	£140
Plate leftover	14.3%	12.3%	12,600	£30
Other (inedible)	6.0%	6.1%	5300	£10
Smelt/tasted bad	5.0%	5.6%	4400	£10
Cooked leftover	4.9%	3.9%	4300	£10
In fridge/cupboard too long	2.5%	4.1%	2200	£10
Looked bad	2.1%	1.8%	1900	<£10
Mouldy	1.4%	1.6%	1200	<£10
Freezer burn	0.8%	1.1%	700	<£10

The most common reason for throwing away dairy (excluding milk, eggs and cheese) foods that could have been consumed is that the food date has expired. The above table indicates that every year in the UK households throw away more than 55,000 tonnes of dairy (excluding milk, eggs and cheese) products for this reason.

7.4.13 Pasta

1.1% of the weight and 1% of the cost of avoidable food waste consists of pasta. This includes fresh and dried pasta and pre-prepared pasta salads. The cost of cooked pasta was adjusted to make it comparable with cost of the pasta purchased in a dry state, while the weight of cooked pasta waste is the actual weight without any adjustment.

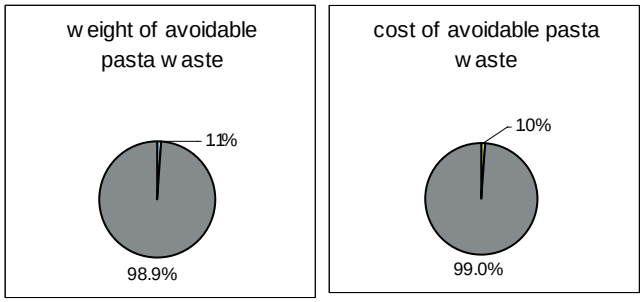
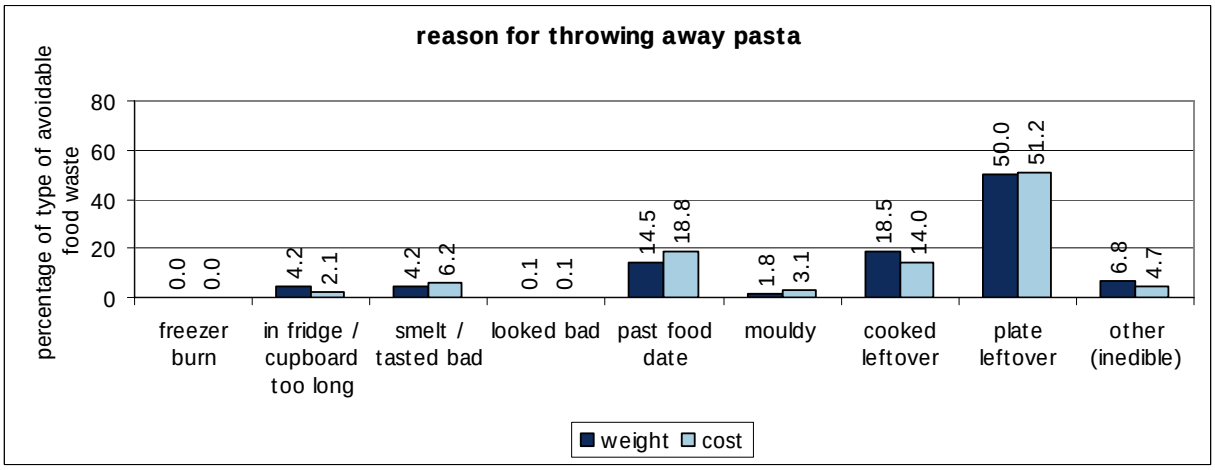


Figure 150 Reasons for throwing away avoidable pasta waste



In contrast to most of the other food categories, pasta is most likely to be thrown away because it has been cooked and prepared but then left on the plate (51.2% by cost and 50% by weight). Other reasons for disposing of pasta include cooking but not serving it up (14% by cost and 18.5% by weight) and it going past its food date (18.8% by cost and 14.5% by weight).

Table 138 The proportion and annual tonnage and cost of avoidable pasta waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable pasta waste	Cost of avoidable pasta waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable pasta waste	100% (1.1% of avoidable food waste)	100% (1% of avoidable food waste)	44,300	£100
Plate leftover	50.0%	51.2%	22,200	£50
Cooked leftover	18.5%	14.0%	8200	£10
Past food date	14.5%	18.8%	6400	£20
Other (inedible)	6.8%	4.7%	3000	<£10
In fridge/cupboard too long	4.2%	2.1%	1900	<£10
Smelt/tasted bad	4.2%	6.2%	1900	<£10
Mouldy	1.8%	3.1%	800	<£10
Looked bad	0.1%	0.1%	<100	<£10

The most common reason for throwing away pasta that could have been consumed is that it was left on the plate after a meal. The above table indicates that every year in the UK households throw away more than 22,000 tonnes of pasta for this reason.

7.4.14 Rice

1.4% of the weight of avoidable food waste consists of rice. This includes cooked and uncooked rice and pre-prepared rice salads. The cost of cooked rice was adjusted to make it comparable with cost of the rice purchased in a dry state, while the weight of cooked rice waste is the actual weight without any adjustment.

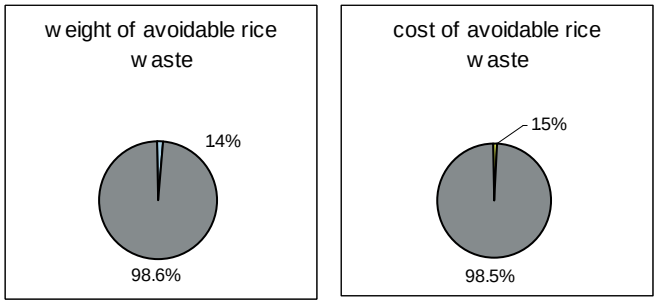
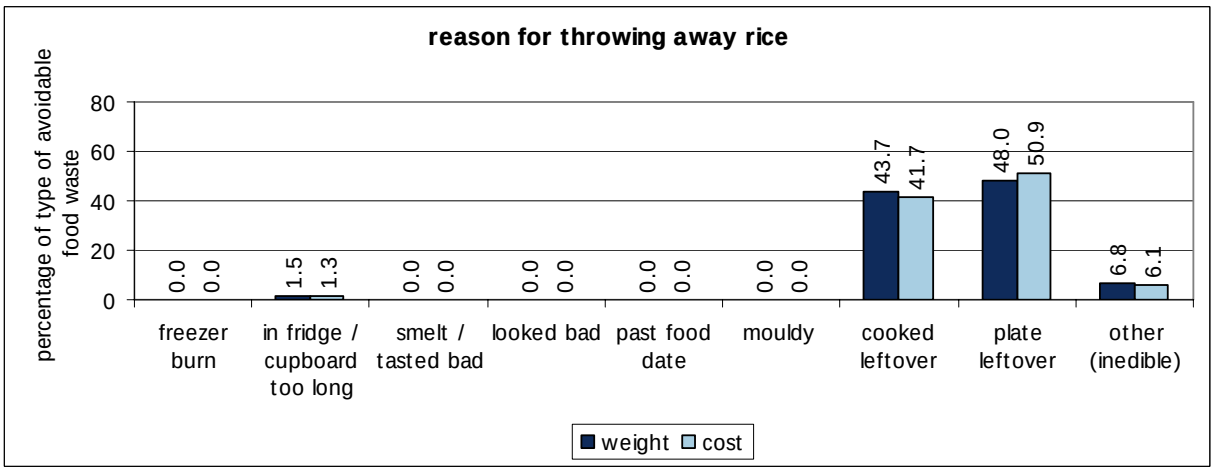


Figure 151 Reasons for throwing away avoidable rice waste



The most common reasons for disposing of rice are preparing and serving the rice but then leaving it on the plate (50.9% by cost and 48% by weight) and cooking but not serving the rice (41.7% by cost and 43.7% by weight). More than nine tenths of rice that is thrown away is disposed of for these reasons (in terms of weight and cost).

Table 139 The proportion and annual tonnage and cost of avoidable rice waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable rice waste	Cost of avoidable rice waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable rice waste	100% (1.4% of avoidable food waste)	100% (1.5% of avoidable food waste)	57,800	£150
Plate leftover	48.0%	50.9%	27,800	£80
Cooked leftover	43.7%	41.7%	25,300	£60
Other (inedible)	6.8%	6.1%	3900	£10
In fridge/cupboard too long	1.5%	1.3%	900	<£10

The most common reason for throwing away rice that could have been consumed is that it was left on the plate after a meal. The above table indicates that every year in the UK households throw away more than 27,000 tonnes of rice for this reason.

7.4.15 Potatoes

Nearly a tenth (8.8%) of the weight and 2.3% of the cost of avoidable food waste consists of potatoes. Potato skins are excluded from this analysis because they are classified as being 'possibly avoidable waste'.

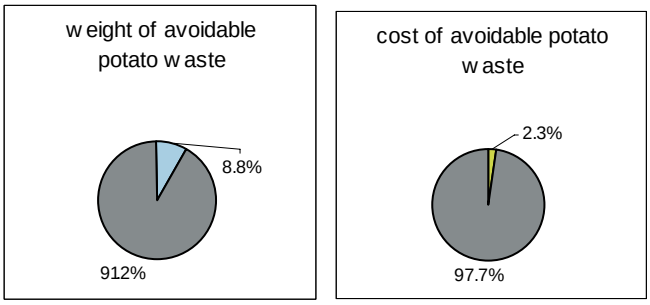
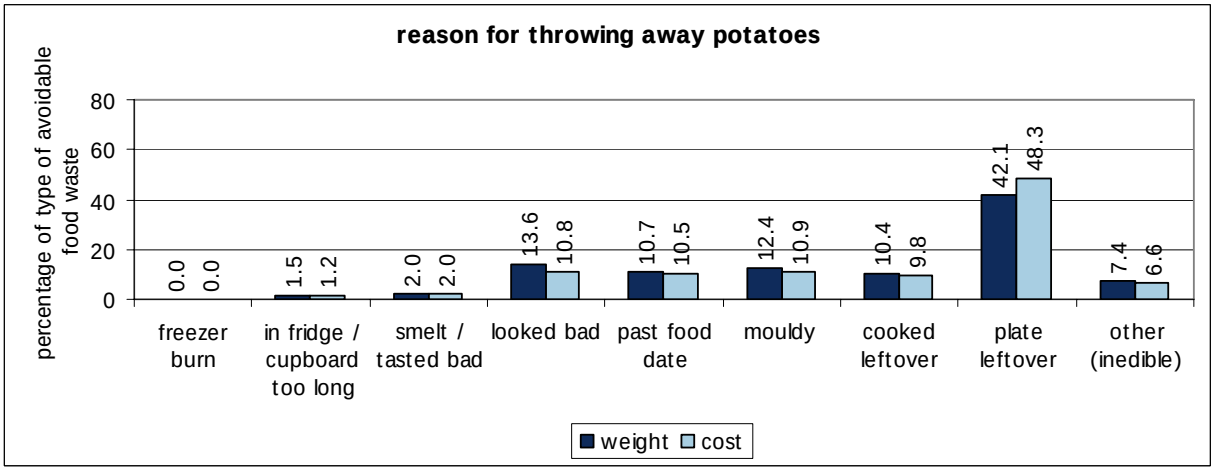


Figure 152 Reasons for throwing away avoidable potato waste



Potatoes (excluding peelings) are most likely to be thrown away because they are left on the plate at the end of a meal. More than four tenths of all potato waste that could have been avoided is disposed of for this reason.

Table 140 The proportion and annual tonnage and cost of avoidable potato waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable potato waste	Cost of avoidable potato waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable potato waste	100% (8.8% of avoidable food waste)	100% (2.3% of avoidable food waste)	358,500	£300
Plate leftover	42.1%	48.3%	150,900	£150
Looked bad	13.6%	10.8%	48,800	£30
Mouldy	12.4%	10.9%	44,500	£30
Past food date	10.7%	10.5%	38,400	£30
Cooked leftover	10.4%	9.8%	37,300	£30
Other (inedible)	7.4%	6.6%	26,500	£20
Smelt/tasted bad	2.0%	2.0%	7200	£10
In fridge/cupboard too long	1.5%	1.2%	5400	<£10

The most common reason for throwing away potatoes that could have been consumed is that they are left on the plate after a meal. The above table indicates that every year in the UK households throw away more than 150,000 tonnes of potatoes for this reason.

7.4.16 Pre-cooked meat and fish

2.2% of the weight and 4% of the cost of avoidable food waste consists of pre-cooked meat and fish. This category excludes fresh meat and fish (see Section 7.4.8) and processed meat and fish products such as burgers and fish fingers (see Section 7.4.10). It includes items like cooked meat and fish that are ready to consume.

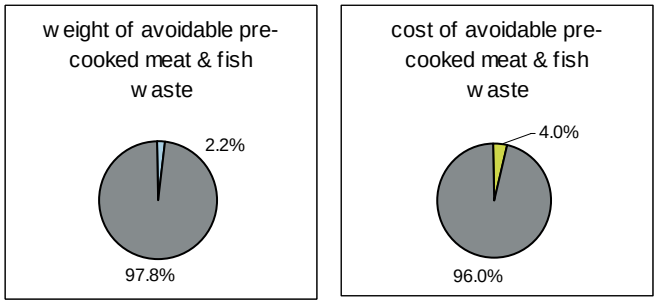
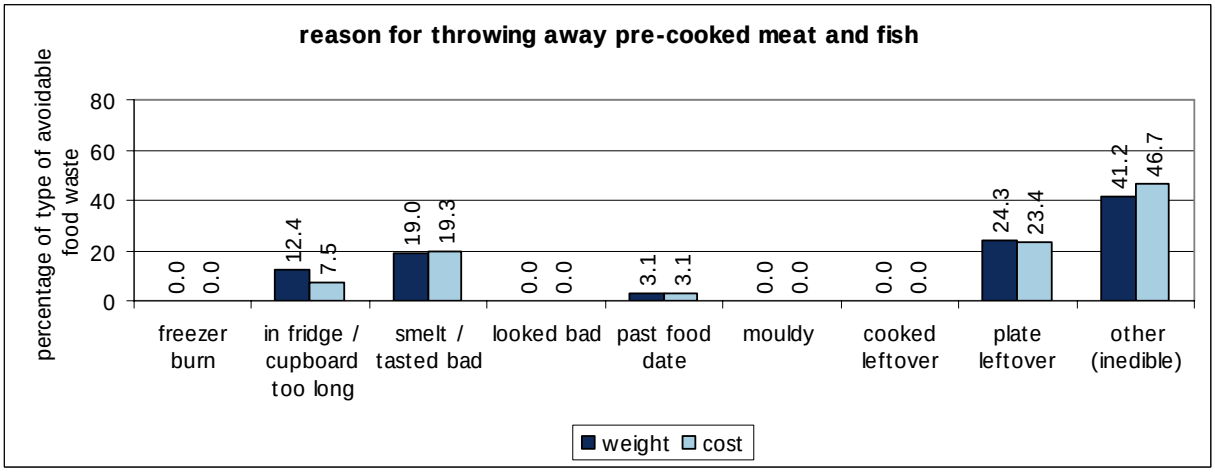


Figure 153 Reasons for throwing away avoidable pre-cooked meat and fish



Although this analysis is based on fish that could have been eaten (i.e. excluding meat and fish skin and bone waste), clearly there is a perception that the food is inedible. There is also a significant amount of pre-cooked meat and fish being thrown away that is served but left on the plate (this accounts for nearly a quarter of disposal in terms of weight and cost) and that smelt or tasted bad (this accounts for just less than one fifth by weight and cost).

Table 141 The proportion and annual tonnage and cost of avoidable pre-cooked meat and fish waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable pre-cooked meat and fish waste	Cost of avoidable pre-cooked meat and fish waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable pre-cooked meat and fish waste	100% (2.2% of avoidable food waste)	100% (4% of avoidable food waste)	89,900	£410
Other (inedible)	41.2%	46.7%	37,000	£190
Plate leftover	24.3%	23.4%	21,800	£100
Smelt/tasted bad	19.0%	19.3%	17,100	£80
In fridge/cupboard too long	12.4%	7.5%	11,100	£30
Past food date	3.1%	3.1%	2800	£10

The most common reason for throwing away pre-cooked meat and fish that could have been eaten is that it is perceived to be 'inedible' even though it could have been eaten. The above table indicates that every year in the UK households throw away more than 37,000 tonnes of pre-cooked meat and fish for this reason.

7.4.17 Pre-prepared foods

A quarter (25.5%) of the weight of avoidable food waste consists of pre-prepared foods. Three tenths (29.7%) of the cost of all avoidable food waste is made up of pre-prepared foods. It should be noted that for the purposes of this analysis, pre-prepared foods include pre-prepared foods like chilled ready meals, pizzas and items that do not fit into the other categories within this chapter (e.g. bakery items that are not bread, cakes or biscuits and dried items that are not cereal, rice or pasta).

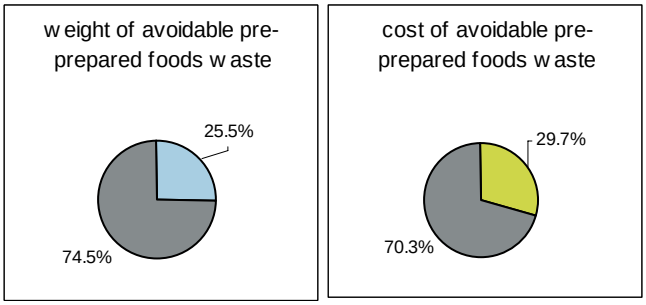
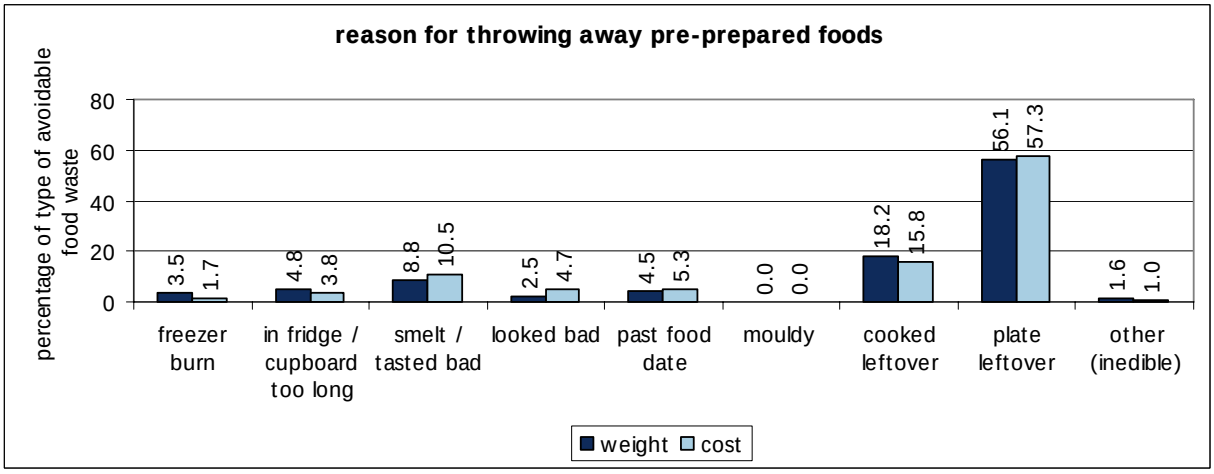


Figure 154 Reasons for throwing away avoidable pre-prepared foods waste



Pre-prepared foods such as chilled and frozen pizzas and ready meals are most likely to be thrown away because they have been prepared and served but not eaten. Nearly six tenths of all disposed pre-prepared foods are thrown away for this reason.

Table 142 The proportion and annual tonnage and cost of avoidable pre-prepared food waste by stated reason for disposal

Stated reason for disposal	Weight of avoidable pre-prepared food waste	Cost of avoidable pre-prepared food waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable pre-prepared food waste	100% (25.5% of avoidable food waste)	100% (29.7% of avoidable food waste)	1,039,000	£3030
Plate leftover	56.1%	57.3%	582,900	£1730
Cooked leftover	18.2%	15.8%	189,100	£480
Smelt/tasted bad	8.8%	10.5%	91,400	£320
In fridge/cupboard too long	4.8%	3.8%	49,900	£120
Past food date	4.5%	5.3%	46,800	£160
Freezer burn	3.5%	1.7%	36,400	£50
Looked bad	2.5%	4.7%	26,000	£140
Other (inedible)	1.6%	1.0%	16,600	£30

The most common reason for throwing away pre-prepared food that could have been eaten is that it is left on the plate after a meal. The above table indicates that every year in the UK households throw away more than 582,000 tonnes of pre-prepared foods for this reason.

7.4.18 Processed fruit

0.2% of the weight and 0.2% of the cost of avoidable food waste consists of processed fruit. This incorporates fruits that are not fresh such as tinned or dried fruits.

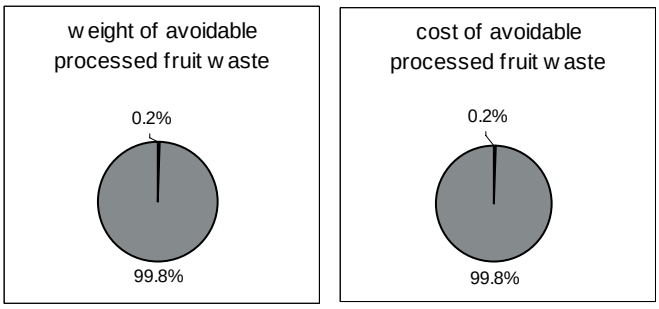
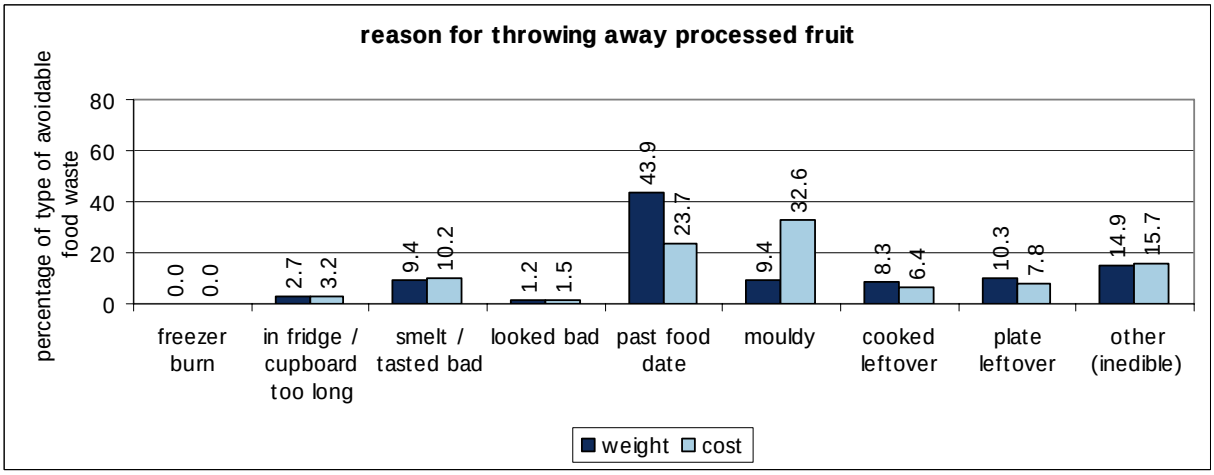


Figure 155 Reasons for throwing away avoidable processed fruit waste



Processed fruits are predominantly thrown away either because the food date has expired (more than four tenths in terms of weight) or because they have gone mouldy (more than three tenths in terms of financial cost).

Table 143 The proportion and annual tonnage and cost of avoidable processed fruit waste by stated reason for disposal

Reason for disposal	Weight of avoidable processed fruit waste	Cost of avoidable processed fruit waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable processed fruit waste	100% (0.2% of avoidable food waste)	100% (0.2% of avoidable food waste)	8300	£20
Past food date	43.9%	23.7%	3700	<£10
Other (inedible)	14.9%	15.7%	1200	<£10
Plate leftover	10.3%	7.8%	900	<£10
Smelt/tasted bad	9.4%	10.2%	800	<£10
Mouldy	9.4%	32.6%	800	£10
Cooked leftover	8.3%	6.4%	700	<£10
In fridge/cupboard too long	2.7%	3.2%	200	<£10
Looked bad	1.2%	1.5%	100	<£10

The most common reason for throwing away processed fruits that could have been eaten is that the food date has expired. The above table indicates that every year in the UK households throw away more than 3000 tonnes of processed fruits for this reason.

7.4.19 Processed vegetables

3% of the weight and 1.5% of the cost of avoidable food waste consists of processed vegetables. This category excludes vegetables that are fresh and includes vegetables that are purchased tinned such as baked beans or marrowfat peas.

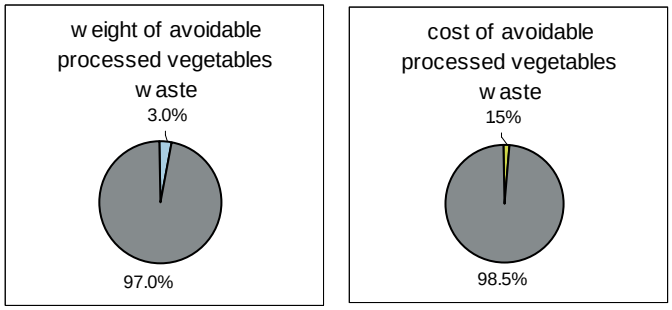
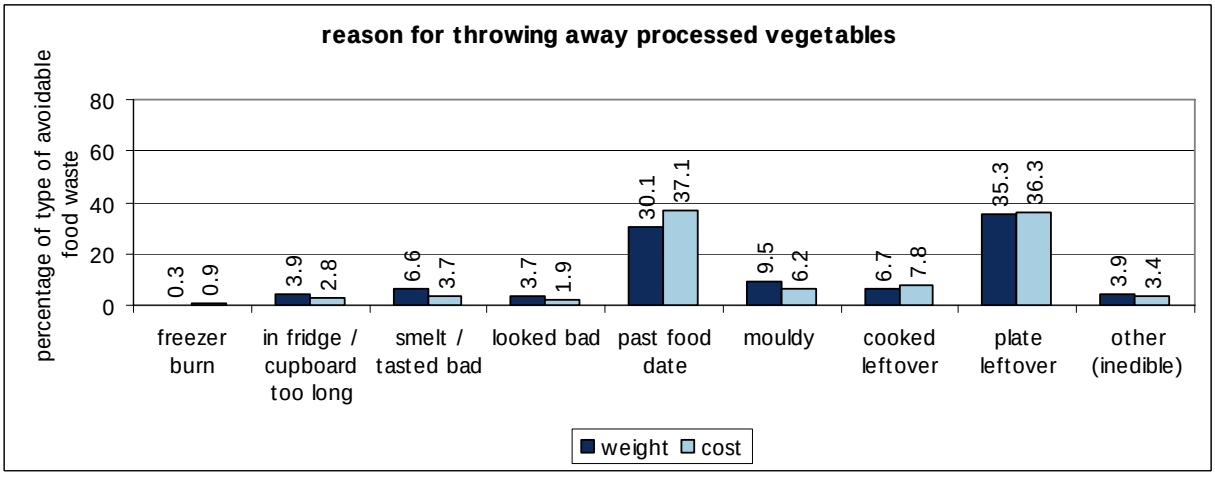


Figure 156 Reasons for throwing away avoidable processed vegetables waste



Processed vegetables are thrown away because they have been prepared and served but not eaten (more than a third of all disposed processed foods in terms of weight and cost) and because the food date has expired (more than a third in terms of cost and three tenths in terms of weight).

Table 144 The proportion and annual tonnage and cost of avoidable processed vegetable waste by stated reason for disposal

Reason for disposal	Weight of avoidable processed vegetable waste	Cost of avoidable processed vegetable waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable processed vegetables waste	100% (3% of avoidable food waste)	100% (1.5% of avoidable food waste)	120,300	£150
Plate leftover	35.3%	36.3%	42,500	£60
Past food date	30.1%	37.1%	36,200	£60
Mouldy	9.5%	6.2%	11,400	£10
Cooked leftover	6.7%	7.8%	8100	£10
Smelt/tasted bad	6.6%	3.7%	7900	£10
In fridge/cupboard too long	3.9%	2.8%	4700	<£10
Other (inedible)	3.9%	3.4%	4700	£10
Looked bad	3.7%	1.9%	4400	<£10
Freezer burn	0.3%	0.9%	400	<£10

The most common reasons for throwing away processed vegetables that could have been eaten are that they are left on the plate after the meal or that the food date has passed. The above table indicates that every year in the UK households throw away nearly 80,000 tonnes of processed vegetables for these reasons.

7.4.20 Fresh salads

5.6% of the weight and 4.9% of the cost of avoidable food waste consists of fresh salads. This category of salad items includes the normal salad vegetables (lettuces, tomatoes, cucumbers, radishes) plus coleslaws.

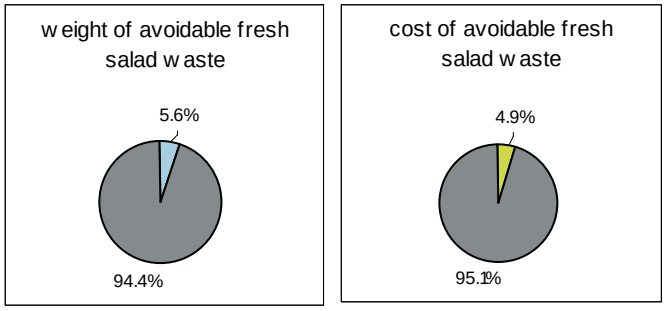
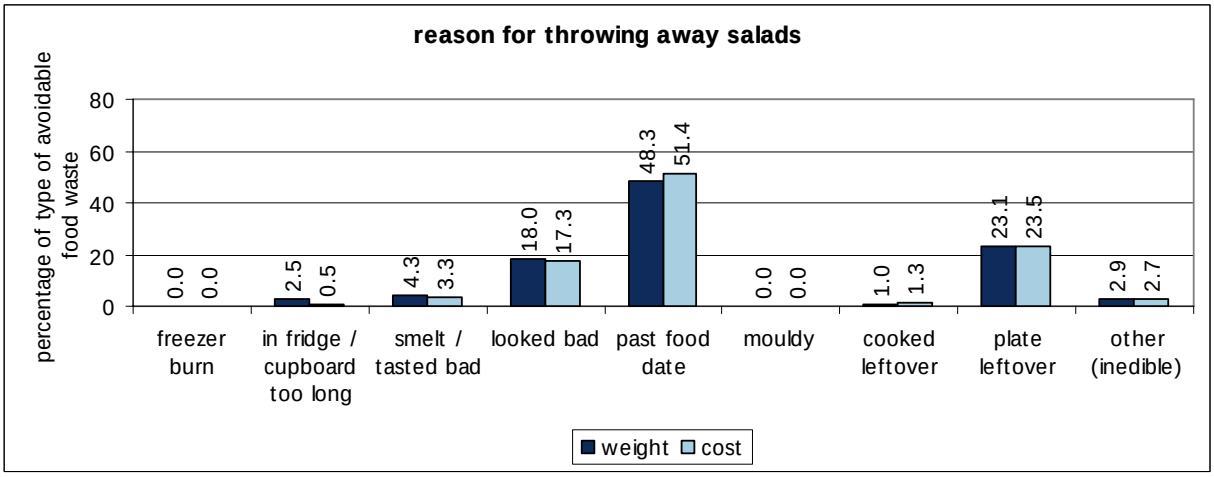


Figure 157 Reasons for throwing away avoidable fresh salad waste



The most common reason for disposing of fresh salad items is that the 'best before' date has expired; in terms of weight and cost this applies to around half of all fresh salad items thrown away. Nearly a quarter of fresh salad items are disposed of because there was too much placed on the plate to eat and just less than one fifth because it looked bad.

Table 145 The proportion and annual tonnage and cost of avoidable fresh salad waste by stated reason for disposal

Reason for disposal	Weight of avoidable salad waste	Cost of avoidable salad waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable fresh salad waste	100% (5.6% of avoidable food waste)	100% (4.9% of avoidable food waste)	228,200	£500
Past food date	48.3%	51.4%	110,200	£260
Plate leftover	23.1%	23.5%	52,700	£120
Looked bad	18.0%	17.3%	41,100	£90
Smelt/tasted bad	4.3%	3.3%	9800	£20
Other (inedible)	2.9%	2.7%	6600	£10
In fridge/cupboard too long	2.5%	0.5%	5700	<£10
Cooked leftover	1.0%	1.3%	2300	£10

The most common reason for throwing away fresh salads that could have been eaten is that the food date has expired. The above table indicates that every year in the UK households throw away more than 110,000 tonnes of salads for this reason.

7.4.21 Condiments

3.5% of the weight and 5.3% of the cost of avoidable food waste consists of condiments, oils and sauces. Liquids such as oils and sauces would have been disposed of in a container but the weight of the waste excludes the weight of the container.

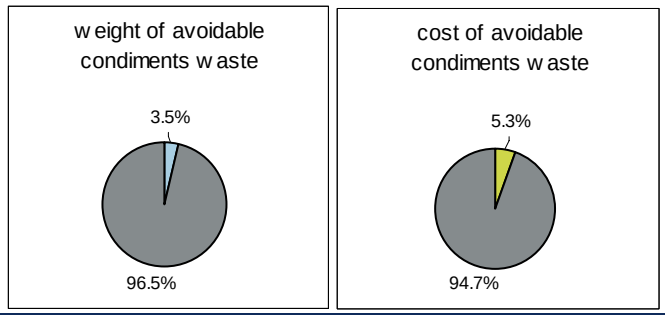
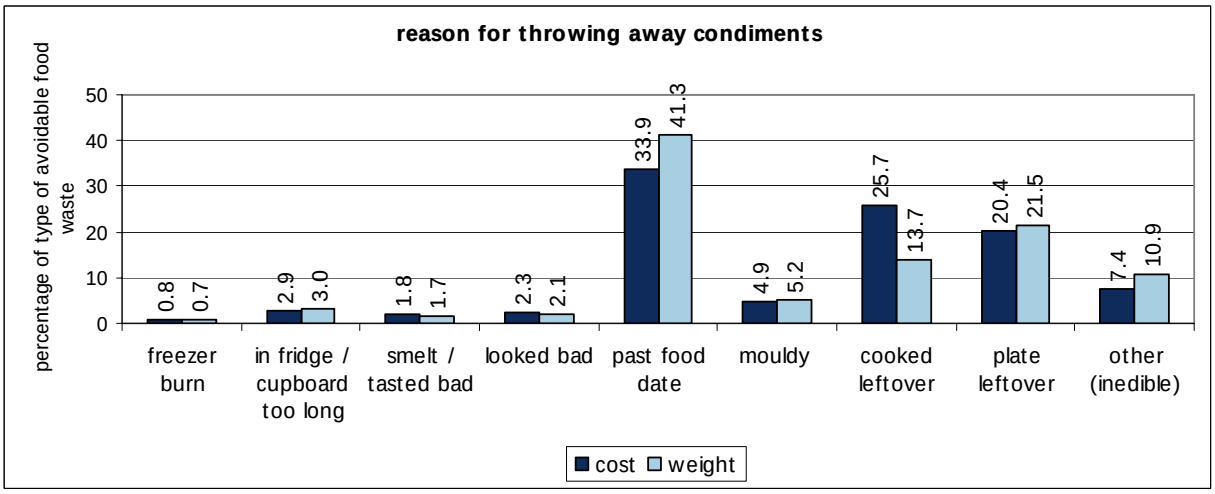


Figure 158 Reasons for throwing away avoidable condiments waste



Condiments are mostly thrown away because the food date has expired, and this accounts for more than four tenths of the cost and one third of the weight. In addition, one quarter of the condiments by cost are disposed because they are prepared but not served (25.7% by cost and just over one tenth by weight) or because they are prepared and served but not eaten.

Table 146 The proportion and annual tonnage and cost of avoidable condiments waste by stated reason for disposal

Reason for disposal	Weight of avoidable condiments waste	Cost of avoidable condiments waste	Weight (tonnes pa)	Cost (£ million pa)
Avoidable condiments waste	100% (3.5% of avoidable food waste)	100% (5.3% of avoidable food waste)	142,400	£540
Past food date	33.9%	41.3%	48,300	£220
Cooked leftover	25.7%	13.7%	36,600	£70
Plate leftover	20.4%	21.5%	29,000	£120
Other (inedible)	7.4%	10.9%	10,500	£60
Mouldy	4.9%	5.2%	7000	£30
In fridge/cupboard too long	2.9%	3.0%	4100	£20
Looked bad	2.3%	2.1%	3300	£10
Smelt/tasted bad	1.8%	1.7%	2600	£10
Freezer burn	0.8%	0.7%	1100	<£10

The most common reason for throwing away condiments that could have been eaten is that the food date has expired. The above table indicates that every year in the UK households throw away more than 48,000 tonnes of condiments for this reason.

7.5 The estimated annual tonnage and cost of avoidable food waste by stated reason for disposal

The following tables summarise the estimated weight (Table 147) and cost (Table 148) of avoidable food waste that is thrown away by UK households according to the reason for disposal.

Table 147 The estimated annual weight (tonnes) of avoidable food waste by reason for disposal

	Total	Plate leftover	Past food date	Cooked leftover	Looked bad	Mouldy	Other	Bad taste / smell	Stored too long	Freezer burn
Pre-prepared food	1,039,000	582,900	46,800	189,100	26,000	0	16,600	91,400	49,900	36,400
Bread	613,500	93,900	177,300	7400	131,300	123,900	42,300	25,200	8000	4300
Fresh fruit	542,500	25,000	72,200	0	134,500	201,300	58,600	38,000	13,600	0
Potatoes	358,500	150,900	38,400	37,300	48,800	44,500	26,500	7200	5400	0
Salads	228,200	52,700	110,200	2300	41,100	0	6600	9800	5700	0
Vegetables	203,600	27,100	29,100	13,200	43,000	54,800	22,000	8800	5900	0
Processed vegetables	190,400	67,200	57,300	12,800	7000	18,100	7400	12,600	7400	600
Fresh meat and fish	181,000	46,700	63,200	17,600	4000	0	17,900	21,900	9600	0
Condiments	142,400	29,000	48,300	36,600	3300	7000	10,500	2600	4100	1100
Biscuits and cakes	103,600	14,300	34,300	3300	18,100	4200	8500	13,300	3000	4600
Pre-cooked meat and fish	89,900	21,800	2800	0	0	0	37,000	17,100	11,100	0
Other dairy	88,200	12,600	55,600	4300	1900	1200	5300	4400	2200	700
Confectionery	62,500	16,100	18,800	900	5900	0	12,300	7300	1200	0
Rice	57,800	27,800	0	25,300	0	0	3900	0	900	0
Pasta	44,300	22,200	6400	8200	0	800	3000	1900	1900	0
Milk	40,200	5800	15,000	0	0	0	4200	15,300	0	0
Cheese	39,900	7200	14,800	400	2300	9100	3400	2300	400	0
Breakfast cereals	19,700	14,400	500	700	500	0	2800	800	0	0
Eggs	18,800	4700	10,500	100	500	0	1700	1100	200	0
Processed fruit	8300	900	3700	700	100	800	1200	800	200	0
Meat and fish products	7900	2600	2900	600	200	100	1000	400	100	0
Total tonnes per annum	**4,080,400**	**1,225,700**	**808,000**	**360,600**	**468,500**	**465,700**	**292,900**	**282,000**	**130,800**	**47,600**

Table 148 The estimated annual cost (£ million) of avoidable food waste by reason for disposal

	Total	Plate leftover	Past food date	Mouldy	Looked bad	Other	Bad taste / smell	Cooked leftover	Stored too long	Freezer burn
Pre-prepared food	£3030	£1730	£160	£0	£140	£30	£320	£480	£120	£50
Fresh fruit	£1070	£50	£120	£400	£240	£170	£70	£0	£20	£0
Bread	£1030	£230	£260	£290	£210	£70	£40	£20	£20	£10
Fresh meat and fish	£1020	£230	£440	£0	£20	£80	£150	£70	£30	£0
Condiments	£540	£120	£220	£30	£10	£60	£10	£70	£20	<£10
Salads	£500	£120	£260	£0	£90	£10	£20	£10	<£10	£0
Pre-cooked meat and fish	£410	£100	£10	£0	£0	£190	£80	£0	£30	£0
Vegetables	£380	£50	£60	£100	£70	£50	£20	£20	£10	£0
Confectionery	£350	£80	£140	£0	£30	£70	£50	£10	<£10	£0
Processed vegetables	£330	£120	£120	£20	£10	£10	£10	£30	£10	<£10
Biscuits and cakes	£300	£50	£110	£10	£40	£30	£30	£10	£10	£10
Potatoes	£300	£150	£30	£30	£30	£20	£10	£30	<£10	£0
Cheese	£250	£40	£80	£70	£10	£30	£10	<£10	<£10	£0
Other dairy	£220	£30	£140	<£10	<£10	£10	£10	£10	£10	<£10
Rice	£150	£80	£0	£0	£0	£10	£0	£60	<£10	£0
Pasta	£100	£50	£20	<£10	<£10	<£10	£10	£10	<£10	£0
Breakfast cereals	£70	£40	<£10	£0	<£10	£10	<£10	<£10	£0	£0
Eggs	£60	£20	£30	£0	<£10	£10	<£10	<£10	<£10	£0
Meat and fish products	£40	£10	£20	<£10	<£10	£10	<£10	<£10	£0	£0
Milk	£30	<£10	£10	£0	£0	<£10	£10	£0	£0	£0
Processed fruit	£20	<£10	<£10	£10	<£10	<£10	<£10	<£10	<£10	£0
Total £ per annum	**£10,180**	**£3290**	**£2240**	**£960**	**£920**	**£890**	**£840**	**£830**	**£290**	**£80**

7.6 Summary of chapter

This chapter has provided estimated annual weights and costs associated with food waste according to the different reasons for disposal and, in particular, reasons for the creation of food waste that could have been avoided.

The most common reasons for throwing away food that could have been eaten if it had been managed better are listed below.

1. Prepared and served but not eaten:
   - accounts for more than 1.2 million tonnes of food waste annually;
   - mainly attributable to pre-prepared food (48%); and
   - costs consumers £3.3 billion a year.

2. Gone past its date:
   - accounts for more than 800,000 tonnes of food waste annually;
   - mainly attributable to bread (15%) and salads (14%); and
   - costs consumers over £2 billion a year.

3. Looked bad:
   - accounts for nearly 470,000 tonnes of food waste annually;
   - mainly attributable to fresh fruit (29%) and bread (28%); and
   - costs consumers over £900 million a year.

4. Mouldy:
   - accounts for more than 460,000 tonnes of food waste annually;
   - mainly attributable to fresh fruit (43%) and bread (27%); and
   - costs consumers over £900 million a year.

5. Cooked but not served:
   - accounts for more than 360,000 tonnes of food waste annually;
   - mainly attributable to pre-prepared food (52%); and
   - costs consumers over £800 million a year.

6. Perceived as inedible even though it could in theory have been eaten:
   - accounts for nearly 300,000 tonnes of food waste annually;
   - mainly attributable to fresh fruit (20%), bread (14%) and pre-cooked meat and fish (13%); and
   - costs consumers nearly £900 million a year.

7. Tastes or smells bad:
   - accounts for more than 280,000 tonnes of food waste annually;
   - mainly attributable to pre-prepared food (32%); and
   - costs consumers over £840 million a year.

8. Been in the fridge or cupboard for too long:
   - accounts for more than 130,000 tonnes of food waste annually;
   - mainly attributable to pre-prepared food (38%); and
   - costs consumers nearly £290 million a year.

9. Freezer burn:
   - accounts for nearly 50,000 tonnes of food waste annually;
   - mainly attributable to pre-prepared food (76%); and
   - costs consumers over £75 million a year.

8 The weight and cost of food waste for different types of household

8.1 Introduction

Part of the reason for carrying out the research was to try to identify factors that drive waste production. It was acknowledged from the outset that this would be difficult to draw conclusions on because of the many interacting factors that are likely to play a role in why households waste food. This chapter provides information on the average financial cost and weight of the uneaten food produced at a household level, presented according to key demographics such as household composition and age. The chapter describes the average weight and cost of all food waste (including unavoidable food waste) and the avoidable food waste (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 and meat bones, as well as items that some people choose not to eat such as potato or carrot peelings or bread crusts. The figures presented in this chapter are an estimate of the food waste that households **produce**, i.e. waste that is thrown away via all methods of disposal or treatment including home composting, feeding to pets and down the sink. It should be noted that the weights have been converted from grammes to kilogrammes and annual costs have been rounded to the nearest £10, so rounding anomalies may occur.

The chapter describes correlations between the amount of food waste produced and the type of household producing it. It should not be assumed that the nature of the household is the **cause** of the food waste. It may be, for example, that the type of housing is linked to the size of the household which is in turn linked to the presence of children and it is this that results in different types and amounts of food waste. This problem of confounding variables is common when looking for causality in social data. Nevertheless the results are of general interest but should not be interpreted causally.

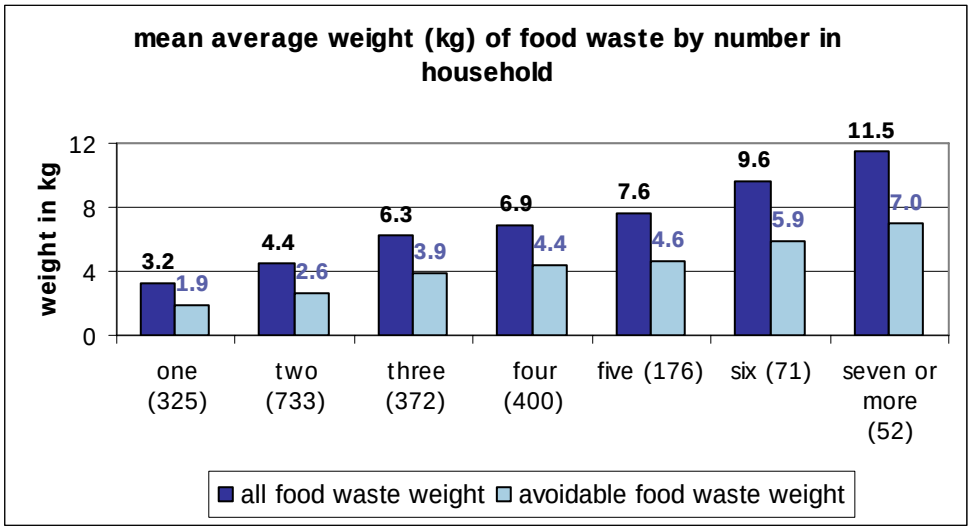
8.2 Do larger households produce more food waste?

Common sense suggests that larger households are likely to produce more waste. This section examines the extent to which this is the case specifically for food waste. It is important to note that there are several ways of looking at this data. From a local authority waste collection perspective, it is important to understand what a **household** produces as this is the waste-producing unit. From a policy perspective, it is also relevant to understand the amounts and costs **per capita**. For this reason both are presented in this chapter. Per capita figures have been calculated very simply by dividing the amount and cost of food waste by the number of people in the household irrespective of the likely food consumption of the individuals.[25]

[25] *Developing a model to accurately measure the amount of waste produced per person within a household would be possible but would be extremely complex and may turn out to be no more accurate than a simple model that divides total waste by the number of occupants. For reasons of transparency we therefore decided to take the simple approach for this report.*

8.2.1 The weight of food waste thrown away (all methods of disposal)

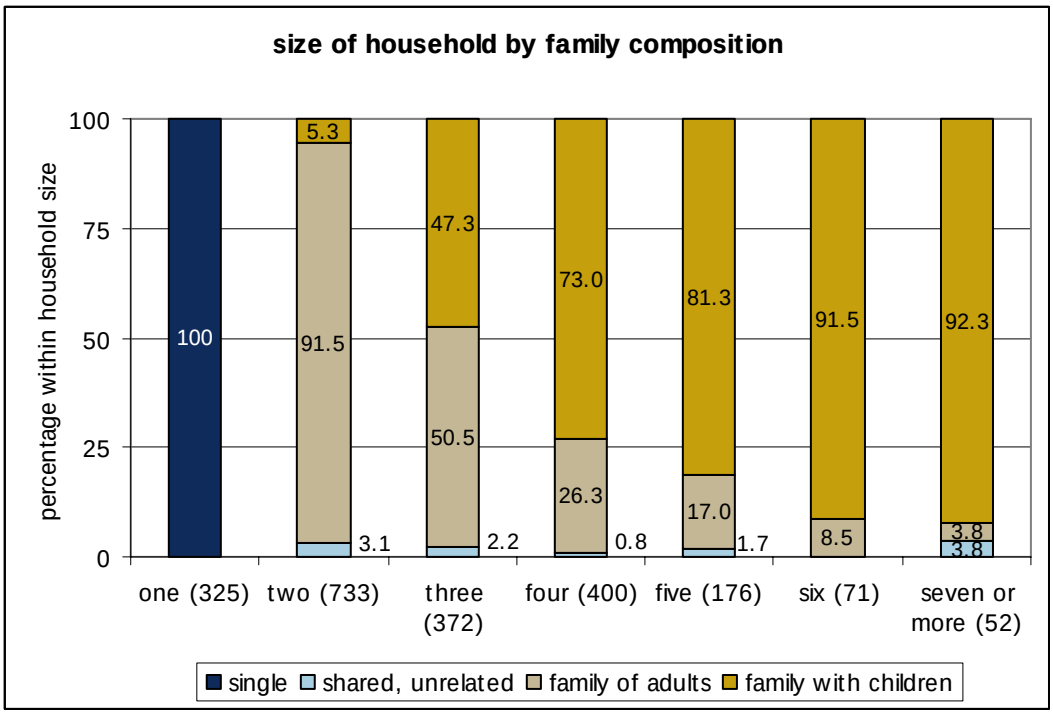
Figure 159 The weight (kg per household per week) of food waste produced by household size



The above chart illustrates that the weight of food waste is directly related to the number of occupants in the household, although the relationship is not proportionate (two occupants do not dispose of twice as much food waste as one occupant, for example). On average, households with seven or more occupants waste the most; the average seven-plus-occupancy household throws away 11.5kg of food a week (600kg a year) of which 7kg (60.5%) a week (360kg a year) is avoidable. Single-occupancy households waste the least; the average single-occupancy household throws away 3.2kg of food a week (170kg a year) of which 1.9kg (59.4%) a week (100kg a year) could be avoided.

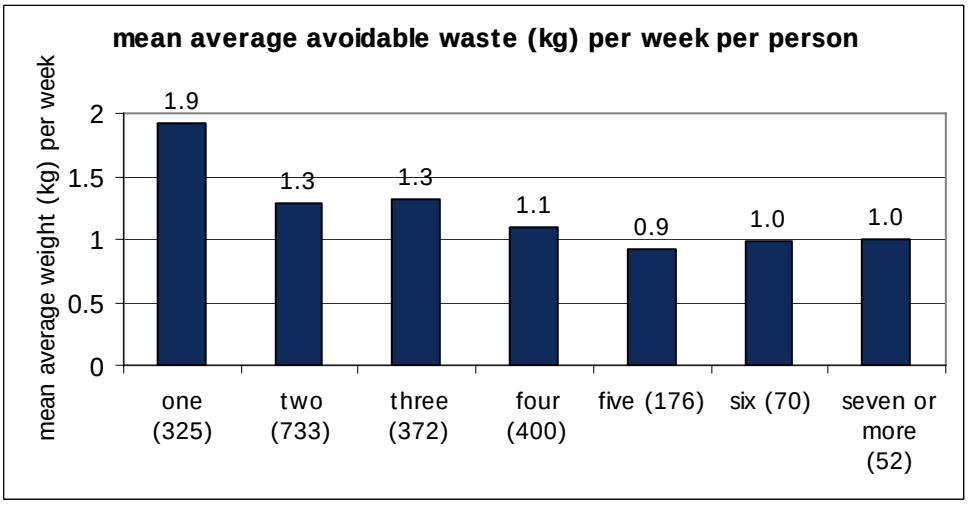
The research suggests that the relationship between household size and food waste is not a simple one. The chart below shows that households of different sizes are comprised of different types of household composition. It shows that the larger-sized households tend to comprise of families with children under 16 years of age; more than eight in 10 (81.3%) of the households with five occupants were made up of families with children, for example. This rises to more than nine in 10 for households of six (91.5%) or seven or more (92.3%) occupants. This suggests that it not just size of the household that is influencing food waste but the make-up of the household too. This is discussed in more detail in Section 8.3.

Figure 160 Household composition by number of occupants within the household



Although at a household level smaller households waste less food, a different picture emerges when the data is analysed at a per capita level, as Figure 161 shows.

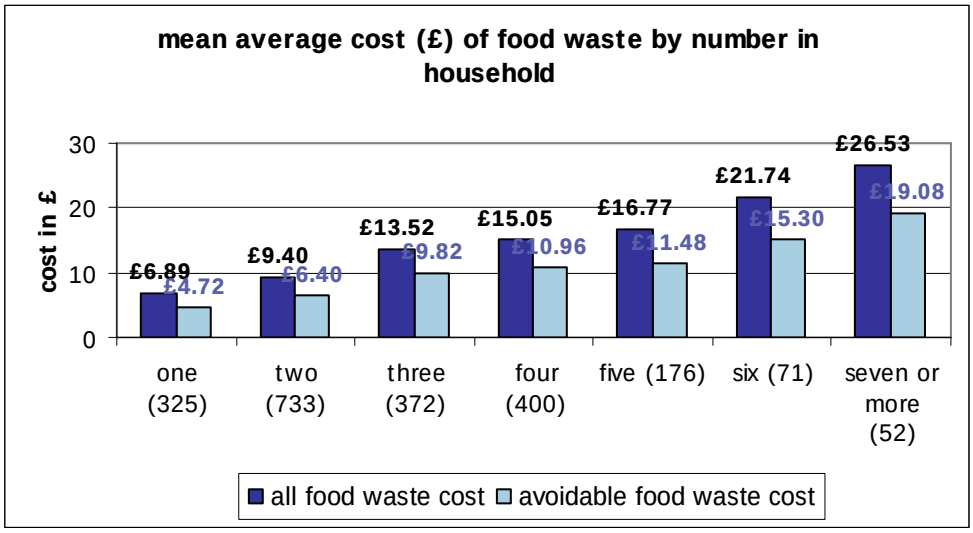
Figure 161 The average weight (kg per person per week) of avoidable food waste produced in households of different sizes



The chart shows that single households produce the most avoidable waste each week at 1.9kg (100kg per year). Larger households tend to waste less per capita, with households of four people or more all wasting around 1kg of avoidable food per week. Overall, the average weight of avoidable food waste per person regardless of household size is 1.3kg per week, which equates to 70kg per year.

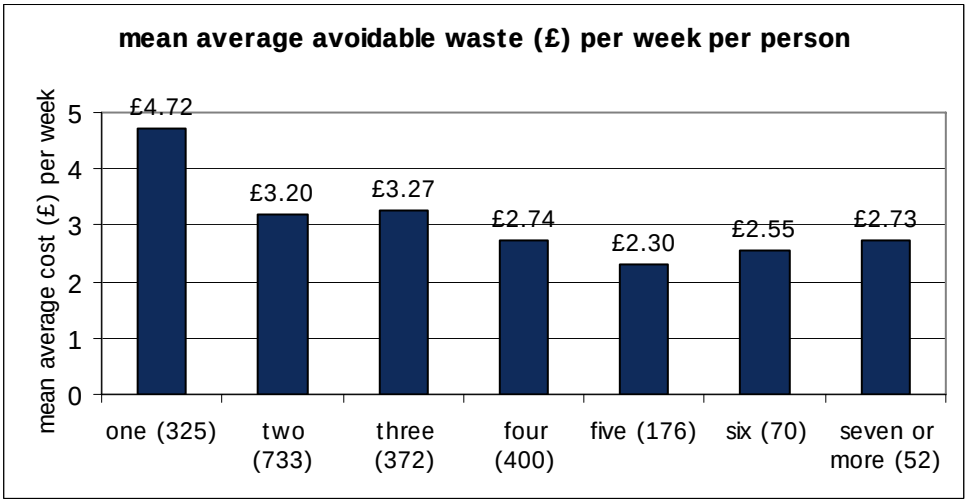
8.2.2 *The cost of food waste thrown away (all methods of disposal)*

Figure 162 The cost (£ per household per week) of food waste produced by households of different sizes



The above chart illustrates that, on average, households with seven occupants or more waste the most in financial terms; the average household consisting of seven or more people throws away nearly £27 of food a week (£1380 a year) of which just over £19 (71.9%) a week (£990 a year) is avoidable. Single-occupancy households waste the least in financial terms; the average single occupant throws away nearly £7 of food a week (£360 a year) of which nearly £5 (68.5%) a week (£250 a year) could be avoided.

Figure 163 The average cost (£ per person per week) of avoidable food waste produced by people living in households of different sizes



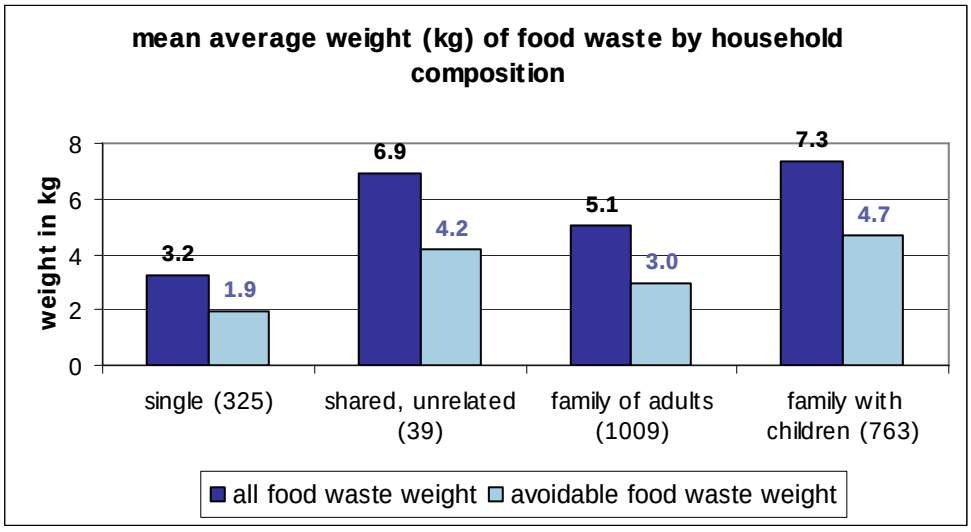
The above chart illustrates the cost of avoidable waste produced each week by each individual according to household size. This shows that people who live in single-occupancy households waste the most money each week by throwing away avoidable food at nearly £5. Individuals living in households consisting of five occupants waste the least at just over £2 a week. Overall, the average cost of avoidable food waste per person regardless of household size is more than £3 per week, which equates to £170 per year.

8.3 Do households with children produce more waste?

Previous research[26] has suggested that households with children produce more waste than those without and that single households produce less waste than households containing more than one person. This section examines the weight and cost of food waste according to the different household compositions.

8.3.1 The weight of food waste produced (all methods of disposal)

Figure 164 The weight (kg) of food waste produced by household composition per household per week

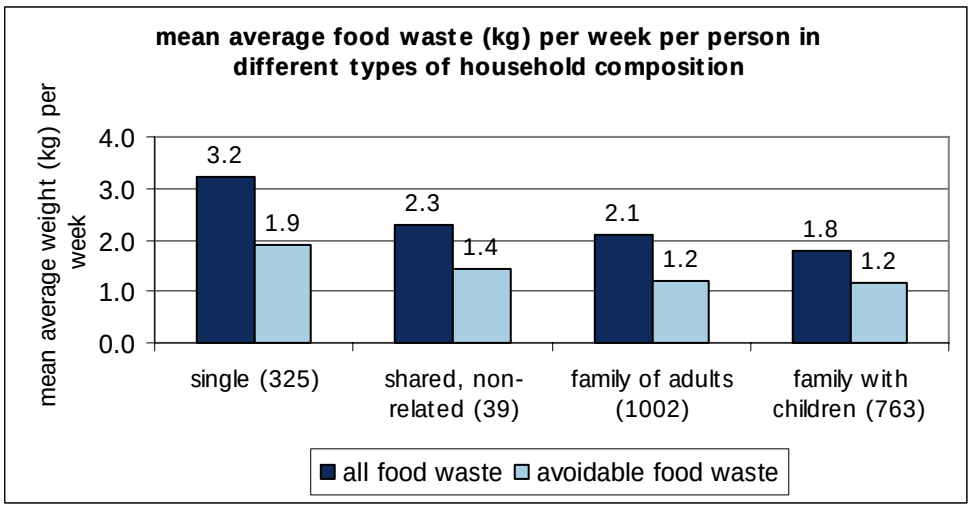


The above chart illustrates that, on average, families with children under 16 years old throw away the greatest amount of uneaten food in a week, both avoidable and unavoidable; the average family with children throws away 7.3kg of food of which 4.7kg (63.8%) is avoidable. This equates to 380kg per year of which 240kg is avoidable. Single-occupancy households throw away the least amount of food by weight each week; the average single occupant throws away 3.2kg of food of which 1.9kg (59.4%) could be avoided. This equates to 170kg per year of which 100kg is avoidable.

A slightly different picture emerges when the data is analysed on a per capita basis. Figure 163 showed that the amount of avoidable waste produced by individuals within multi-occupancy households is not equal, so that a four-member household does not produce twice as much waste as a two-person household. Clearly the amount of waste produced will depend on a range of factors, some of which have been recorded in this research such as age (babies may produce less than adults but children may produce more than adults) and some of which have not, such as health or disability, proximity to shops, propensity to eat out and so on. The following chart (Figure 165) looks at the amount of food waste generated per person within households of different composition.

[26] *The kitchen diary research conducted in February 2007 indicated that families with children threw away the greatest amount of food by weight. The average weight of food disposed of by these households was 3.3kg compared to single-occupancy households that threw away food weighing 2.2kg during the week.*

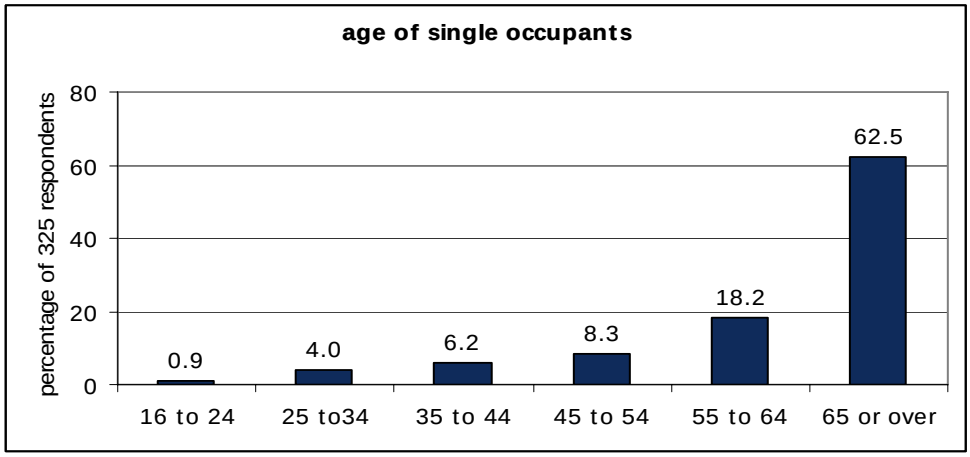
Figure 165 The amount (kg) of avoidable waste produced per capita by household composition



This shows that although single households produce the least waste when compared with other households (see Figure 164), they produce the most on a per capita basis. People who live in households of unrelated adults each waste on average 1.4kg of food that could have been avoided each week (72.8kg a year) while the household as a whole wastes 4.2kg a week (360kg per year). Individuals living within a family setting (with or without children) waste the least at 1.2kg per week (62.4kg a year) while as a household they waste the third most at 3kg per week (160kg per year).

Because single-occupancy households waste more avoidable food per capita than multi-occupancy households, the chart below examines their make-up in more depth.

Figure 166 How old are the occupants of single households?

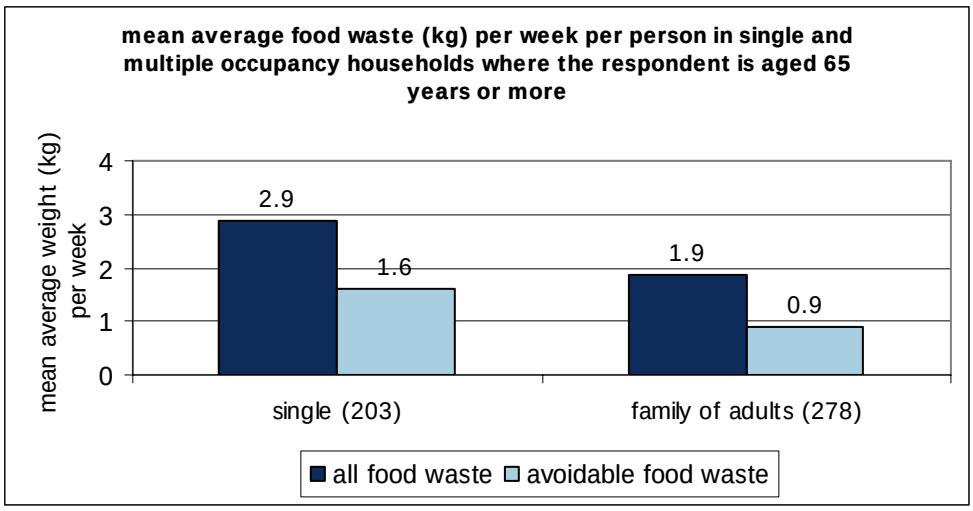


The above chart illustrates that single occupants are most likely to be aged at least 65 years, with more than six in ten (62.5%) aged 65 years or more. Nearly a fifth (18.2%) are aged between 55 and 64 years, whilst seven in ten (69.1%) are retired. Because households of older people, especially households of over 65s, generally claim to be less tolerant of wastefulness than younger households[27] this suggests that there may be some factors

[27] *Brook Lyndhurst, January 2007. WRAP food behaviour consumer research.*
WRAP, 2006. A quantitative assessment of the nature, scale and origin of post-consumer food waste arising in Great Britain, indicated that twice as many respondents aged 65 years or more strongly agreed that they actively try to minimise food waste more than those aged 16 to 24 years.

beyond their control that are causing retired single households to waste more food. Possibilities include having to buy items in portion sizes that are too large, not having access to a freezer or illness forcing a change of eating habits. The chart below compares the weight of food waste for single-occupancy and adult-family households in which one of the occupants is aged 65 years or more.

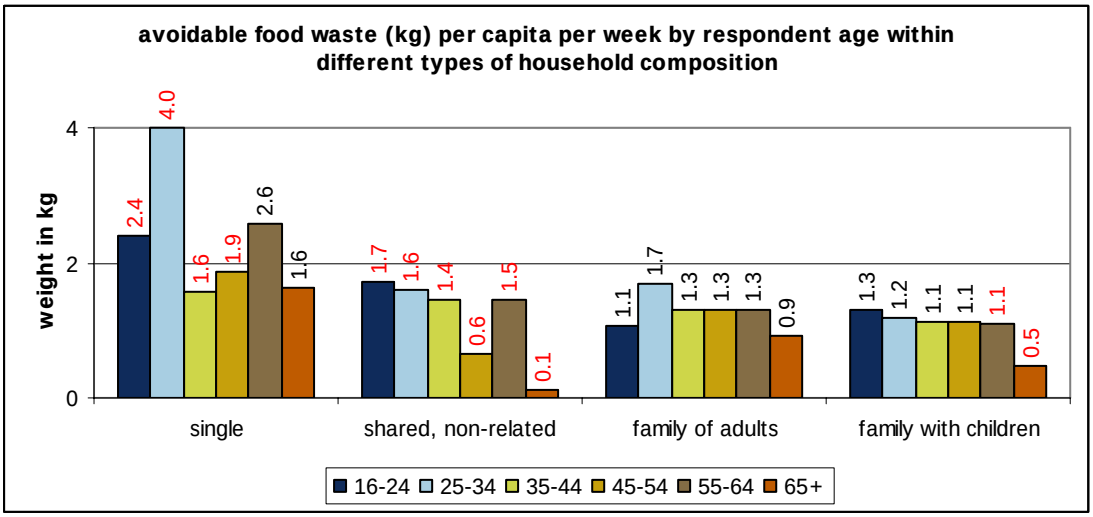
Figure 167 How much food do households with one or more occupants of retirement age waste?



The above chart indicates that single-retired households tend to waste more food than adult-family households with one or more retired occupants.

The following chart examines the per capita weight of avoidable food waste produced by all single-occupancy households, both retired and not retired, by households of different composition according to the respondent's age. (Where the data label appears in red text, this signifies less than 50 households and should be treated as indicative only.)

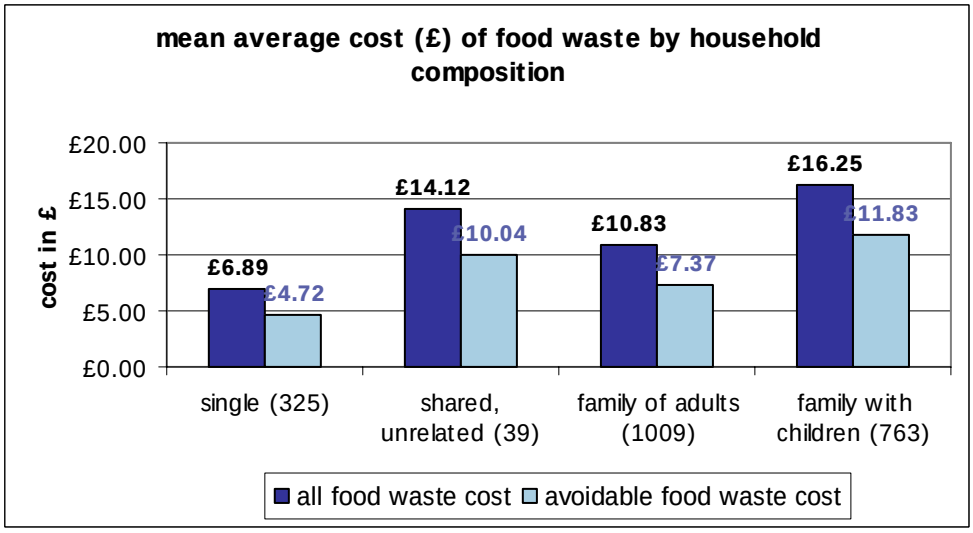
Figure168 How much food do households with one or more occupants of retirement age waste?



This shows that, on a per capita basis, people over 55 years throw away the most avoidable food waste when they live in single occupancy households (compare the fifth and sixth bars of each set). This also applies in general terms to the other age groups. Together with the information from Figure 167 that showed single-retired households waste more food than other retired households, the conclusion is that there is something about living in a single household that encourages higher levels of food wastage.

8.3.2 The cost of food waste thrown away (all methods of disposal)

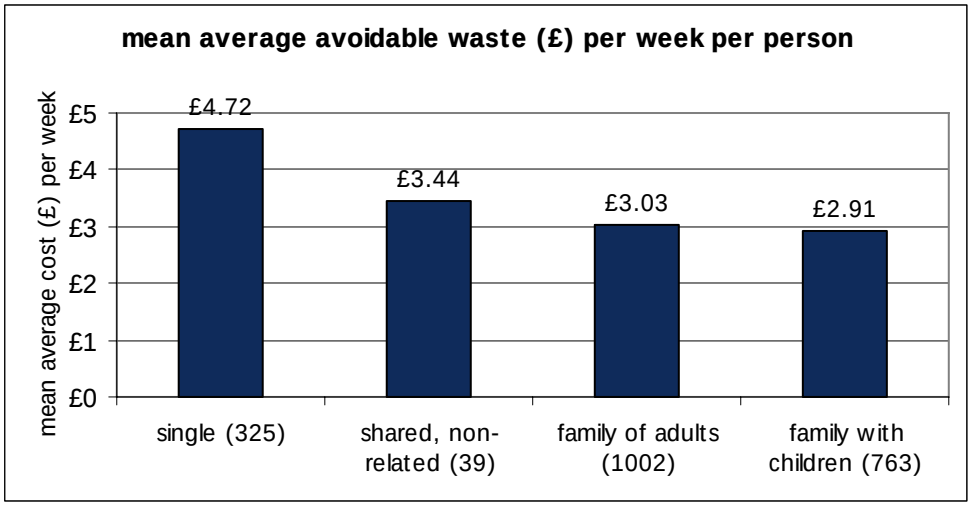
Figure 169 The cost (£) of food waste produced by households of different composition per household per week



The above chart illustrates that, on average, families with children throw away the most food in financial terms; the average family with children throws away more than £16 per week (£850 per year) of food of which nearly £12 (72.8%) per week (£620 per year) is avoidable. Single-occupancy households waste the least in financial terms; the average single occupant throws away just under £7 of food a week (£360 per year) of which just under £5 (68.5%) a week (£250 per year) could be avoided.

Households with children tend to be larger than households without. The chart below shows the amount of avoidable waste produced on a per capita basis within households of different composition.

Figure 170 The average cost (£ per household per week) of avoidable food waste produced per person in households of different composition



The above chart illustrates the cost of avoidable waste produced each week by each individual within households of different composition. This shows that single occupants generate nearly £5 a week (£250 per year) of avoidable food waste compared to individuals living within a family with children who each generate less than £3 a week (£150 per year).

8.4 Do households at different lifestyle stages waste different amounts of food?

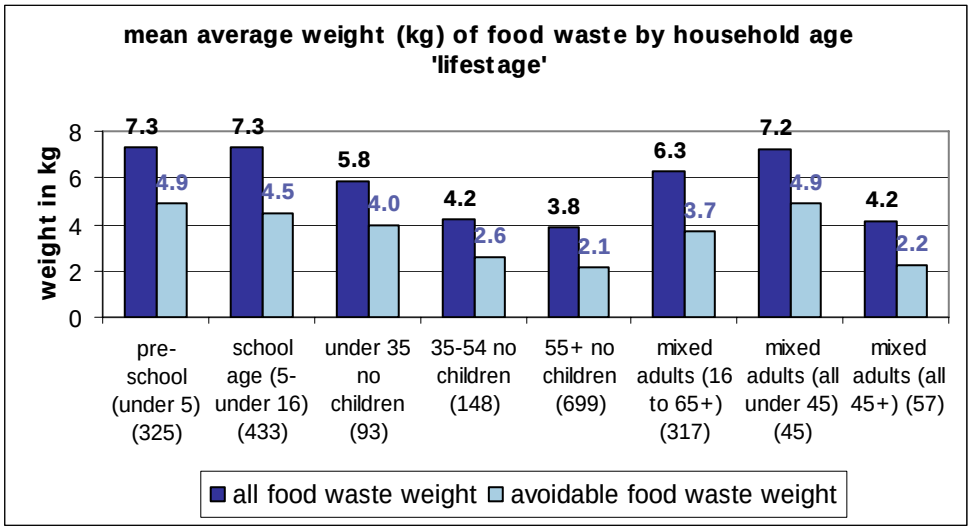
Previous research has suggested that households of young professionals and households with children are more wasteful with food. This section looks at the evidence from this study. For this analysis children were considered to be under 16 years of age and the lifestages examined are:

- households with pre-school children (aged under five);
- households with school-age children (aged five to under 16);
- households with no children, all adults aged under 35;
- households with no children, all adults aged 35 to under 55;
- households with no children, all adults aged 55 or over;
- households with no children, multiple adults of mixed ages (16 to under 45);
- households with no children, multiple adults of mixed ages (45 to 65 or more); and
- households with no children, multiple adults of mixed ages (16 to 65 or more).

The above categories are mutually exclusive and do not take household composition into account; a group of university students living together will be categorised as ‘households with no children, all adults aged under 35’, as would a young married couple that do not have children.

8.4.1 *The weight of food waste thrown away (all methods of disposal)*

Figure 171 The weight (kg) of food waste produced per household per week by household 'lifestage'



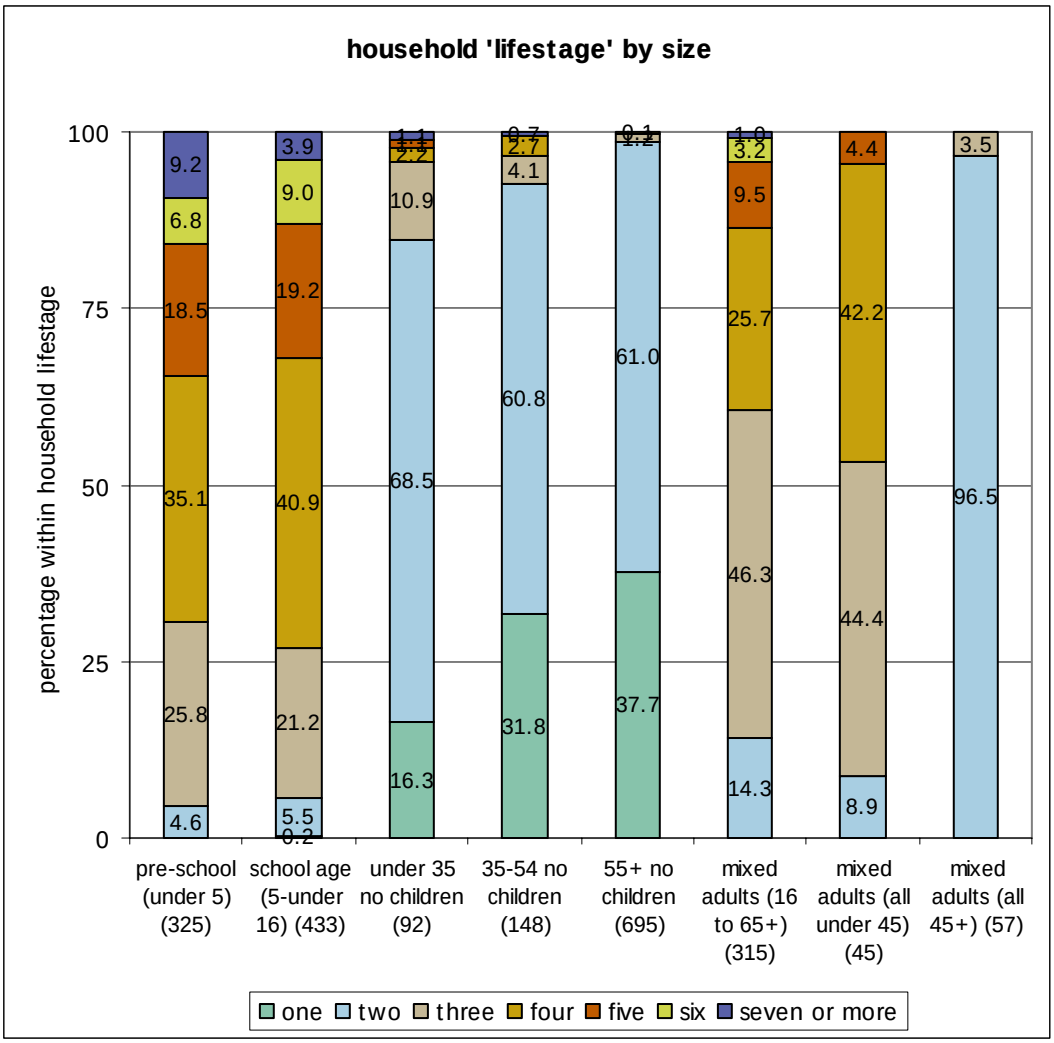
The above chart illustrates that, on average, families with children (the first two sets of bars) waste the most food compared to other types of households. Regardless of the age of the youngest child (pre-school or school age), these families throw away 7.3kg of food a week (380kg a year). Households in which the youngest child is aged under five years throw away the greatest proportion of avoidable food waste; more than two thirds (67.1%, 4.9kg) of their food waste each week (250kg a year) is avoidable.

Households in which all occupants are adults aged over 16 but less than 45 years (the seventh set of bars) also waste a significant amount of food – almost as much in total and the same in terms of avoidable food as households with young children. These adults throw away 7.2kg of food each week (370kg a year) of which 4.9kg (68.1%) a week (250kg a year) could be avoided.

Households in which all occupants are aged 55 years or more (the fifth set of bars) waste the least; the average household where occupants are aged 55 years or more throws away 3.8kg of food a week (200kg a year) of which 2.1kg (55.3%) a week (110kg a year) could be avoided.

There is a link between lifestage and household size; the following chart shows the number of occupants within the household according to the household's lifestyle stage.

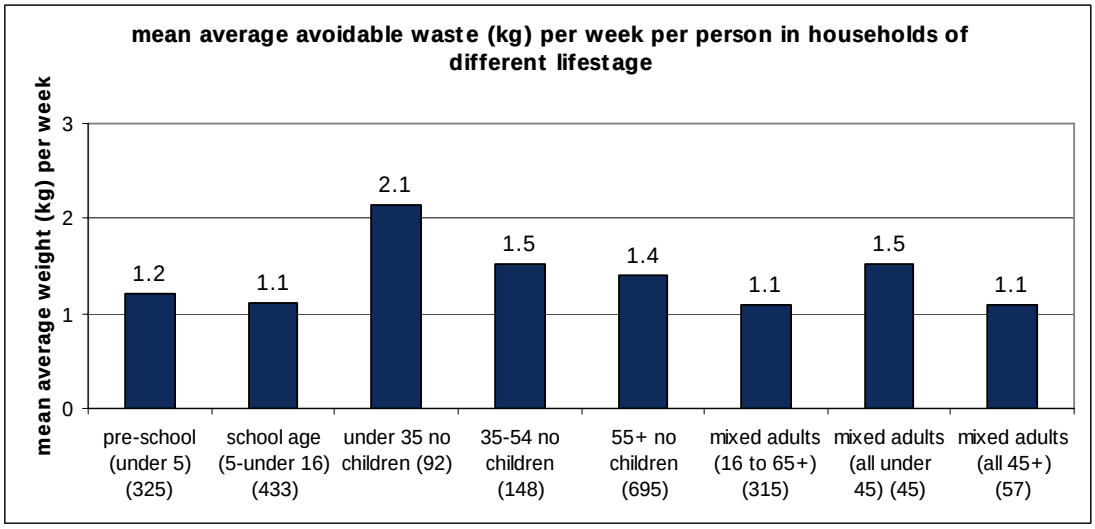
Figure 172 Household lifestage by number of occupants



This suggests that households with children (the first two bars) are the most likely of all the lifestage groups to be large. A third of the families with children consist of five or more occupants. Conversely, very few (less than 15% at best) of the other lifestage groups consist of this many occupants.

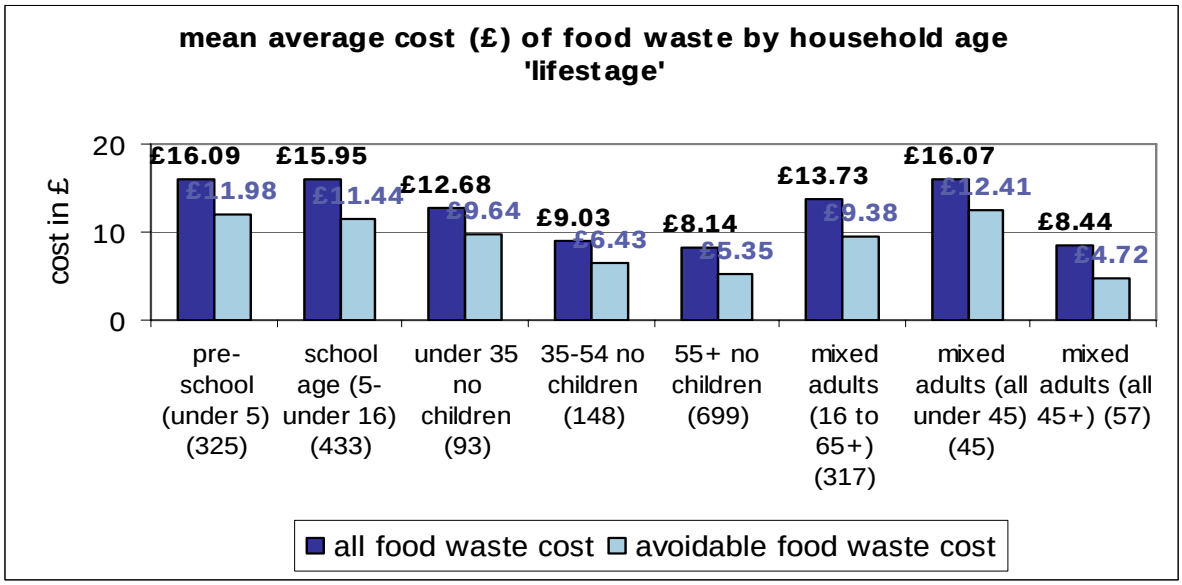
Although at a household level households with children produce the most food waste, a slightly different picture emerges with a per capita analysis. The following chart shows that individuals living in households in which there are no children and the adults are all aged between 16 and under 35 years waste the most avoidable food at 2.1kg a week (110kg a year). Indeed, with the exception of households in which there are only adults aged over 45 years, on a per capita basis households with children generate less avoidable food waste than those without.

Figure 173 The amount of avoidable waste produced per person by household 'lifestage'



8.4.2 The cost of food waste thrown away (all methods of disposal)

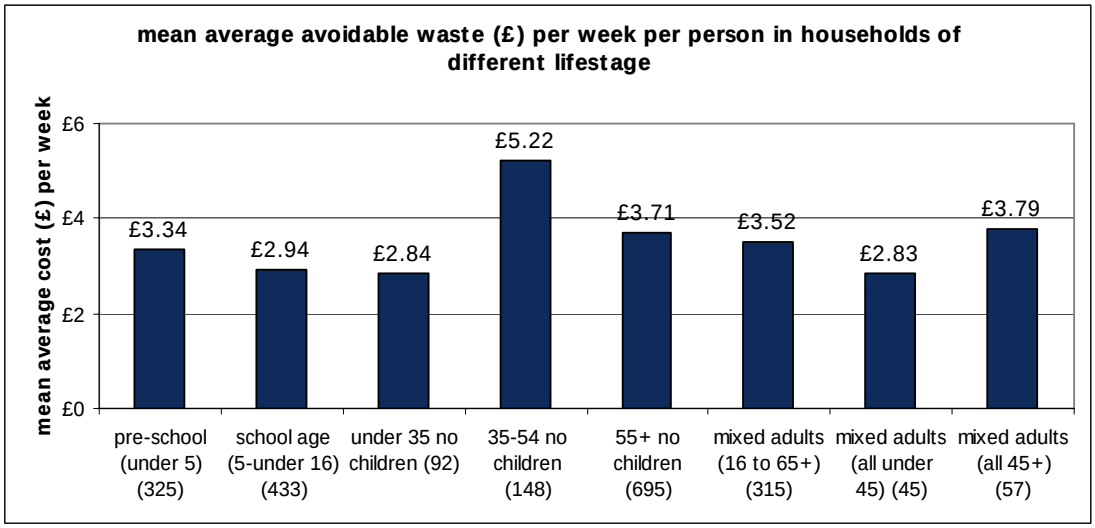
Figure 174 The cost (£ per household per week) of food waste produced by 'lifestage'



The above chart illustrates that, on average, families with the youngest child under five and households of adults all aged 16 to under 45 years of age waste the most in financial terms. These two types of households each throw away more than £16 of food a week (£840 a year). The households consisting of adults aged 16 to 45 years throw away the most avoidable waste at over £12 (77.2%) per week (£650 per year), while families with a pre-school child throw away just under £12 (73.4%) of avoidable food a week (£650 a year).

Households in which the occupants are all aged at least 55 years waste the least (including unavoidable food waste) in financial terms; the average household where the occupants are aged 55 years or more throws away just over £8 of food a week (£420 a year) of which more than £5 (65.7%) a week (£280 a year) could be avoided. However, it is the households in which all occupants are of mixed ages but all are aged at least 45 years that have the lowest avoidable food waste. These households throw away less than £5 of avoidable food each week (£250 a year).

Figure 175 The amount (£) of avoidable waste produced per person by household 'lifestage'



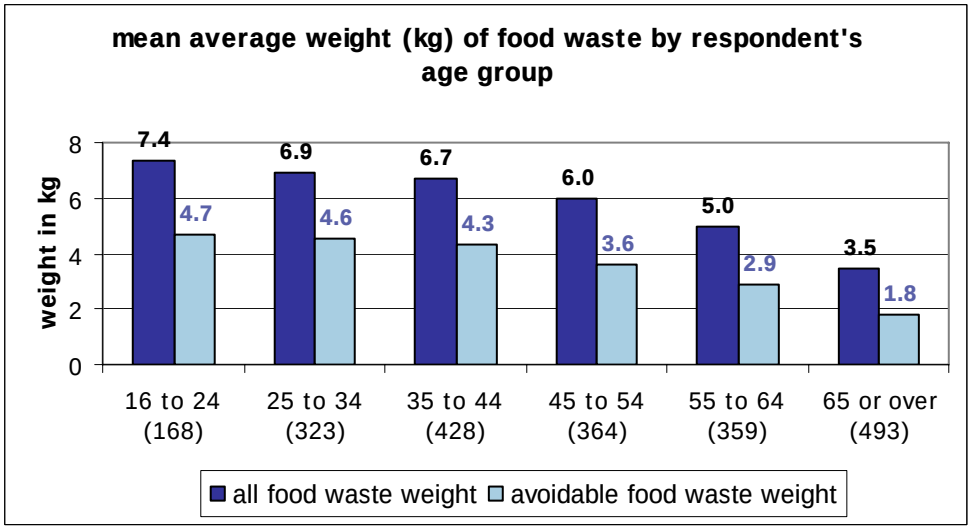
The above chart illustrates that although households with children generate the most food waste in terms of cost, this is not the case on a per capita basis. Individuals that live in households comprising of people aged between 35 and 54 years each produce avoidable food waste with a financial cost of over £5 per week (£270 per year).

8.5 Do older households waste less food?

Previous research has shown that older people tend to waste less. This is normally attributed to this age group's exposure to 'wartime values'. This section examines the evidence from this research. It should be noted that the age recorded was the age of the respondent to the survey, who was normally the person with some responsibility for food shopping, so it may not reflect the age group of everyone in the household.

8.5.1 The weight of food waste thrown away (all methods of disposal)

Figure 176 The weight (kg per household per week) of food waste produced by households of different age groups

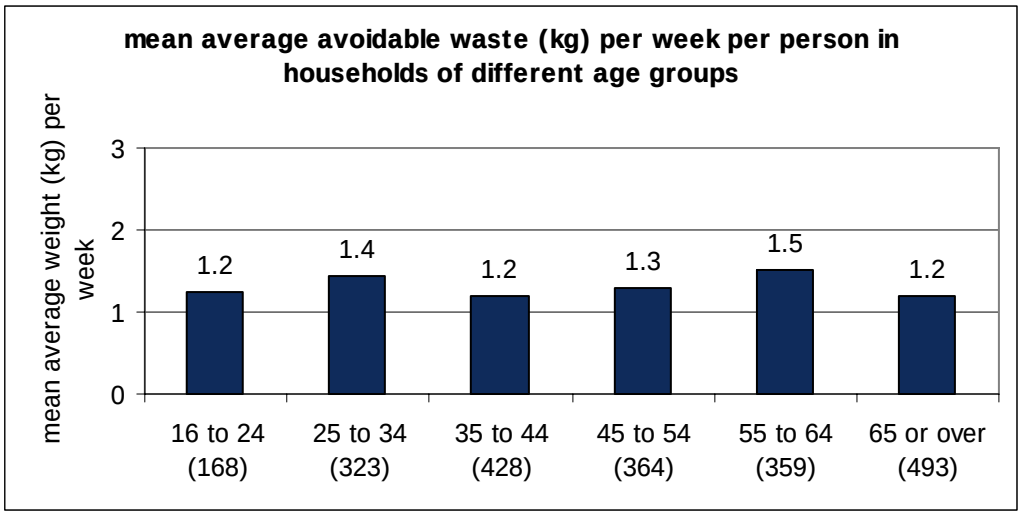


The above chart illustrates that there is a distinct relationship between the amount of food thrown away and the age of the respondent. On average, households where the main shopper is younger throw away more; for

example, households where the main shopper is aged between 16 and 24 years throw away 7.4kg of food a week (380kg a year) of which 4.7kg (63.2%) a week (240kg a year) is avoidable. By contrast, households where the main shopper is aged at least 65 years waste the least; these households on average throw away 3.5kg of food a week (180kg a year) of which 1.8kg (51.4%) a week (90kg a year) could be avoided.

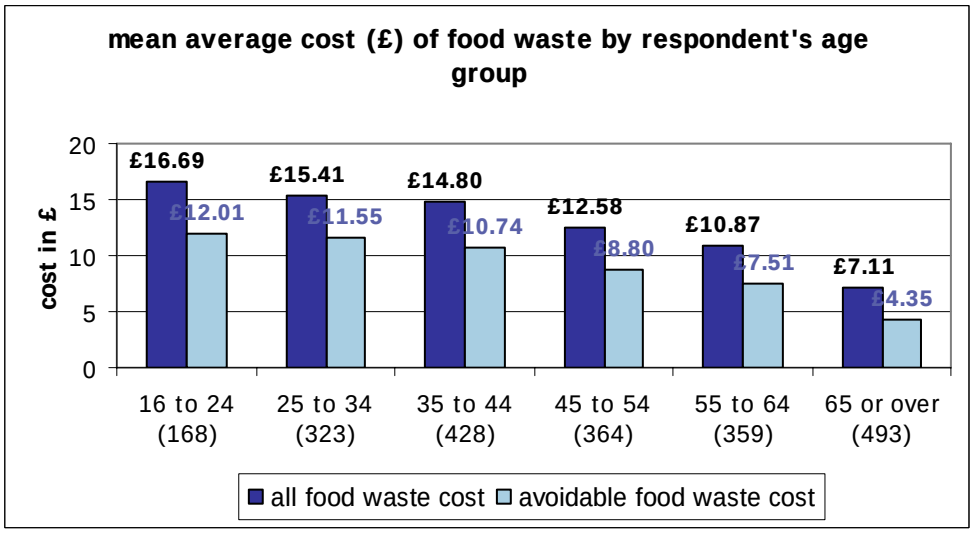
Analysis on a per capita basis shows a slightly different picture with no relationship emerging between age and the amount thrown away. The following chart illustrates that on a per capita basis individuals in households where the respondent is aged 55 to 64 years appear to waste the most food that could have been avoided, while the over 65s waste just as much avoidable food as the 16 to 24s.

Figure 177 The amount (kg) of avoidable waste produced per person in households of different age groups



8.5.2 The cost of food waste thrown away (all methods of disposal)

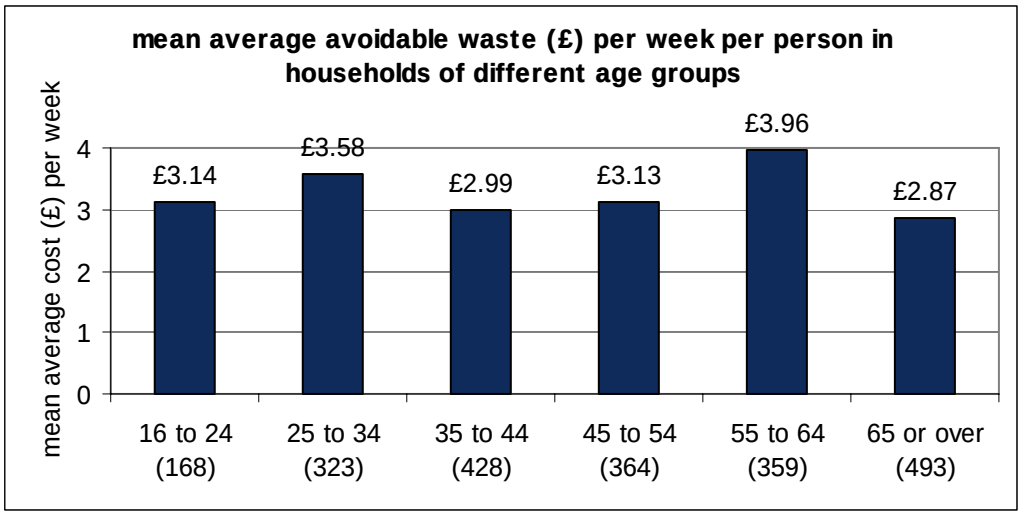
Figure 178 The cost (£ per household per week) of food waste produced by households of different age groups



The above chart illustrates that, on average, households in which the main shopper is younger waste the most in financial terms as well as in quantities. The average household in which the main shopper is aged between 16 and 24 years throws away nearly £17 of food per week (£870 per year) of which £12 (72%) a week (£620 a year) is avoidable. Households where the main shopper is aged at least 65 years throw away the least in financial

terms. The average household in which the main shopper is aged 65 years or more throws away more than £7 of food a week (£370 a year) of which more than £4 (71.3%) a week (£230 a year) could be avoided.

Figure 179 The amount (£) of avoidable waste produced per person in households of different age groups



On a per capita basis, households in which the respondent was aged between 55 and 64 years generate the greatest amount of avoidable food waste in terms of cost. Each week the individuals within these households waste nearly £4 of avoidable food (£210 per year). Conversely, individuals in households where the respondent is of retirement age waste the least amount of avoidable food at less than £3 per week (£150 per year). Taken as a whole, though, there is not a great deal of difference between the different age groups when food waste is examined at a household (not per capita) level.

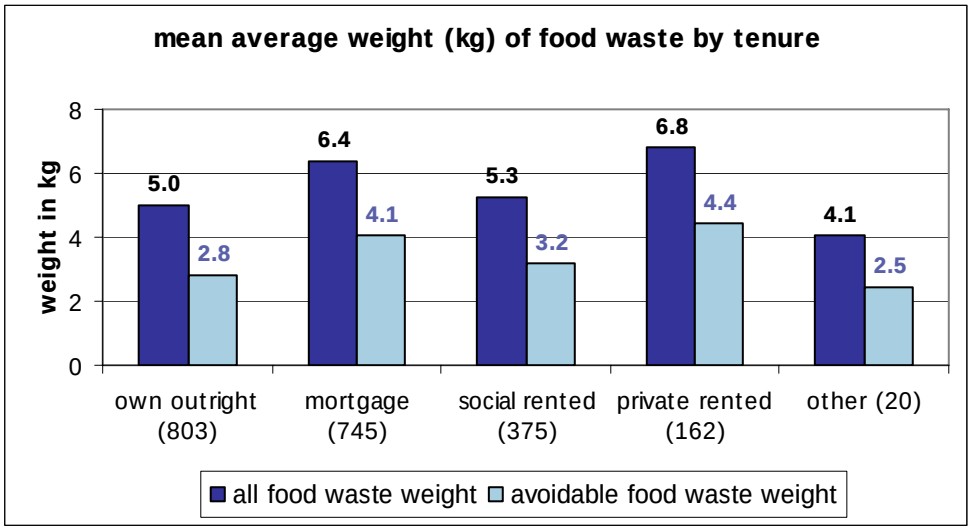
8.6 Do renters waste more than homeowners?

Previous research[28] suggests that people who rent their home, especially people who rent from a social landlord, are more likely to waste food than those who own their own home either outright or with a mortgage. This section examines the evidence from this research project.

[28] *Brook Lyndhurst, January 2007. WRAP food behaviour consumer research*

8.6.1 The weight of food waste thrown away (all methods of disposal)

Figure 180 The weight (kg) of food waste produced by households of different tenures per household per week



The above chart illustrates that, on average, householders that rent their property privately waste the most; the average household in private rented accommodation throws away 6.8kg of food a week (350kg a year) of which 4.4kg (65.4%) a week (230kg a year) is avoidable. Excluding respondents that live in 'other' types of households, because there are so few of them in the study, households that own their home outright throw away the least amount of food by weight each week; the average household of this type throws away 5kg of food of which 2.8kg (56.1%) could be avoided.

This finding is not unexpected because the majority of householders that own their home outright will be older and Section 8.5 has already shown there is a relationship between food waste and age at a household level (although not at a per capita level). Similarly, it is likely that householders that own their home outright will be smaller in size. To test this hypothesis the following charts illustrate the tenure of the property according to the respondent's age group (Figure 181) and the size of the household (Figure 182).

Figure 181 Tenure by age group of the main shopper

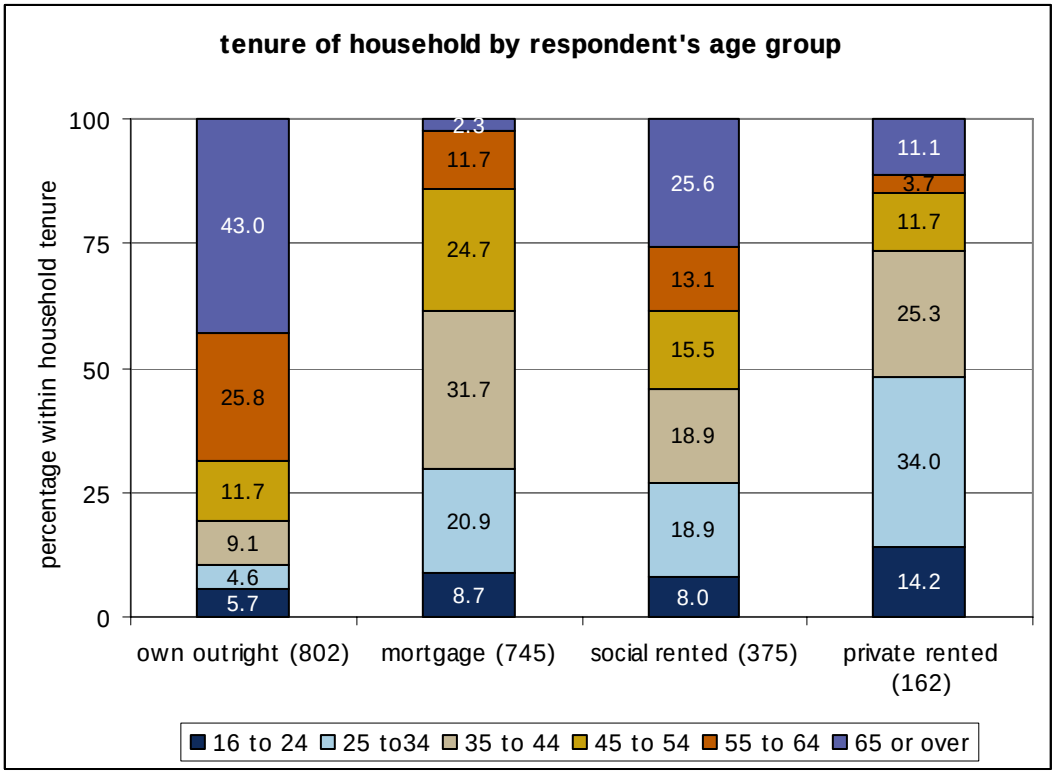


Figure 182 Tenure by household size

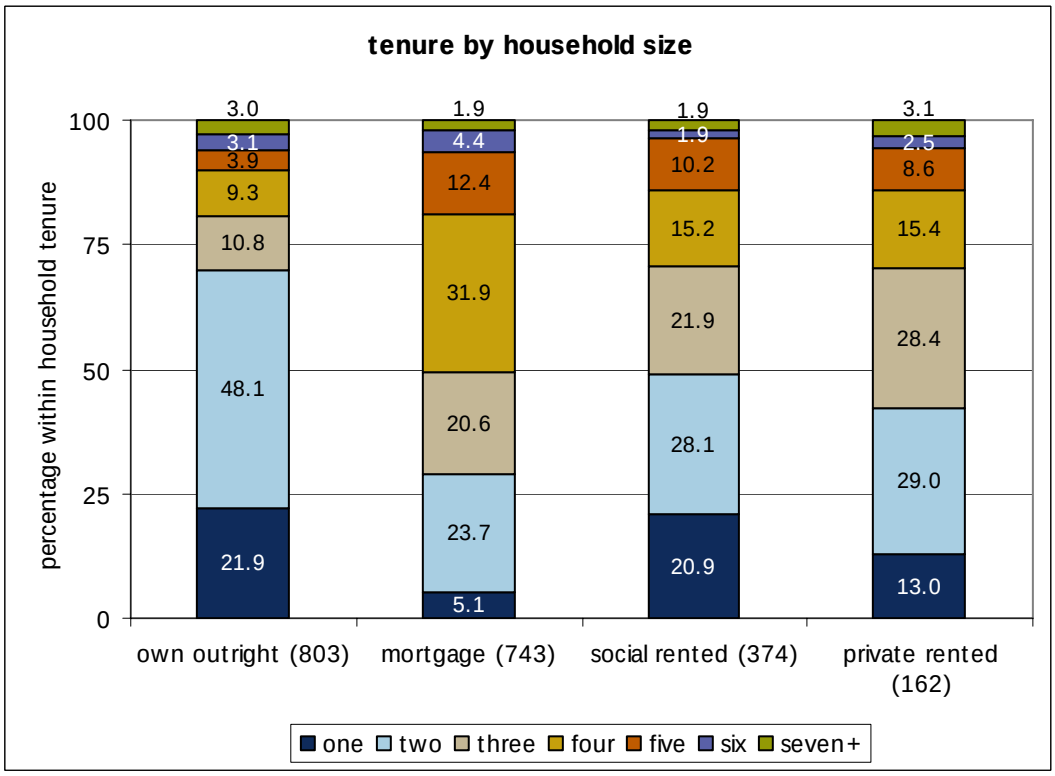


Figure 181 shows that nearly seven in 10 (68.8%) of the householders that own their property outright are aged at least 55 years and that over two fifths are aged 65 or more. Indeed, an over-65 household is more likely to be an outright owner than any other type of tenure. By contrast households that rent privately waste the most food

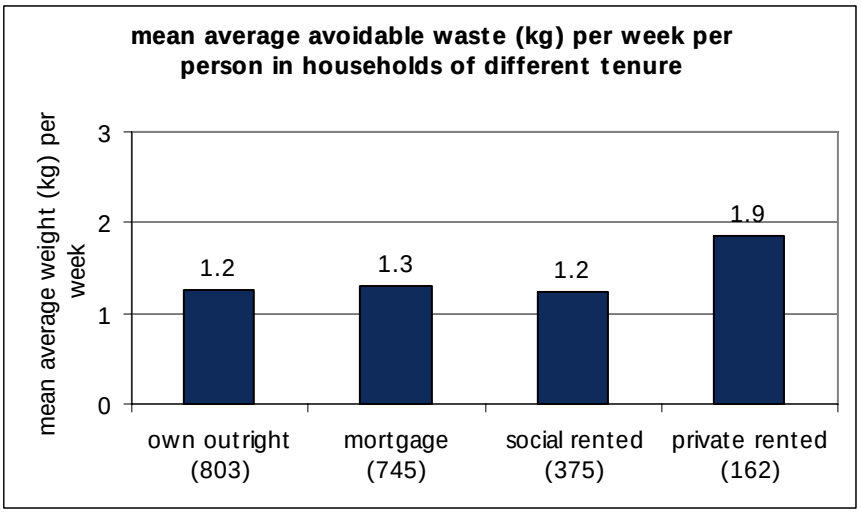
and the chart shows that these households are the most likely to be made up of younger people, with nearly half (48.2%) of households that rent their home privately made up of respondents aged under 35 years.

Figure 182 shows that seven in 10 of the householders that own their property outright are single or dual-occupancy. This compares with less than half of the socially rented properties, four in 10 of those that are rented privately and three in 10 mortgaged properties.

This suggests that age and number of occupants are more important factors in relation to food waste than tenure.

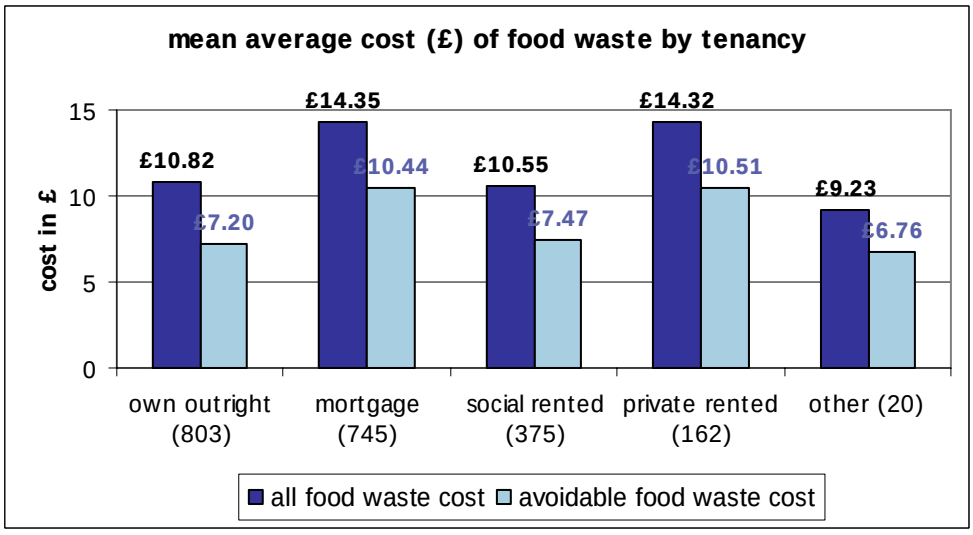
A per capita analysis shows a similar picture in which individuals living in households that are privately rented produce the most avoidable waste at 1.9kg a week (100kg a year). There is no significant difference between the other types of households.

Figure 183 The amount (kg) of avoidable waste produced per capita by tenure



8.6.2 *The cost of food waste thrown away (all methods of disposal)*

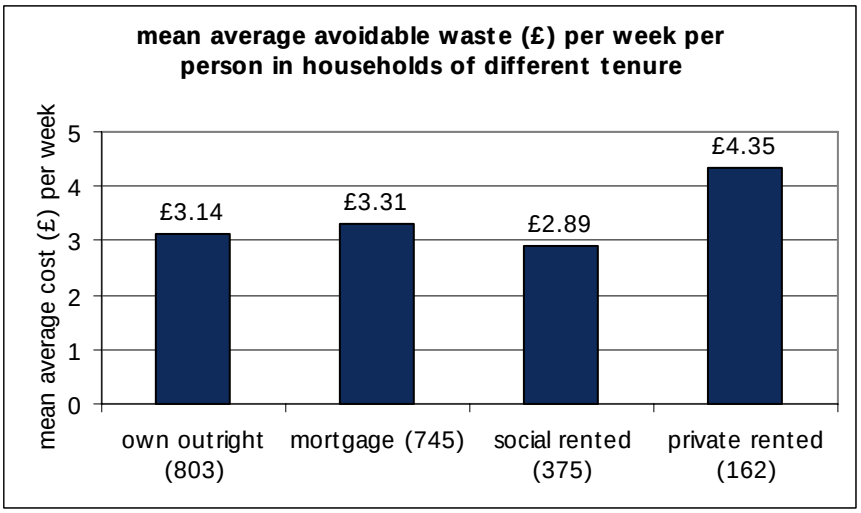
Figure 184 The cost (£ per household per week) of food waste produced by households of different tenures



The above chart illustrates that, on average, householders that are buying their home with the aid of a mortgage or other loan and those that rent their home on a private basis waste the most in financial terms. These households throw away more than £14 of food a week (£750 a year) of which more than £10 (73%) a week (around £540 a year) is avoidable.

Householders in socially rented accommodation waste the least in financial terms. The average households in council or other social rented property throw away nearly £11 of food of which more than £7 (70.8%) could be avoided.

Figure 185 The amount (£) of avoidable waste produced per capita by tenure



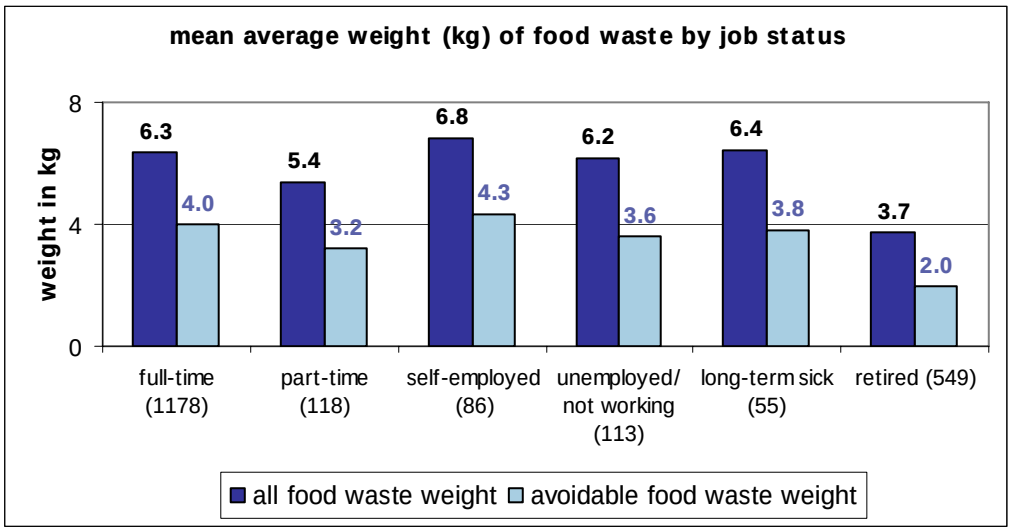
The above chart shows that, on a per capita basis, individuals living within privately rented accommodation each waste more than £4 per week (£220 per year) of avoidable food compared to less than £3 a week (£150 a year) by each individual residing in a property that is rented from the council or other social organisation.

8.7 Do full-time workers waste more than part-timers or the unemployed?

It could be hypothesised that householders with low disposable incomes, such as those in which the main earner is dependent upon the state, may waste less food as they are on strict budgets. This section assesses the evidence.

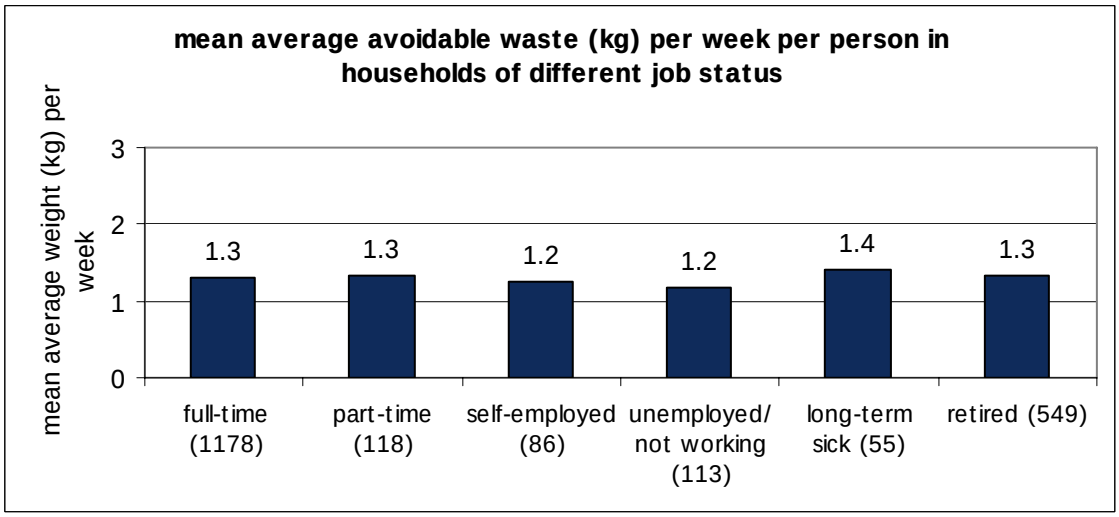
8.7.1 The weight of food waste thrown away (all methods of disposal)

Figure 186 The weight (kg per household per week) of food waste produced by households of different job status of main earner



The above chart illustrates that, on average, households in which the chief earner is in self-employed work waste the most; the average household where the head is self-employed throws away 6.8kg of food a week (£360kg a year) of which 4.3kg (63.2%) a week (220kg a year) is avoidable. Households in which the main earner is retired from work waste the least; the average household where the main earner is retired throws away 3.7kg of food a week (190kg a year) of which 2kg (53%) a week (100kg a year) could be avoided. This is as expected as a link between age (most retired people are older) and the amount of food waste has been identified at a household level. However, previous sections have shown this is different when looking at amounts per capita. In this case too the per capita analysis shows that retired people produce much the same amounts of avoidable waste as working and non-working households.

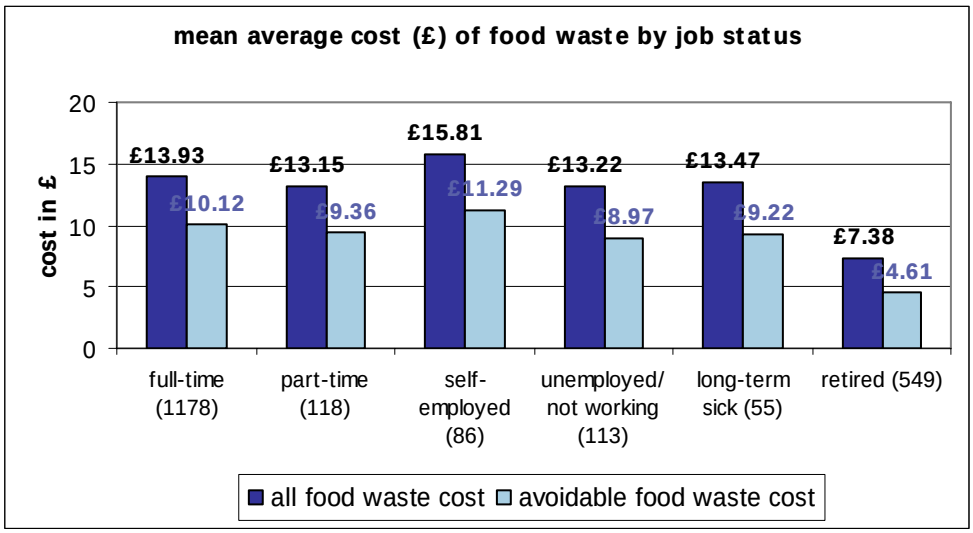
Figure 187 The amount (kg) of avoidable waste produced per person in households of different job status



On a per capita basis the chart above shows that it is households in which the main earner is long-term sick that waste the most at 1.4kg per week each (72.8kg a year).

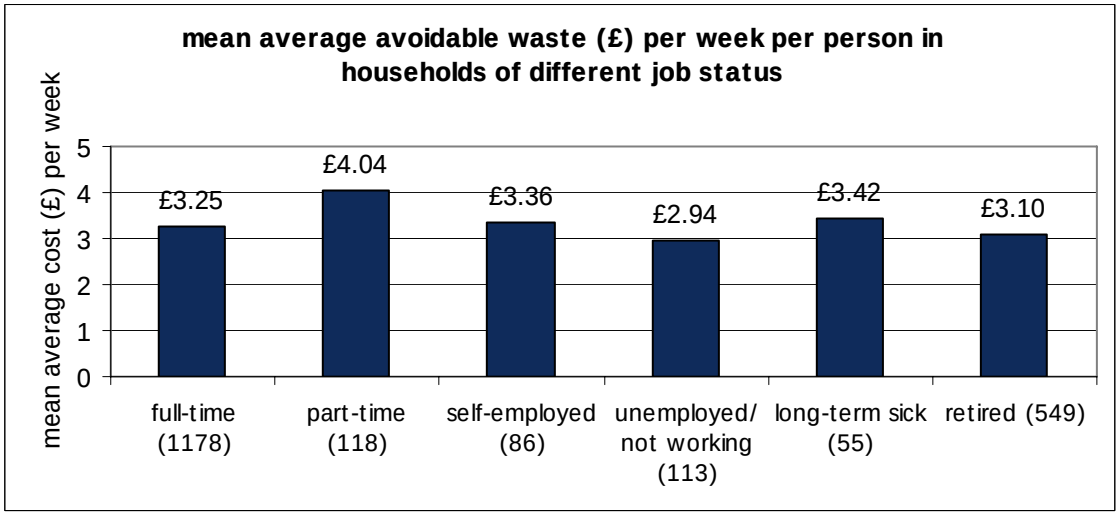
8.7.2 *The cost of food waste thrown away (all methods of disposal)*

Figure 188 The cost (£ per household per week) of food waste produced by households of different job status of main earner



The above chart illustrates that, on average, households where the main earner is self-employed waste the most in financial terms. The average household in which the head is self-employed throws away nearly £16 of food a week (£820 a year) of which more than £11 (71.4%) a week (£590 a year) is avoidable. Households in which the head is retired from work waste the least in financial terms. The average household in which the main earner is retired throws away more than £7 of food a week (£384 a year) of which nearly £5 (62.3%) a week (£240 a year) could be avoided.

Figure 189 The amount (£) of avoidable waste produced per person in households of different job status



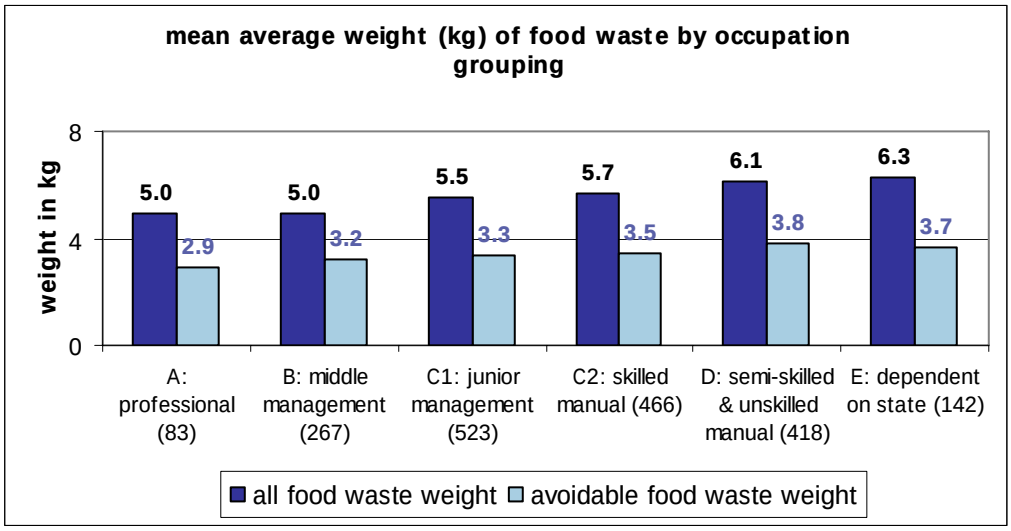
On a per capita basis the chart above shows that it is households in which the main earner is in part-time work that waste the most at more than £4 per week (£210 a year).

8.8 Do households where the main earner is in a professional or middle-managerial occupation waste more food than households where the main earner has a manual job or no job at all?

This section explores the proposition that more-affluent households produce more waste. Although the occupational classification (A, B, C1, C2, D and E) does not correspond directly to household income (there are many wealthy plumbers, for example, that would be classified as C2) it does provide an indication. The occupational classification used is the one devised by the Market Research Society (MRS)[29]. Retired people have been classified according to the head of household's job on retirement.

8.8.1 The weight of food waste thrown away (all methods of disposal)

Figure 190 The weight (kg) of food waste produced by households of different occupational groupings per household per week



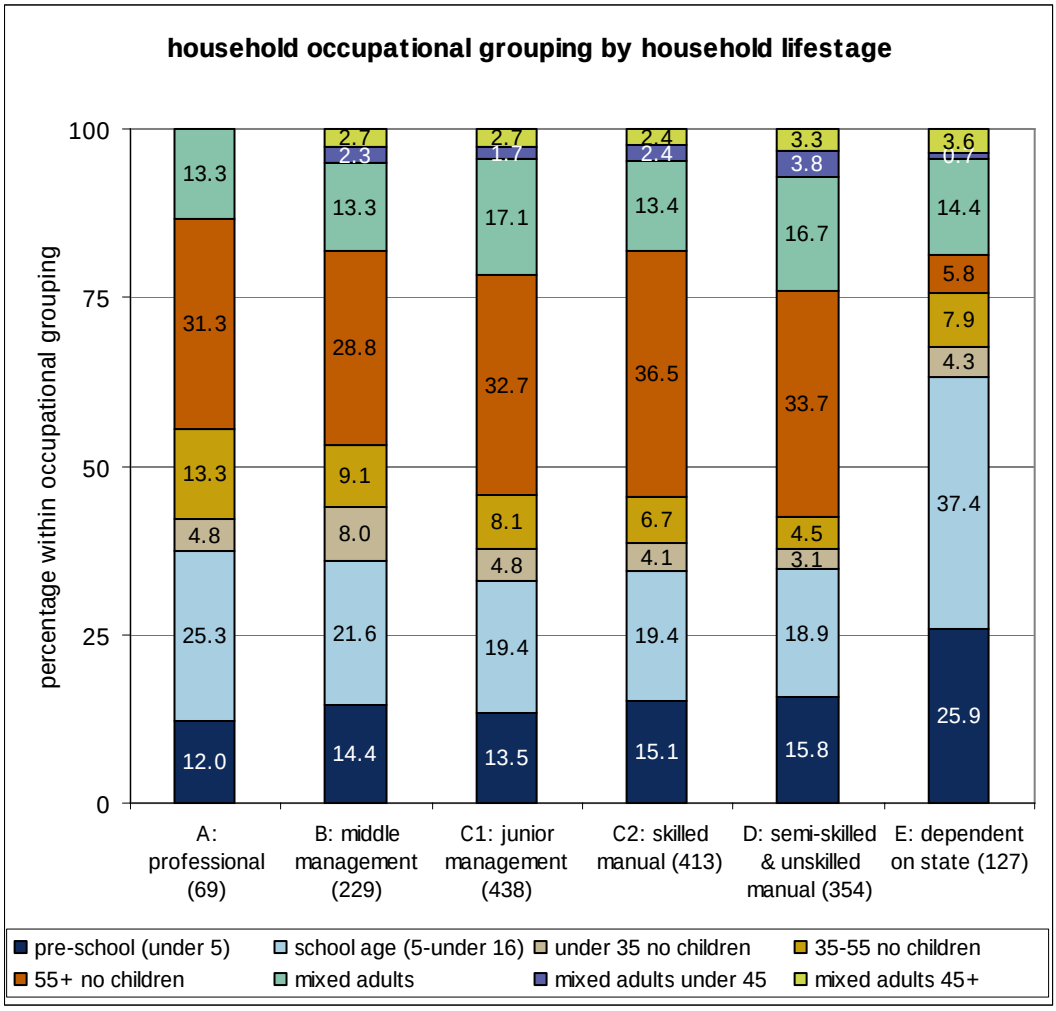
The above chart illustrates that there is a relationship between the amount of food thrown away and the occupational grouping of the head of household. Households in which the head is dependent upon the state waste the most; the average household that is dependent upon the state throws away 6.3kg of food a week (330kg a year) of which 3.7kg (58.7%) a week (190kg a year) could be avoided.

On average, households in which the chief earner is classified as working in a professional or higher-managerial capacity waste the least. The average household where the head is in a professional occupation throws away 5kg of food a week (260kg a year) of which 2.9kg (58.9%) a week (150kg a year) is avoidable. Households where the main earner is in a middle-management occupation also throw away 5kg of food a week (260kg a year), but 3.2kg (64%) a week (170kg a year) is avoidable waste.

It is possible that there is a link between occupational status of the head of household and the lifestage of the family, with people progressing through a career from the lower to the higher social grades. The chart below illustrates the household's occupational grouping according to their lifestage.

[29] *MRS occupation groupings, 5th Edition.*

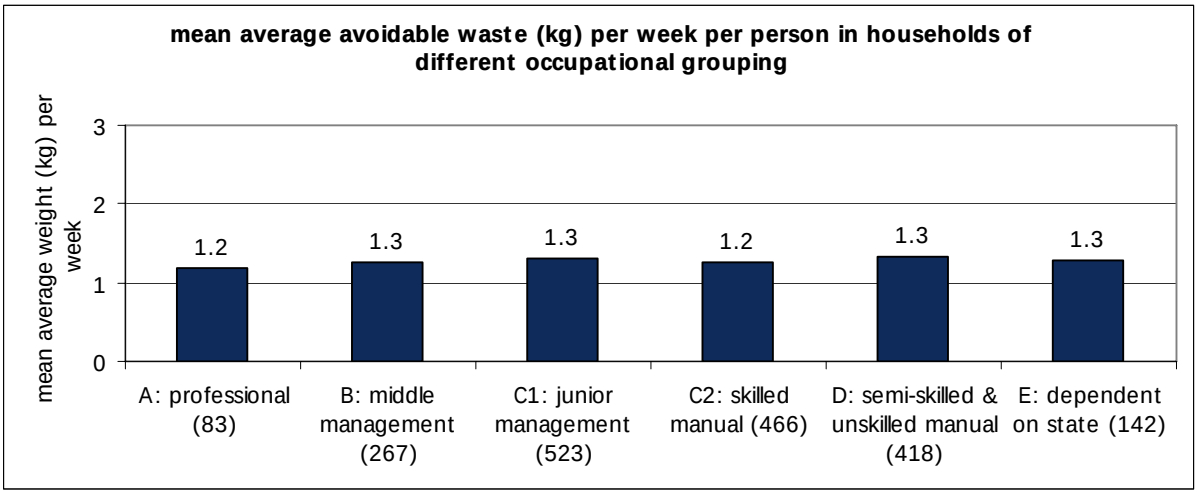
Figure 191 Household's occupational group by household lifestage



The above chart shows that households that are dependent on the state are the most likely of all the groups to have children under 16 years of age. Section 8.4 has shown that households with children are more likely to be larger, so it is possible that this is underlying the greater amounts of food waste produced. More than six in 10 (63.3%) households that are dependent on the state are made up of families with children under 16 years of age.

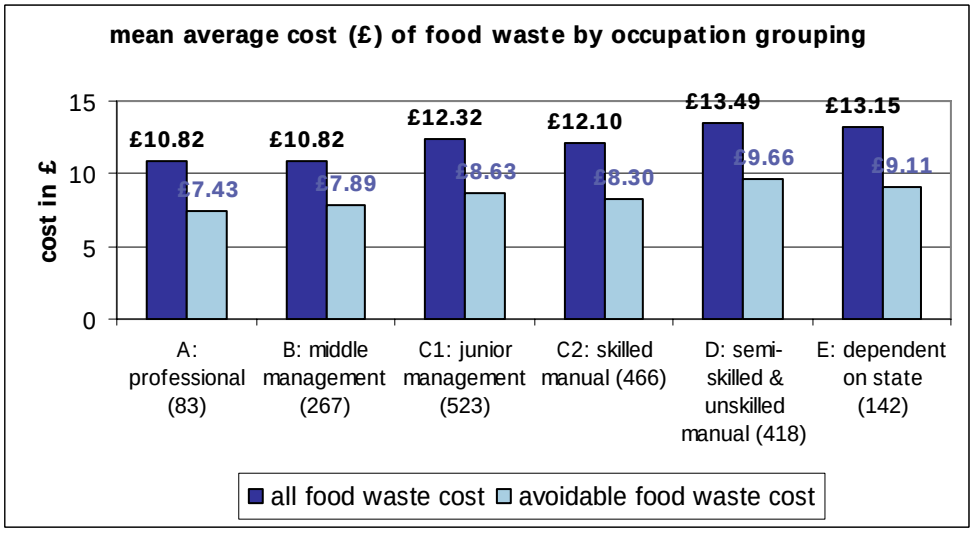
A per capita analysis supports this, suggesting that there is little difference between different households in terms of the avoidable food waste produced per person, as the chart below shows.

Figure 192 The amount of avoidable waste produced per person per week in households of different occupational groupings



8.8.2 The cost of food waste thrown away (all methods of disposal)

Figure 193 The cost (£ per household per week) of food waste produced by households by different occupational groupings

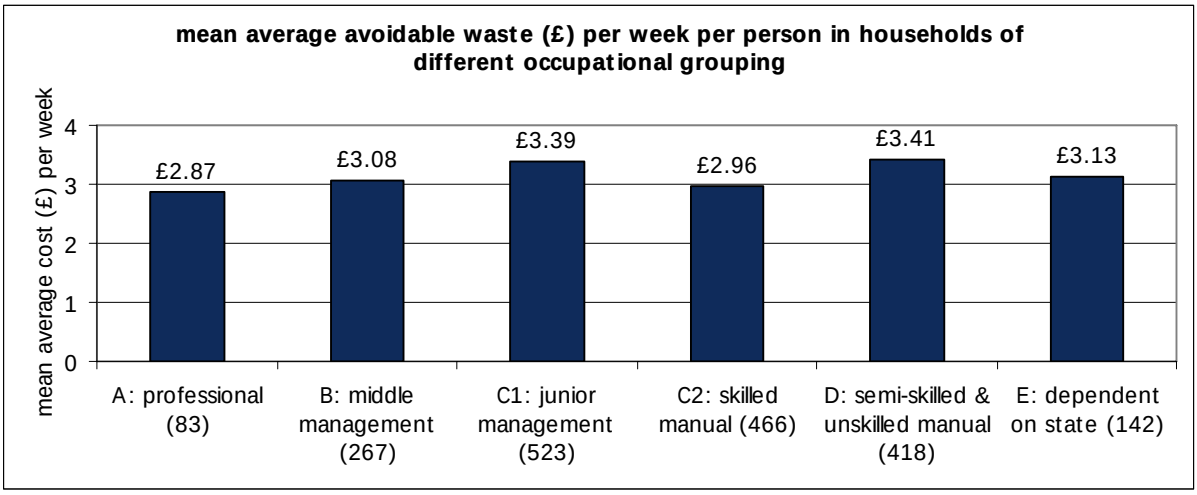


The above chart illustrates that, on average, households where the main earner is in a semi-skilled or unskilled manual occupation waste the most in financial terms; these households throw away more than £13 of food a week (£700 a year) of which nearly £10 (71.6%) a week (£500 a year) is avoidable.

Households in which the head is in a professional or middle-managerial occupation waste the least in financial terms. The average household in which the main earner is a professional throws away nearly £11 of food a week (£560 a year) of which more than £7 (68.7%) a week (£390 a year) could be avoided. The average household where the main earner is in a middle-management position also throws away nearly £11 worth of food a week (£560 a year), but nearly £8 (72.9%) a week (£410 a year) could be avoided.

Again the picture is slightly different when looked at on a per capita basis.

Figure 194 The amount (£) of avoidable waste produced per person per week in households of different occupational groupings



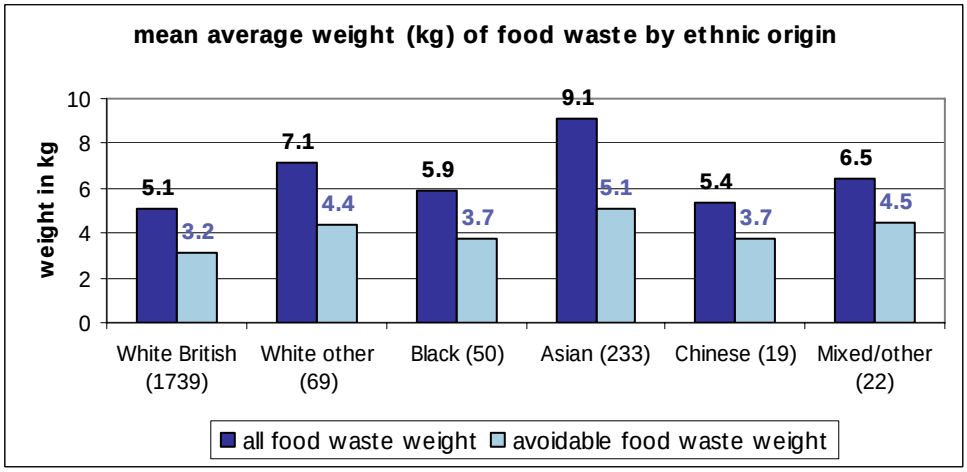
The above chart illustrates that, on a per capita basis, there is not a great deal of difference between the different types of household, but individuals living in households in which the main earner is in semi-skilled or unskilled employment throw away marginally more avoidable food waste. Each of these individuals throws away more than £3 of food per week (£180 a year).

8.9 Do households of certain ethnic origins waste more food than others?

Previous research has suggested that Asian households produce more waste generally, and specifically more food waste, than White households[30], although less food waste per capita. This section examines the evidence.

8.9.1 The weight of food waste thrown away (all methods of disposal)

Figure 195 The weight (kg per household per week) of food waste produced by households of different ethnic origins



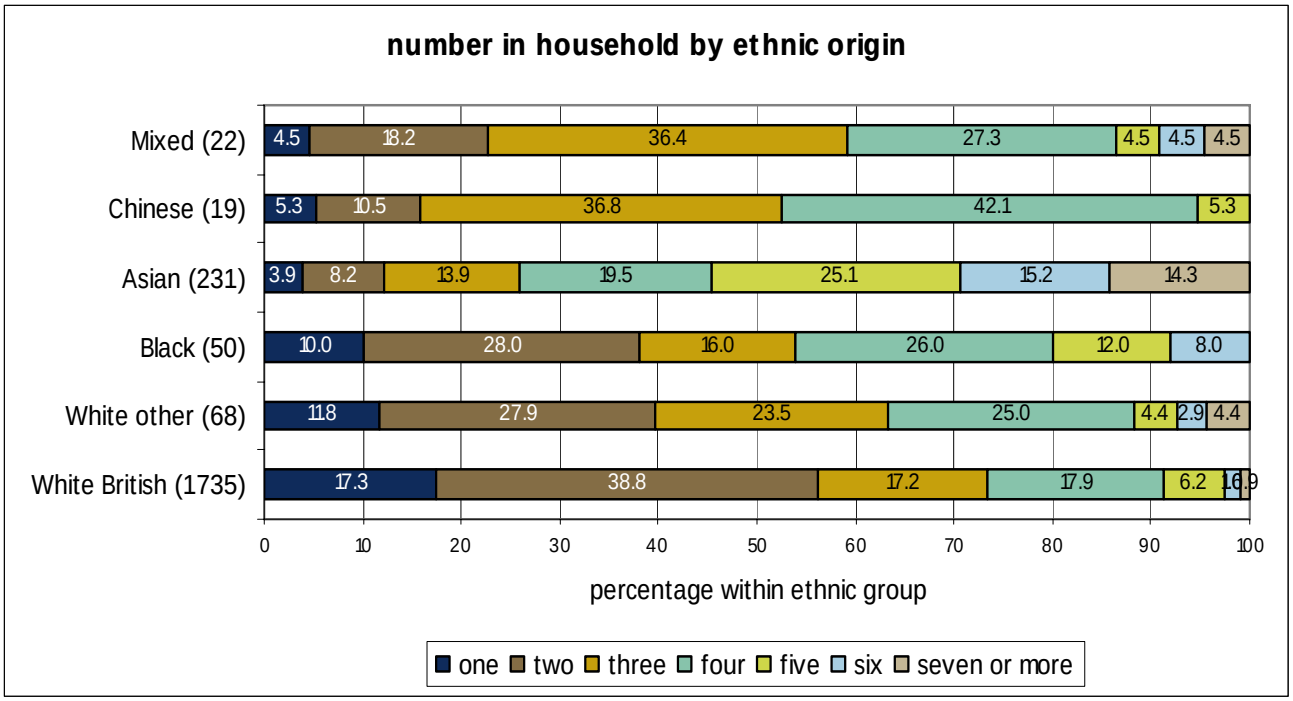
[30] *An indicative study with small sample sizes carried out in Bradford in 2002 found that Asian households produced just over 18kg of waste per household per week compared with just over 14kg per household per week for White households and that Asian households threw away 5kg of food waste compared with 3kg for White households. The study also found that on a per capita basis White households produced more than Asian households. Luckin, D. 2003. Ethnicity, waste generation and waste related behaviour (draft unpublished report to the Bradford Environmental Action Trust).*

The chart illustrates that, on average, households in which the main shopper is of Asian origin waste the most. The average Asian household throws away 9.1kg of food a week (475.4kg a year) of which 5.1kg (55.9%) a week (265.8kg a year) is avoidable. It has been argued that more of the waste coming from Asian households is unavoidable (peelings and the like) because more cooking tends to be done from scratch. The chart shows this is true but also highlights the higher quantities of avoidable waste.

Households in which the main shopper is White British waste the least; these households throw away 5.1kg of food a week (270kg a year) of which 3.2kg (61.9%) a week (160kg a year) could be avoided.

Previous research[30] has indicated that it is the larger household size common in Asian households that influences food waste rather than factors such as different cooking traditions or greater wastefulness. The chart below shows that Asian households do indeed tend to have larger households.

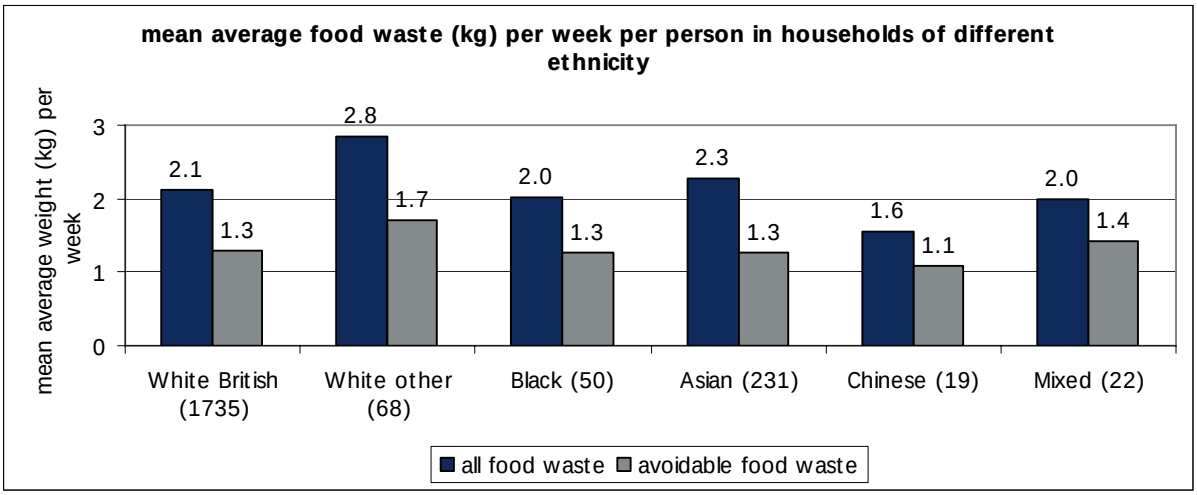
Figure 196 The number of occupants in a household by ethnic origin of the head of household



The previous chart shows that more than half (54.6%) of the Asian families participating in the research consisted of five or more occupants. This compares with less than one in ten (8.8%) White British households. The proportion of five-plus-occupancy households is significantly greater for Asian families than any other ethnic group. By contrast White British households are much more likely to be single-occupancy than any other group and particularly Asian households; 17% of White British households are single-occupancy compared with just 4% of Asian households.

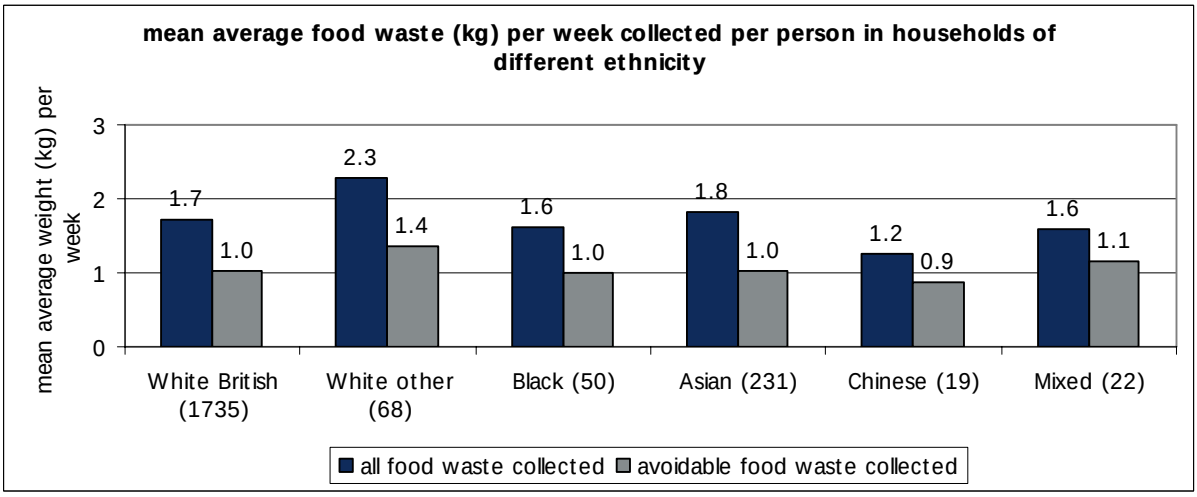
These differences between household size mean that an analysis per capita shows a very different picture. It also shows that all households regardless of ethnic origin waste significant amounts of avoidable food.

Figure 197 The average weight (kg per household per week) of food waste per week per person by ethnic origin of the head of household



The above chart illustrates that, on a per capita basis, individuals within Asian households each waste 2.3kg of food a week (119.6kg a year). This compares with individuals within White British households that waste 2.1kg a week (109.2kg a year). With respect to avoidable food waste, White British, Black and Asian households produce exactly the same amounts of avoidable food waste, suggesting that food waste is a problem that is unrelated to ethnicity per se. In fact it is the White non-British households[31] that produce the most avoidable food waste at 1.7kg per week (88.3kg a year) but even this is not significantly different to other ethnic origins.

Figure 198 The average weight (kg per household per week) of food waste put out for council collection per week per person by ethnic origin of the head of household



The above chart illustrates the amount of food waste put out for council collection on a per capita basis. With respect to avoidable food waste, White British, Black and Asian households put out the same amounts of waste at 1kg per week (53kg a year). This may be due to the fact that Asian households tend to compost at home less than White British households; research conducted by WRAP in December 2005 on more than 20,000 households

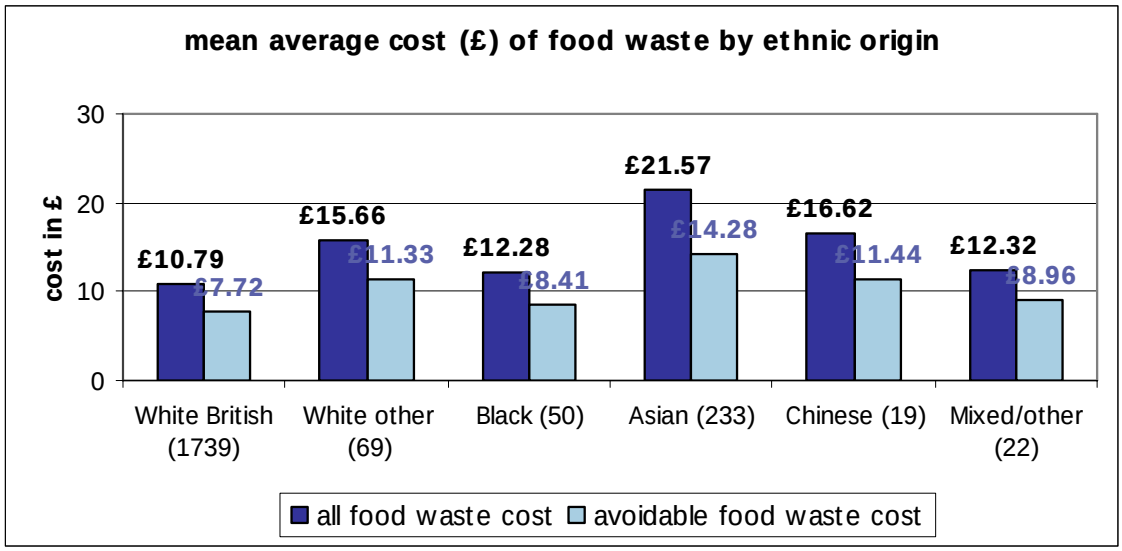
[31] *Where information was provided, White non-British households tended to be of European backgrounds (e.g. Polish).*

showed that while 24.5% of White British households compost at home, less than 15% of Asian households do so.[32]

This analysis highlights the fact that it would be misguided to highlight Asian households as producing more food waste than their counterparts from other ethnic backgrounds. However, the analysis is helpful for local authorities as they need to be aware that Asian households are likely to require larger receptacles for separate food waste collections, for example.

8.9.2 The cost of food waste thrown away (all methods of disposal)

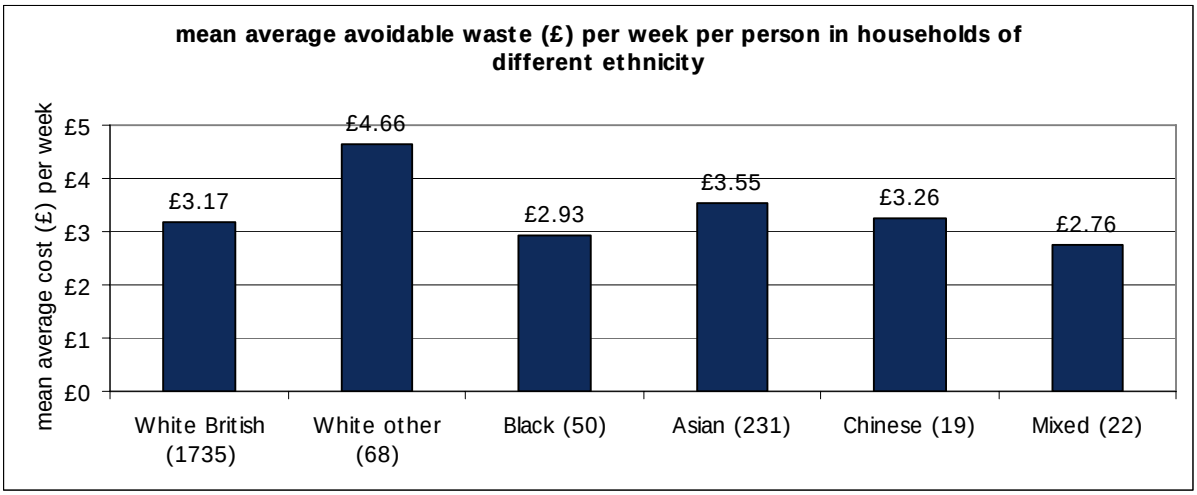
Figure 199 The cost (£ per household per week) of food waste produced by households by ethnic origin



The above chart illustrates that, on average, Asian households waste the most in financial terms. The average Asian household throws away nearly £22 of food a week (£1120 a year) of which more than £14 (66.2%) a week (£740 a year) is avoidable. A review of the types of food thrown away showed that these households have a higher-than-average propensity to throw away herbs and spices, which have a high theoretical financial cost, although there is some evidence that some of these may in fact have been home-grown. White British households waste the least amount of money on food waste each week. The average White British household threw away nearly £11 of food a week (£560 a year) of which nearly £8 (71.5%) a week (£400 a year) could be avoided.

[32] *Overview of home composting trends 2004 to 2007. Report to be published by WRAP, summer 2008.*

Figure 200 The amount (£) of avoidable waste produced per person per week in households of different ethnicity



The above chart illustrates that, on a per capita basis, individuals living in White non-British households throw away the most avoidable food waste. Each of these individuals throws away more than £4 of food per week (£240 a year).

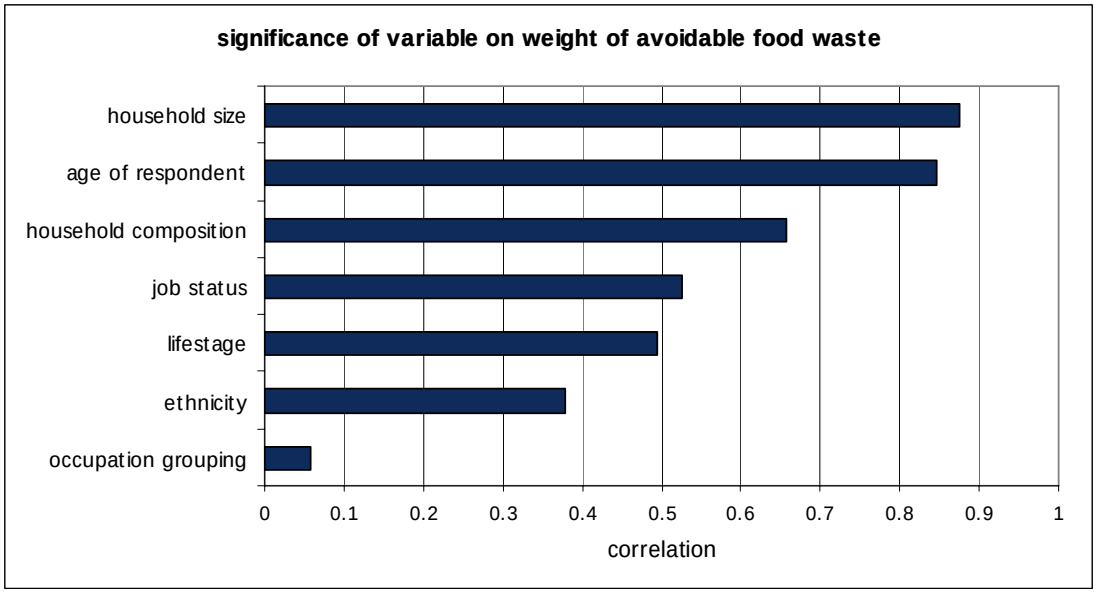
8.10 Which factors are most important in influencing food waste?

So far this chapter has separately examined the key factors thought to influence food waste, examining inter-relations between the factors as appropriate. This has suggested that although there are household-level differences between households within all of the factors, and in some cases per capita level differences too, underlying all of these is the size of the household. When you control for this through a simple per capita analysis, the factors that seem to show differences at a household level such as ethnic origin and age are no longer important.

To investigate further, a test was carried out to measure the degree of statistical association between the avoidable food waste produced and the key factors measured in this research, such as age of the head of household and the number of people in the household. Data which is available on the households' job occupation, ethnicity composition and so on are categorical variables[33] and therefore to measure the existence and strength of association with the amount of food waste produced a technique known as stepwise multivariate discriminative analysis was used. One of the problems with these variables is that they are intrinsic to the respondents and the effect of one (e.g. age) on food waste production may be confounded by other unmeasured but related variables that will impact food waste production (e.g. health). With stepwise discrimination analysis, variables should be independent from each other, and as already seen there appear to be relationships between the demographics. So, for example, the age of the respondent is linked to lifestage while the number of occupants is linked to household composition. A number of analyses were conducted using different variables that did not appear to have a high interrelationship in order to obtain an overview of statistical association. This means that the combined results of the discrimination analyses should be treated as indicative rather than statistically valid.

[33] *Categorical variables are those that come in categories (e.g. social grade, tenure) as opposed to linear variables (e.g. height, weight) which are absolute numbers. Different statistical tests are appropriate for different types of variable.*

Figure 201 Strength of relationship of different variables to the amount of avoidable household food waste generated



The above chart illustrates the strength of association derived from the multivariate analyses. It identifies the number of occupants in the household as having the strongest correlation[34] with household avoidable food waste production followed by the age of the main shopper in the household (which has a negative impact so that as age increases household food waste decreases). Tenure was rejected by the analysis as having a significant impact on avoidable household food waste. Note that this analysis was carried out at a household rather than a per capita level.

8.11 Summary of chapter

There are some significant differences between the amounts and cost of food wasted amongst different types of household. Key differences in terms of avoidable food waste are summarised below.

- Larger households waste the most while single-occupancy households waste the least. However, on a per capita basis, it is single occupants that waste the most and the majority of these are of retirement age. Although there is a hypothesis that the war generation will be less wasteful, this seems to be the case only where households consist of two or more adults.

- Although larger households waste more, they do not do so proportionally (a household of two does not waste double the amount of a single-person household, for example).

- Households where the food shopper is younger waste the most while households where the main shopper is older waste the least; this is most pronounced in the 16 to 24 age group at the one extreme and the 65-plus age group at the other. However, on a per capita basis, individuals in households where the person with responsibility for food shopping is aged 55 to 64 waste the most avoidable food.

- Multiple-occupancy households where the head of household is retired waste less than households where the head of household is either in employment or is unemployed/sick.

[34] *A correlation of ± 1 indicates the strongest relationship between two variables.*

- Households where the head of household is dependent on the state waste the most while households where the head of household is professional waste the least. However, it is apparent that this finding arises because the households with a lower disposable income have a greater likelihood of comprising of families with children under 16 years.

- Asian households waste the most while White British households waste the least, but analysis suggests this is due to larger household sizes rather than anything related to ethnic background per se. Indeed on a per capita basis, individuals in multiple-occupancy Asian households contribute the same amount of waste as individuals within similar White British households. Individuals living in White non-British households waste the most on a per capita basis.

9 Links between food waste and other waste-related attitudes and behaviour

9.1 Introduction

This chapter takes information on the average financial cost and weight of the uneaten food items that are produced at a household level and presents it according to other waste-related attitudes and behaviour. This analysis illustrates where statistical associations may exist but does not prove that any type of attitude or behaviour has a causal relationship with the amount of food waste generated at a household level. For example, householders that recycle a lot of their household waste may place less food waste in their bin for collection by the council, but this may be due to other factors such as only buying the amount of food that they know will be consumed, or it may be that they only prepare and serve the amount of food that will be eaten.

An analysis of the average weight and cost of **all food waste** and the weight and cost of **avoidable food waste** is provided. Avoidable food 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. Unless otherwise indicated, the data presented in this chapter represents an estimate of the food waste that is thrown away via all methods of disposal using the model described in Chapter 1 (see Section 1.4) where nine tenths of food waste is thrown away via the household's residual bin and/or in the council's separate food waste container. It should be noted that because the weights have been converted from grammes to kilogrammes and rounded and annual costs have been rounded to the nearest £10, rounding anomalies may occur.

The attitudes and behaviours covered in this chapter include:

- extent to which households compost at home (Section 9.2);
- attitude to recycling (Section 9.3);
- amount of self-declared effort put into recycling (Section 9.4);
- self-declared extent of recycling (Section 9.5);
- degree of commitment to recycling (Section 9.6); and

The chapter also compares householders' perceptions of the amounts of food wasted with the amount actually wasted as measured through this study. The influence of socio-demographics such as age and housing type on food waste production has already been covered in Chapter 8.

9.2 To what extent does food waste collected by councils differ according to home composting behaviour?

9.2.1 The weight of food waste thrown away (council collections only)

Figure 202 below illustrates that, on average, households that have never composted at home throw away the most food waste in their residual or separate food container for collection by the council each week. The average household that has never composted household waste throws away 5.4kg of food each week (280.1kg a year) of which 3.3kg (61.1%) a week (171.6kg a year) is avoidable. Households that used to compost but no longer do so throw away the least amount of food by weight each week. The average 'lapsed' composting household throws away 3.8kg of food a week (197.6kg a year) of which 2.1kg (55.8%) a week (109.2kg a year) could be avoided.

Previous research shows that a significant number of households that stop home composting tend to do so due to failing health or old age and it has been seen in Chapter 8 that elderly households tend to throw away less food waste.

Figure 202 The weight (kg) per household per week of collected food waste by households of different home composting behaviour

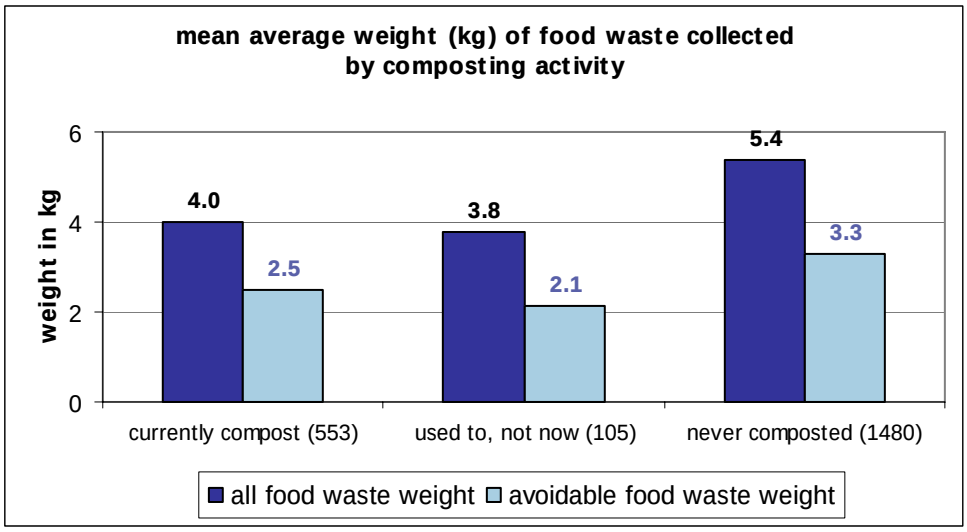
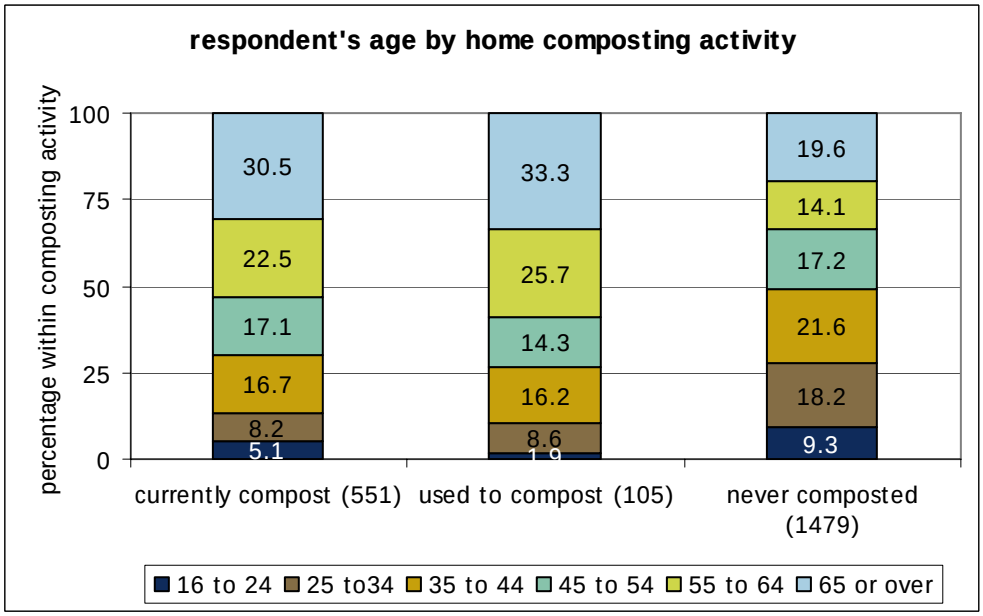


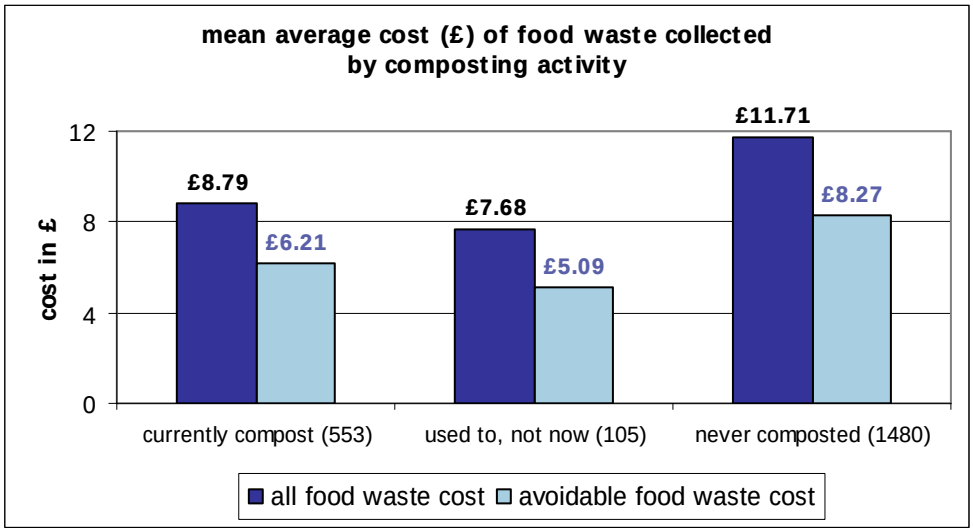
Figure 203 illustrates that respondents who used to but no longer compost waste at home have a slightly older age profile than respondents that currently compost; nearly six in 10 (59%) of the lapsed composters are at least 55 years of age compared to just over half (53%) of the current composters. Respondents that have never composted are much younger with only a third (33.7%) being aged 55 years or over.

Figure 203 Household's home composting activities by age of respondent



9.2.2 The cost of food waste thrown away (council collections only)

Figure 204 The cost (£) per household per week of collected food waste produced by households of different home composting behaviour



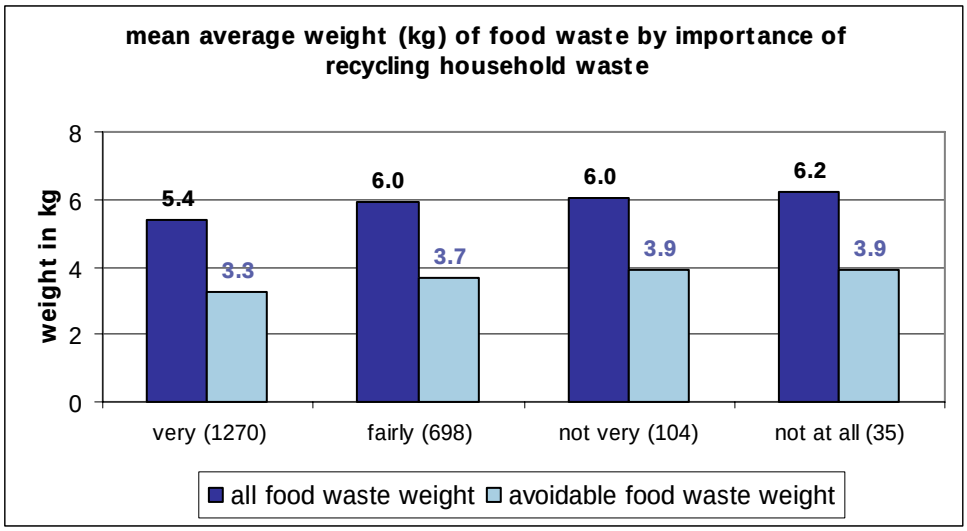
The above chart illustrates that, on average, households that have never composted waste at home throw away the greatest amount of uneaten food in their residual or food waste bin in terms of financial cost in a week. The average household that has never composted throws away nearly £12 of food a week (£610 a year) of which more than £8 (70.6%) a week (£430 a year) is avoidable. Households that used to compost at home throw away the least amount of food by cost each week. The average household that has stopped home composting throws away nearly £8 of food a week (£400 a year) of which just over £5 (66.2%) a week (£260 a year) could be avoided.

9.3 To what extent does the amount of food waste produced differ according to attitudes to recycling?

9.3.1 The weight of food waste thrown away (all methods of disposal)

Although the differences between households are relatively small, Figure 205 below illustrates that households that feel recycling is not at all important throw away the greatest amount of food by weight each week; on average, these households throw away 6.2kg of food a week (320kg a year) of which 3.9kg (63%) a week (200kg a year) could be avoided.

Figure 205 The weight (kg) per household per week of food waste produced by households which ascribe different levels of importance to recycling

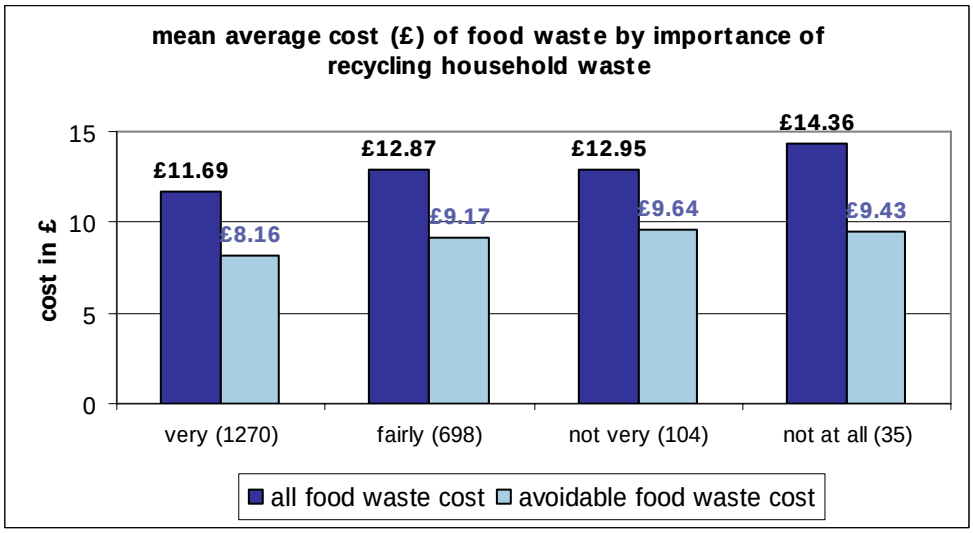


On average, households for which recycling is a very important activity throw away the least amount of uneaten food in a week; the average household for which recycling is very important throws away 5.4kg of food a week (280kg a year) of which 3.3kg (60.3%) a week (170kg a year) is avoidable.

This suggests that there is a relationship between attitudes to recycling and propensity to waste food, although we can not say that one **causes** the other; indeed, there may be other socio-demographic factors at work, for example, that play a causal role in both.

9.3.2 The cost of food waste thrown away (all methods of disposal)

Figure 206 The cost (£) per week of food waste produced by households which ascribe different levels of importance to recycling



The above chart illustrates that, on average, households for which recycling is not at all important throw away more than £14 of food a week (£750 a year) of which more than £9 (65.7%) a week (£490 a year) is avoidable. This compares with households that indicated that recycling waste is very important, which throw away nearly

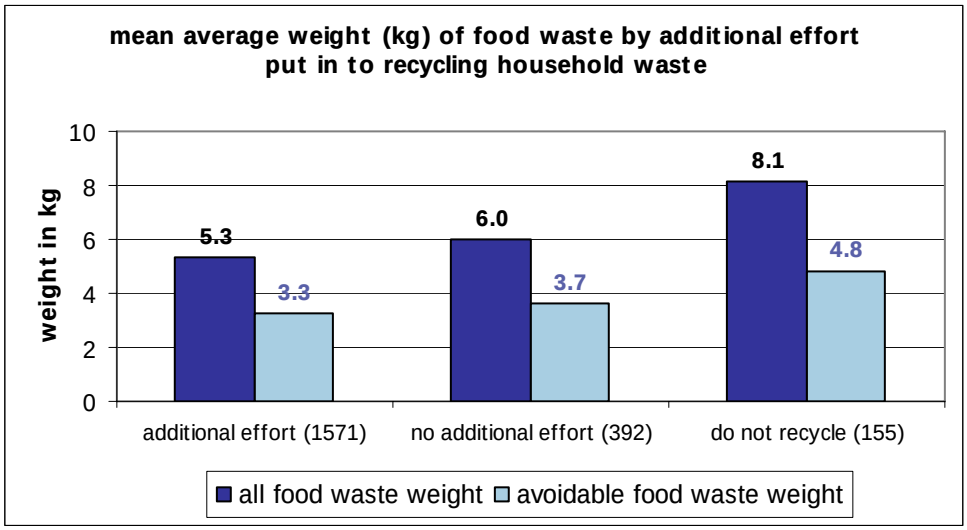
£12 of food a week (£610 a year) of which just over £8 (69.8%) a week (£420 a year) could be avoided.

9.4 To what extent is the amount of food waste produced influenced by the amount of effort put into recycling?

9.4.1 The weight of food waste thrown away (all methods of disposal)

Figure 207 illustrates that those households that do not recycle throw away the greatest amount of uneaten food in a week; the average household that does not recycle throws away 8.1kg of food a week (420kg a year) of which 4.8kg (59%) a week (250kg a year) is avoidable.

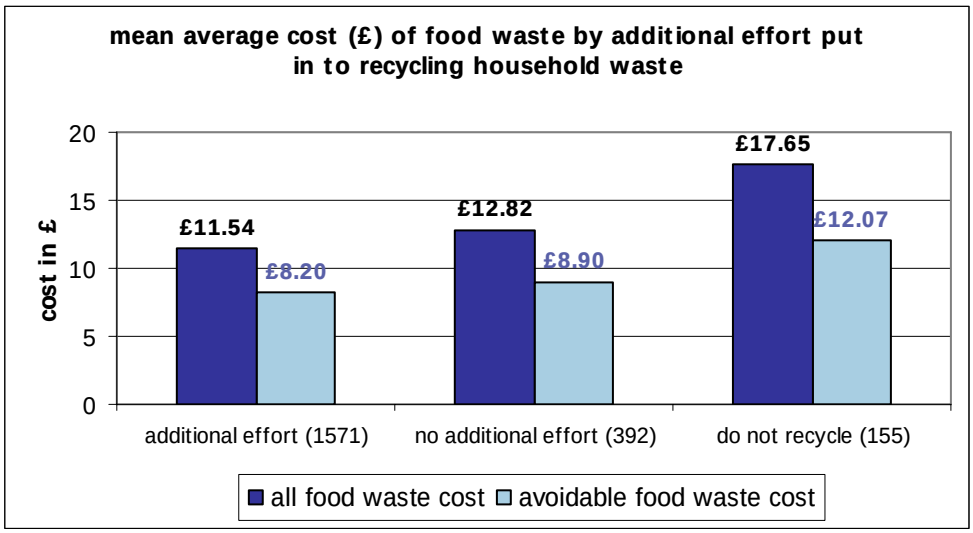
Figure 207 The weight (kg) per week of food waste produced by households with different levels of effort put into recycling



By contrast, households that put in additional effort to recycle throw away the least amount of food by weight each week; on average these households throw away 5.3kg of food a week (280kg a year) of which 3.2kg (61.3%) a week (170kg a year) could be avoided.

9.4.2 The cost of food waste thrown away (all methods of disposal)

Figure 208 The cost (£) per week of food waste produced by households with different levels of effort put into recycling



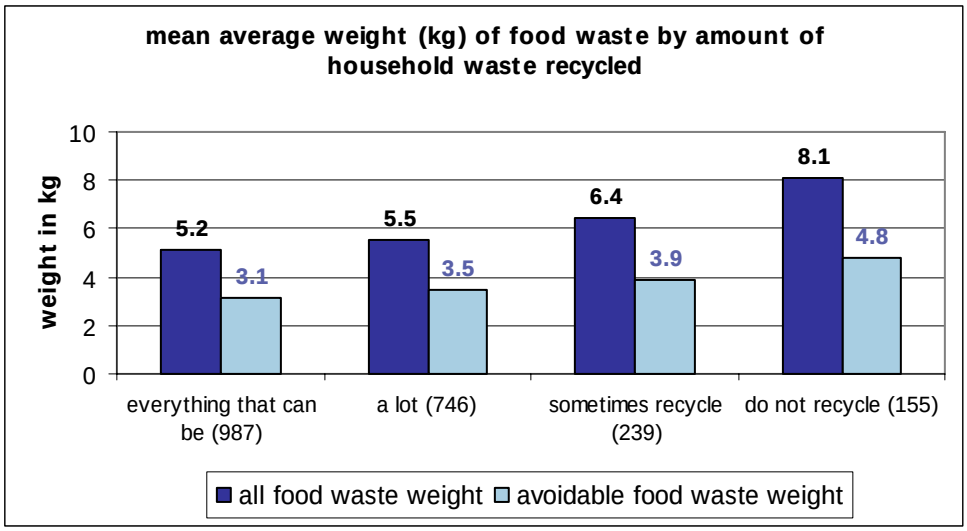
The above chart illustrates that, on average, households that do not recycle throw away nearly £18 of food a week (£920 a year) of which £12 (68.4%) a week (£630 a year) is avoidable. This compares with households that put in additional effort to recycle household waste, which throw away just over £11 of food a week (£600 a year) of which just over £8 (71.1%) a week (£430 a year) could be avoided.

9.5 To what extent does the amount of food waste produced vary according to claimed amounts of waste recycled?

9.5.1 The weight of food waste thrown away (all methods of disposal)

Figure 209 below illustrates that there is a relationship between the amount of household waste that is recycled and the amount of food waste generated. As shown above, on average households which do not recycle throw away the greatest amount of uneaten food in a week; the average household that does not recycle household waste throws away 8.1kg of food a week (420kg a year) of which 4.8kg (59%) a week (250kg a year) is avoidable.

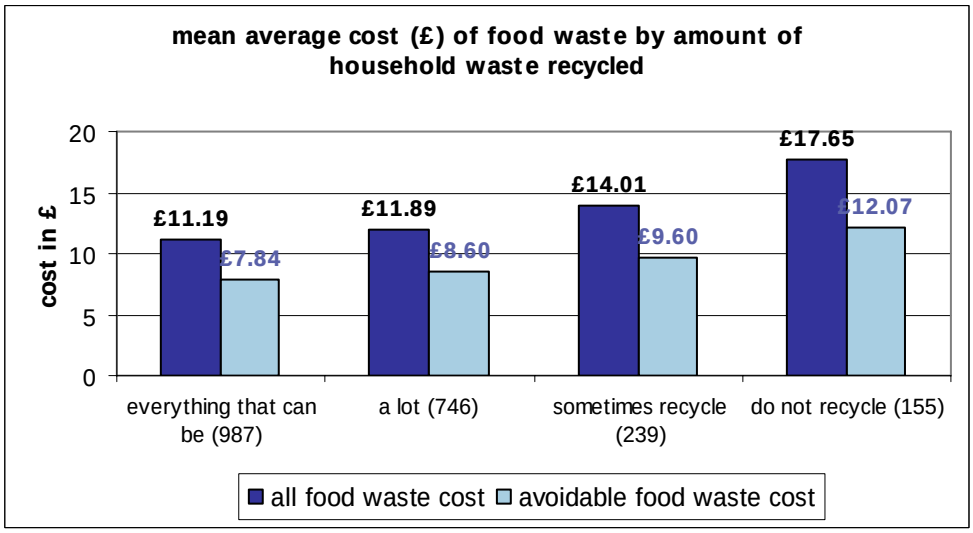
Figure 209 The weight (kg) per week of food waste produced by households recycling different amounts of household waste



Households that claim to recycle all recyclable waste throw away the least amount of food by weight each week; on average, these households throw away 5.2kg of food a week (270kg a year) of which 3.1kg (60.2%) a week (160kg a year) could be avoided.

9.5.2 The cost of food waste thrown away (all methods of disposal)

Figure 210 The cost (£) per week of food waste produced by households recycling different amounts of household waste



The above chart illustrates that, on average, households that do not recycle throw away nearly £18 of food a week (£920 a year) of which £12 (68.4%) a week (£630 a year) is avoidable. This compares with households that recycle all household waste that can be recycled, which throw away just over £11 of food a week (£580 a year) of which nearly £8 (70.1%) a week (£410 a year) could be avoided.

9.6 To what extent does the amount of food waste produced differ according to how committed households are to recycling?

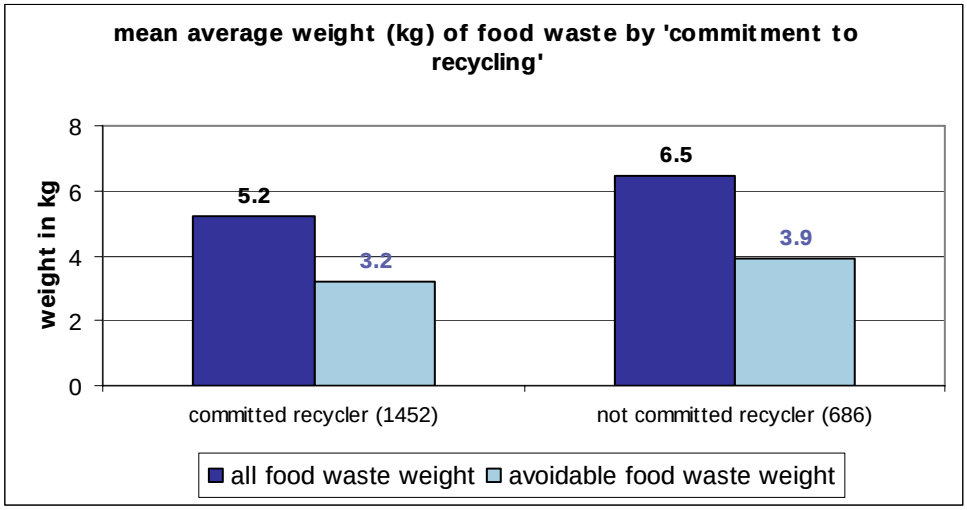
WRAP has developed a set of three questions regarding perceived importance, behaviour and attitude to recycling household waste and a pre-determined combination of responses provides an indication of whether a respondent is classified as a 'committed recycler'. The model developed to measure the proportion of the population that can be classified as 'committed recyclers' is made up of responses to the three questions as follows:

- they regard recycling household waste as 'very' or 'fairly' important;
- they say they recycle 'everything' or 'a lot' of the household waste; and
- they say they put additional effort into recycling household waste.

The following analysis shows the average weight and cost of food waste for households that responded in different ways to the three metric questions regarding attitudes and behaviour to recycling household waste.

9.6.1 The weight of food waste thrown away (all methods of disposal)

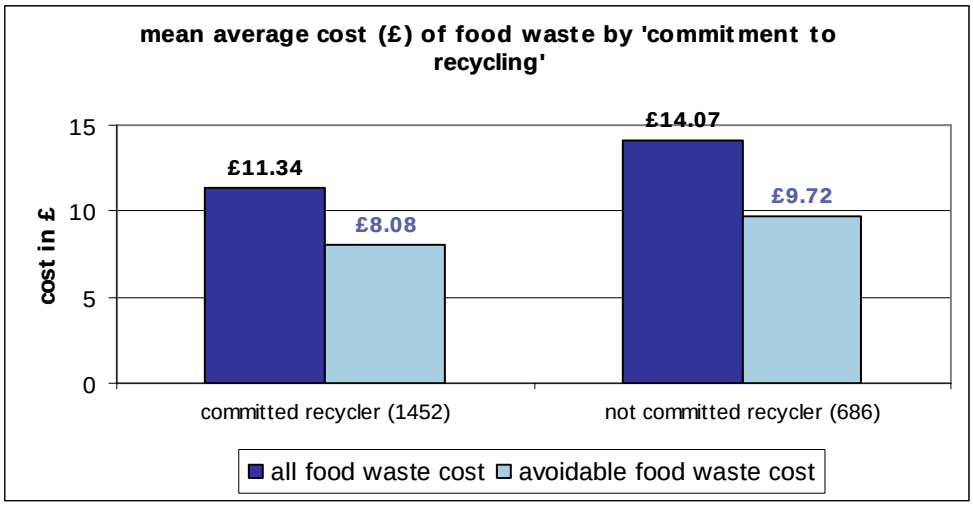
Figure 211 The weight (kg) per week of food waste produced by households with different commitments to recycling



The above chart illustrates that, on average, households that are not committed to recycling produce the most food waste each week; the average household that is not committed to recycling throws away 6.5kg of food a week (340kg a year) of which 3.9kg (60.3%) a week (200kg a year) is avoidable. Households that are committed to recycling throw away 5.2kg of food waste a week (270kg a year) of which 3.2kg (61.4%) a week (170kg a year) could be avoided.

9.6.2 The cost of food waste thrown away (all methods of disposal)

Figure 212 The cost (£) per week of food waste produced by households with different commitments to recycling



The above chart illustrates that, on average, households that are not committed to recycling household waste throw away £14 of food a week (£730 a year) of which nearly £10 (69.1%) a week (£510 a year) is avoidable. This compares with households that are committed to recycling, which throw away more than £11 of food a week (£590 a year) of which £8 (71.3%) a week (£420 a year) could be avoided.

Figure 213 Commitment to recycling by different amounts of effort put in to minimise food waste

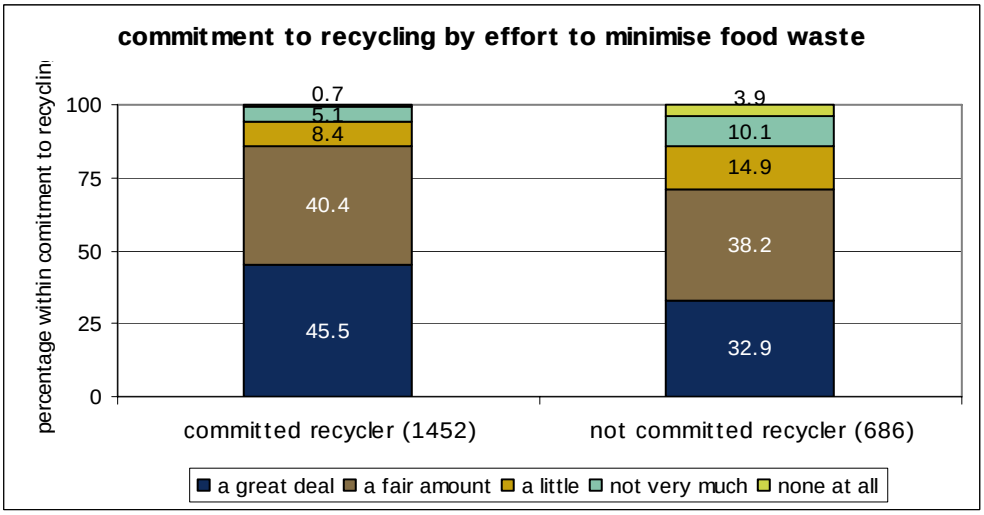


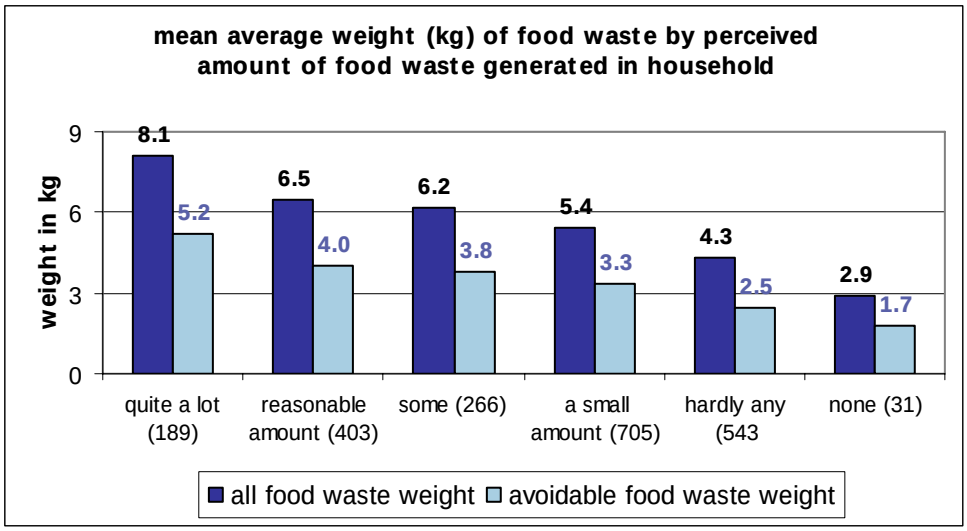
Figure 211 showed that there is an association between a householder's commitment to recycling and the amount of food waste generated. The above chart (Figure 213) illustrates the extent to which households make an effort to minimise the amount of waste generated (this question was asked as part of the survey) and their commitment to recycling household waste. This shows that committed recyclers who waste less food (see Figure 211) are more likely than those that are not committed to recycling to put in at least a fair amount of effort to reduce their food waste.

9.7 Do we throw away more than we think we do?

Previous research by WRAP has suggested that people are unaware of the amount of food they are wasting[35]. This is because food sent for recycling or composted at home is not regarded as 'waste', unavoidable items such as peelings bones and cores are not regarded as 'waste' and also because householders have very limited awareness of the amount of avoidable food thrown away. The survey asked people to assess how much food they thought they were throwing away and this was later measured objectively through the waste analysis element of the research.

9.7.1 The weight of food waste thrown away (all methods of disposal)

Figure 214 The weight (kg) per week of all food waste produced by households according to their perceptions of the amount of food waste they generate



The above chart illustrates that there is a relationship between the amount of food waste that the respondent thought the household was generating and the actual amount of food waste created. Households in which the respondent stated that quite a lot of food waste is generated do throw away the greatest amount of food by weight each week. On average, these households throw away 8.1kg of food a week (420kg a year) of which 5.2kg (64.4%) a week (270kg a year) could be avoided.

On average, households in which the respondent stated that they create no food waste throw away the least amount of uneaten food in a week. The average household in which the respondent stated that there is no food throws away 2.9kg of food a week (150kg a year) of which 1.7kg (60.7%) a week (90kg a year) is avoidable. Similarly, in households where the respondent stated that they have hardly any waste, the weight of the food waste is 4.3kg a week (220kg a year) of which 2.5 kg (130kg a year) is avoidable.

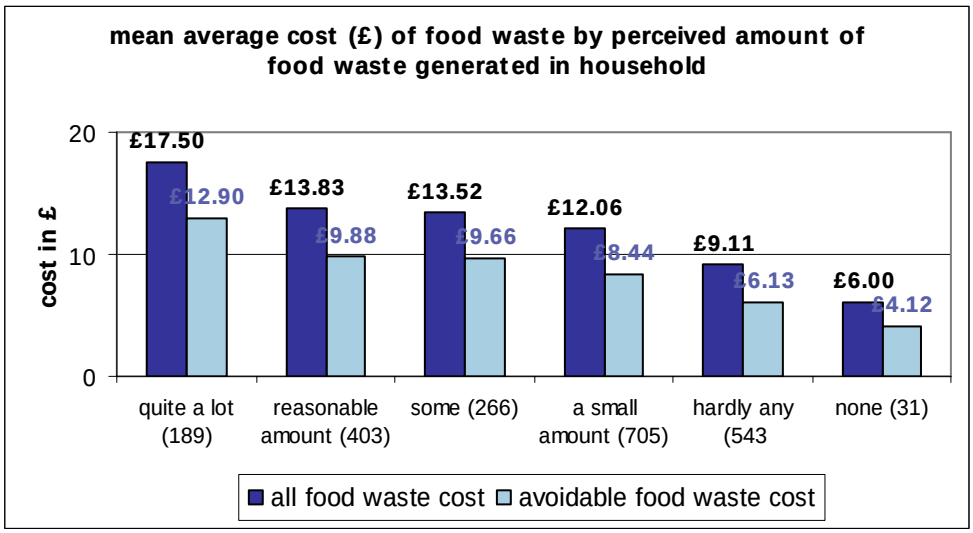
This analysis suggests that householders have some idea of the amount of food they waste, but that many underestimate how much. Households that are adamant that they throw away no food at all are still producing 1.7kg per week, or 88kg a year, of food that could have been eaten if it had been managed better; this is equivalent to a typical 50 litre kitchen bin full a year[36].

[35] *WRAP (2008) We Don't Waste Food! A Survey of Householders' Perceptions and Behaviour around Food Waste Production in Great Britain (to be published shortly on WRAP's website)*

[36] *Assuming a food waste density of 0.55 cubic metres per tonne*

9.7.2 The cost of food waste thrown away (all methods of disposal)

Figure 215 The cost (£) per week of all food waste produced by households according to their perceptions of the amount of food waste they generate



The above chart illustrates that, on average, householders who believe their household disposes of quite a lot of food throw away nearly £18 of food a week (£910 a year) of which nearly £13 (73.7%) a week (£670 a year) is avoidable. This compares with householders who believe their household no food waste which throw away £6.00 of food a week (£310 a year), of which £4.12 (68.7%) a week (£210 a year) could be avoided. Again, this shows that although these households may believe that they have no food waste they are throwing away £210 worth of food that could be eaten each year.

9.8 Summary of chapter

There are some significant differences between the amounts and cost of food wasted amongst householders with different attitudes and behaviour. Key differences in terms of avoidable food waste are summarised below.

- Households that have never composted household waste at home put out the most avoidable food waste for council collection in terms of both weight and cost. Those that used to compost but have since stopped put out the least. However, the indications are that these households have an older profile whilst those that have never composted are much younger and therefore age is likely to be factor.

- Households that put in additional effort to recycle household waste and also recycle most of the waste that can be recycled waste the least amount of food. Households that are 'committed' to recycling were found to state that they put in more effort to minimising food waste than households that are not committed to recycling household waste.

- Typically households waste more than they think they do; households that are adamant that they waste no food waste nearly 90kg a year of avoidable food.

Appendix A: Describing the food waste

Table A1 Food group categories

CODE	GROUP	EXAMPLE
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, fromage frais, clotted cream, Greek yoghurt, egg shells.
4	Dried foods/powders	Bread mix, breakfast cereals, flour, semolina, pasta shells, spaghetti, rice.
5	Fruit[37]	Apple core, orange skin, plum stone, lemon slice.
6	Salads[22]	Cucumber ends, tomato seeds, mixed leaves.
7	Vegetables[22]	Potato peel, whole carrots, turnip peel, pumpkin pith and seeds.
8	Confectionery and snacks	KitKat, bacon crisps, cashew nuts, dry roast peanuts.
9	Drinks	Milk, teabags, coffee granules, Pepsi, dry white wine.
10	Condiments, sauces, herbs and spices	Ketchup, mayonnaise, strawberry jam, sugar cubes, sea salt, gravy, pickles.
11	Desserts	Vanilla ice-cream, pavlova, banoffee pie.
12	Mixed foods	Stew, lasagne, shepherd's pie.
13	Other	Food that does not fit into the above categories.

Table A2 Food preparation state categories

CODE	STAGE	EXPLANATION
A	Fresh, raw or minimally processed	Food waste in a raw or natural state. Some foods would normally require preparation or cooking, but in this category they have been disposed of unprepared or uncooked. The category also includes foods that are minimally processed; for food waste to fall into this category it must have been disposed of whole and untouched (unprepared). For drinks, this category is named 'undiluted or unused'.
B	Cooked or prepared at home	Food waste that has been prepared (including partially consumed) or cooked at home.
C	Ready to consume when purchased	This category consists of processed foods bought in a ready-to-consume state.
D	Cooked	Food waste that has been cooked but it is not known if this is at home or by the manufacturer or retailer.
E	Pre-prepared and cooked at home	Frozen or chilled foods that are bought prepared but must be cooked in the home prior to being eaten. This category of food waste has been cooked in the home.
F	Pre-prepared but not cooked at home	Frozen or chilled foods that are bought prepared but must be cooked in the home prior to being eaten. This category of food waste has been disposed of uncooked.
G	Tinned	Foods that would normally come in tins. Where food waste was thrown away unpackaged, it was classified in this category during the sort process if it looked like tinned food.
H	Other	Not possible to determine the preparation state during the waste sorting process.

[37] *Where food items could be classified in more than one category, the most commonly used one was applied. For example, whilst tomatoes are strictly-speaking fruits they are included with salad items because that is where most people would expect them to be listed.*

Table A3 Examples of food waste by food preparation state

Food group	Fresh, raw or minimally processed	Cooked or prepared at home	Ready to consume when purchased	Cooked	Pre-prepared and cooked at home	Pre-prepared but not cooked at home	Tinned	Unknown
Bakery	Single bread roll, slice of bread, whole bread loaf	Homemade fruit cake, toast	Takeaway muffin, packet of biscuits	Pie crust, chapati	Branded Yorkshire pudding, garlic bread	Frozen burger buns, uncooked branded pastry		
Meat and fish	Raw bacon, uncooked chicken breast	Homemade hamburger, chicken bones	Chicken sandwich filler, sliced ham	Spare ribs, cooked beef patty	Chicken nuggets, fish fingers	Uncooked breaded fish, chicken dippers	Corned beef, tinned salmon	Dripping, animal fat
Dairy	Cheese, raw egg, unused egg	Egg shells, cheese rind	Branded grated cheese					
Dried food	Flour, raisins, full bag of flour	Plated noodles, home-cooked rice	Cereal, takeaway rice	Spaghetti	Pot Noodle leftovers	Bread yeast, chocolate powder		
Fruit	Apple, orange, unopened packet of grapes	Fruit peel, squeezed orange	Glace cherries, branded pineapple chunks	Cooked pear			Fruit cocktail, branded tinned fruit	Unknown fruit mush
Salad	Lettuce, tomato, sealed cucumber	Cucumber end, homemade mixed salad	Coleslaw, takeaway salad				Tinned tomatoes	
Vegetables	Potato, onion sealed branded pack of peppers	Cooked potato, mushroom stalks	Takeaway chips, branded pickled onions	Cooked chips, Quorn pieces	Cooked oven chips, readymade potato mash	Frozen bag of oven chips, frozen beans	Baked beans, tinned corn	Mixed unknown vegetables
Confectionery	Loose hazelnuts	Microwaved popcorn	Chocolate bar, crisps	Popcorn				
Drinks	Unused teabags, fruit shoot	Used teabags	Coke, branded milkshake					
Condiments	Fresh basil, table pepper	Homemade dip, chopped coriander	Takeaway sauce, chocolate spread			Jarred pasta sauces, stir-fry sauce	Tinned syrup	
Desserts		Homemade apple pie	Branded cheesecake	Custard	Home-prepared jelly	Jelly cubes	Tin of custard	
Mixed foods		Homemade stew, homemade vegetable meal	Takeaway curry, sausage roll	Lamb curry, pie	Ready meal leftovers, pizza crust	Frozen branded pizza, uncooked mini kievs	Tinned spaghetti bolognaise	Meal gunge
Other		Unidentified leftovers	Branded baby food, cat food	Mixed mouldy food			Unknown tinned food	Calcium tablets, Nicorette gum

Figure A1 The form used by the on-site analysts to classify the waste

Household ID number	PAGE _____ OF _____	Residual waste ☐ OR Food collection ☐	Date:
LOCAL AUTHORITY:	SORTER:		CHECKED BY:

FULL DESCRIPTION OF FOOD WASTE INCLUDING BRAND AND NUMBER OF UNITS (e.g. 2 Birds Eye breaded fish fingers)	✓if applies			FOOD DATE	FOOD GROUP	FOOD STAGE	TOTAL Weight	EXODUS USE ONLY		
	Loose	Packaged	Resealable					FOOD TYPE	PIE	COST

Table A4 Food type categories

1. BAKERY
1a. Bread loaf
1b. Bread roll/baguette
1c. Bread slice
1d. Bread crust
1e. World breads (naan, tortilla etc)
1f. Cake
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 & fish
2h. Cured meat
2i. Mincemeat
2j. Meatballs
2k. Lamb
2l. Hotdogs/frankfurters
2m. Unidentifiable/mixed bones
2n. Black pudding
2o. Unidentified meat/offal
2p. Burgers
3. DAIRY
3a. Milk
3b. Cream
3c. Yoghurt/yoghurt drinks
3d. Cheese
3e. Eggs
3f. Butter/margarine/lard
3g. Other dairy
3h. Crème fraîche
4. DRIED FOODS AND POWDERS
4a. Pasta
4b. Rice
4c. Flour
4d. Wheat products (semolina, tapioca)
4e. Breakfast cereals
4f. Powdered soups and drinks
4g. Other dried foods
4h. Dried fruit
5. FRUIT
5a. Apples
5b. Bananas
5c. Cherries
5d. Grapes
5e. Lemons
5f. Limes
5g. Melons
5h. Oranges, satsumas etc
5i. Pears
5j. Pineapples
5k. Plums
5l. Strawberries
5m. Other fruit
5n. Mangos
5o. Kiwis
5p. Pomegranates
5q. Nectarines
5r. Peaches
5s. Avocados
5t. Mixed fruit
6. SALADS
6a. Lettuces

6b. Cucumbers
6c. Tomatoes
6d. Spring onions
6e. Coleslaws and hummus
6f. Mixed salads
6g. Other salads (NB peppers are classed as a vegetable)
6h. Rocket
6i. Radish
6j. Potato salad
6k. Beetroot
6l. Celery
7. VEGETABLES
7a. Potatoes
7b. Carrots
7c. Parsnips
7d. Onions
7e. Mushrooms
7f. Turnips/swedes
7g. Cabbages
7h. Mixed vegetables
7i. Other raw vegetables
7j. Sandwich spreads (vegetable-based)
7k. Baked beans
7l. Sweetcorn/corn on the cob
7m. Peppers
7n. Leeks
7o. Courgettes
7p. Cauliflowers
7q. Broccoli
7r. Beans (all varieties)
7s. Peas (all varieties)
7t. Sprouts
7u. Spinach
7v. Aubergines
8. CONFECTIONERY AND SNACKS
8a. Chocolate/sweets
8b. Crisps
8c. Nuts
8d. Cereal bars
8e. Other confectionery/snacks
8f. Prawn crackers
8g. Popcorn
8h. Savoury snacks/biscuits
9. DRINKS
9a. Tea/teabags
9b. Coffee/granules
9c. Sodas
9d. Squash
9e. Other drinks
9f. Fruit juice
9g. Milkshake/milk drinks
9h. Water

10. CONDIMENTS, SAUCES, HERBS AND SPICES
10a. Sugar
10b. Salt
10c. Herbs/spices
10d. Jams
10e. Gravy
10f. Pickles
10g. Ketchup
10h. Mayonnaise/salad cream
10i. Oils
10j. Other sauces, condiments etc
10k. Other sauces
10l. Other condiments
10m. Cook-in sauces
10n. Spreads
10o. Dips
10p Olives
10q. Honey
11. DESSERTS
11a. Milk puddings (custard etc)
11b. Ice cream
11c. Other puddings
11d. Fruit pie/strudel/crumble
11e. Cheesecake
11f. Mousse
11g. Trifle
11h. Dessert cakes/gateaux
11i. Jelly
11j. Chocolate puddings/desserts
12. MIXED FOODS
12a. Soups
12b. Stews
12c. Sandwiches
12d. Composite/other
12e. Composite meal
12f. Composite snack
12g. Mixed foods
13. Other
13a. Pet food
13b. Baby milk
13c. Baby food
13d. Other
13e. Gunge
13f. Medicinal

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 foods	Meat or fish mixed meal	A collection of waste that was 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 foods	Rice mixed meal	A collection of waste that was 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 foods	Pasta mixed meal	A collection of waste that was 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 foods	Vegetable mixed meal	A collection of waste that was 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.	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 that has been 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 foods	Mixed food groups	This is 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	These are sauces that have not been assigned to specific categories but are identifiable as sauces rather than the general term of condiments, sauces etc.	Sauces, takeaway	Mint sauce, Coleman's, 1/3	Tartar sauce

Food group	Food type	Explanation	Examples of food waste descriptions given on sort sheet		
Condiments	Other sauces, condiments etc	These are 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
Condiments	Other condiments	These are condiments that have not been assigned to specific categories but are identifiable as condiments rather than the general term of condiments, sauces etc.	Brown sauce	Horseradish	Thousand island dressing
Vegetables	Mixed vegetables	This category has been 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	These are 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	This category has been 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	Apple, orange peel	Fruit peel mixed
Fruit	Other fruit	These are 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. 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 gramme (pence)	Unit price in £ per gramme	£0.391875

The following tables provide examples of the pricing used for different types of food waste. It should be noted that food waste that was 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
Eggs	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
Beef steak	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) =37.8
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	Price 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
Sweet corn	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
Cauliflower	Each	81p (544g)	1 serving (¼ cauli) = 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
Swede	Each	69.3p	1 swede (585g) = 69.3p
Leeks	Per kg	£4.50	1 leek (193g) = 86.85p
Avocado	Each	80.25p	1 avocado (160g) = 80.25p
Parsnips	Per g	£1.91	1 parsnip (146g) = 27.886p
Cucumber	Each	79.5p	½ cucumber (190g) = 39.75p
Bagged salad	Per 100g	83.95p	1 serving (¼ bag) = 20.99p
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
Kiwi	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 (1/8 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
Mango	Each	£1.00	Peel and stone = 1/5

Table C7 Examples of fruit 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
Cake (loaf-type cake)	Each (160g)	£1.0825	1 serving ¼ cake (40g) = 27.06p
Fruit cake bars	Each	16.5	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
Crumpet	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	48.45	1 serving (35g) = 16.9p
Wheat cereals	Per 100g	28.65	1 serving (35g) = 10.27p
Crisps	Multipack 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 (g)	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	4.352
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	14.968
Peach stone	1 peach = 74.84p	1/5 of original	32g	15.168p
Nectarine stone	1 nectarine = 46	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 (g)	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	16.666p	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
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	54.4p	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

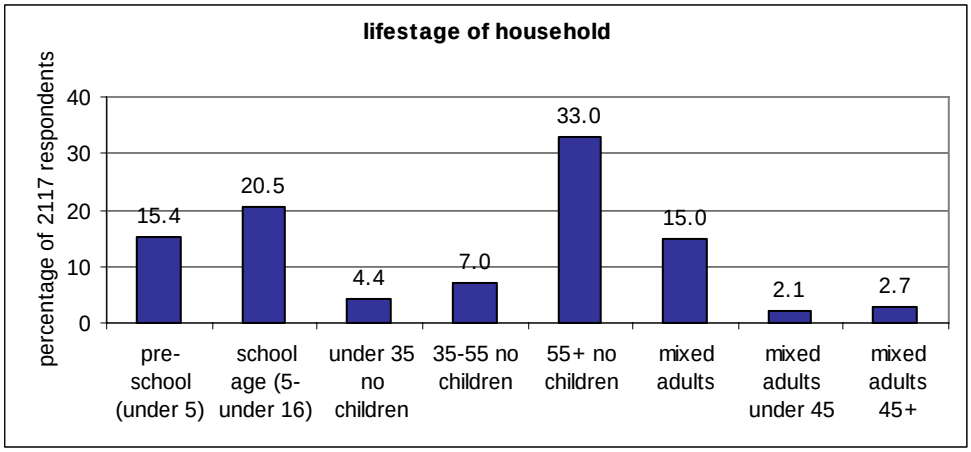
Appendix D: Profile of the participating households

Introduction

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 the UK. The households were selected to provide a good cross-section of the British population to enable statistically valid interpretation of the findings and in particular in extrapolating the data to represent a larger population.

'Lifestage' of households

Figure D1 Proportion of respondents within various 'lifestage' categories



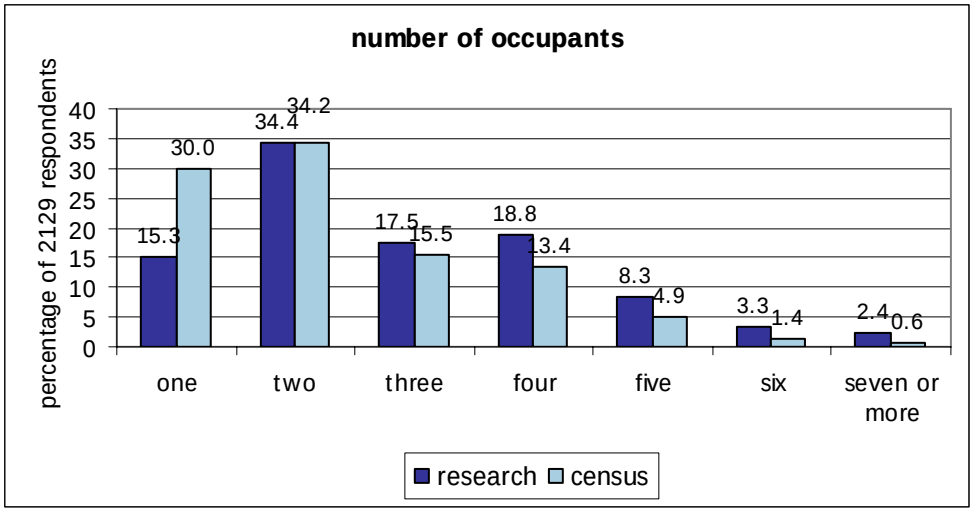
The above chart illustrates the 'lifestage' of the householders that participated in the research, based on the information provided by the respondent regarding the age of other occupants within the household and the household composition. This information is not directly comparable with the ONS census data.

Where households had children, the children were most likely to be school-aged; a fifth (20.5%) of the households were classified as families in which the youngest child was aged between five and 15 years. Less than a fifth (15.4%) of the households had a youngest child aged under five years.

A third of the respondents lived in a household in which all occupants were aged over 55 years.

Number of occupants in household

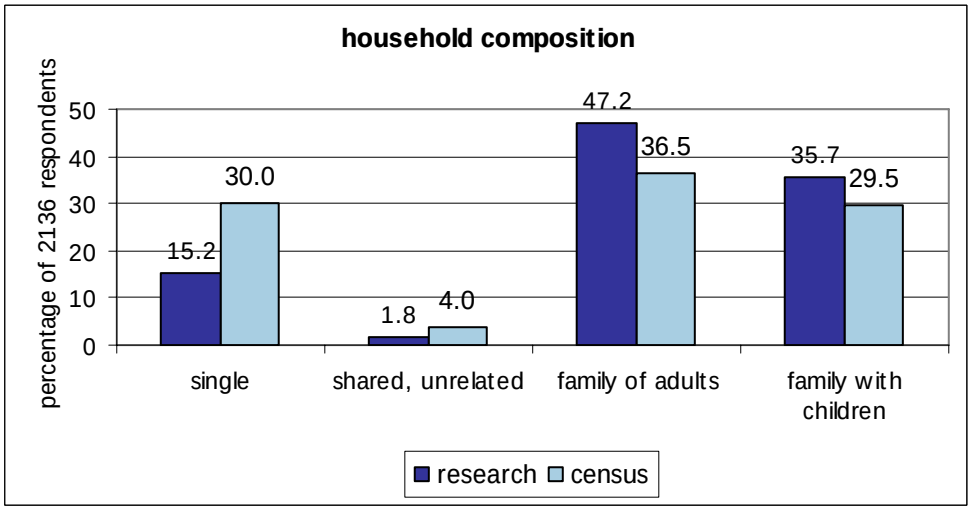
Figure D2 Proportion of respondents within households of different sizes



The chart above illustrates the number of occupants within the respondent households and that of households within England and Wales according to the 2001 census (source ONS). This shows that single-occupancy households are significantly under-represented in this study. This is likely to be because the research could not include residents of flats as it would not have been possible to attribute waste to the correct property. Without an accurate understanding of the number of occupants living in flats, it is not possible to re-weight the data accordingly. If the number of single and multiple-occupancy flats is similar to that of single and multiple-occupancy non-flat housing then the results would not need to be realigned. However, it is likely that there is a higher proportion of single-occupancy flats than there are single-occupancy houses.

Household composition

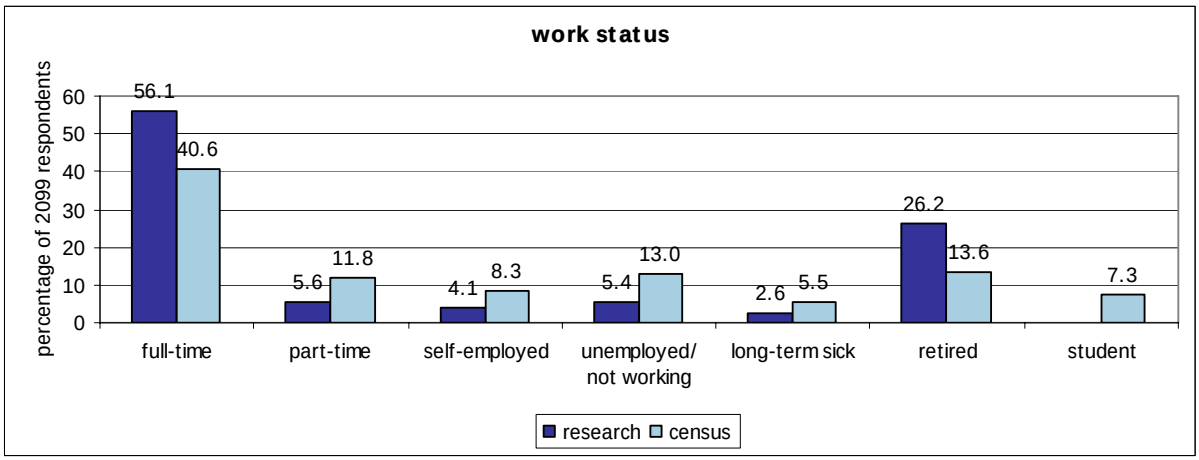
Figure D3 Proportion of respondents within different household compositions



The previous chart illustrates the household composition of respondents and composition of households within England and Wales according to the 2001 census (source ONS). It shows that single-occupancy households are under-represented whilst families (especially those consisting of adults only) are over-represented. Again this is likely to be due to the fact that flats had to be excluded from the research.

Employment status of head of household

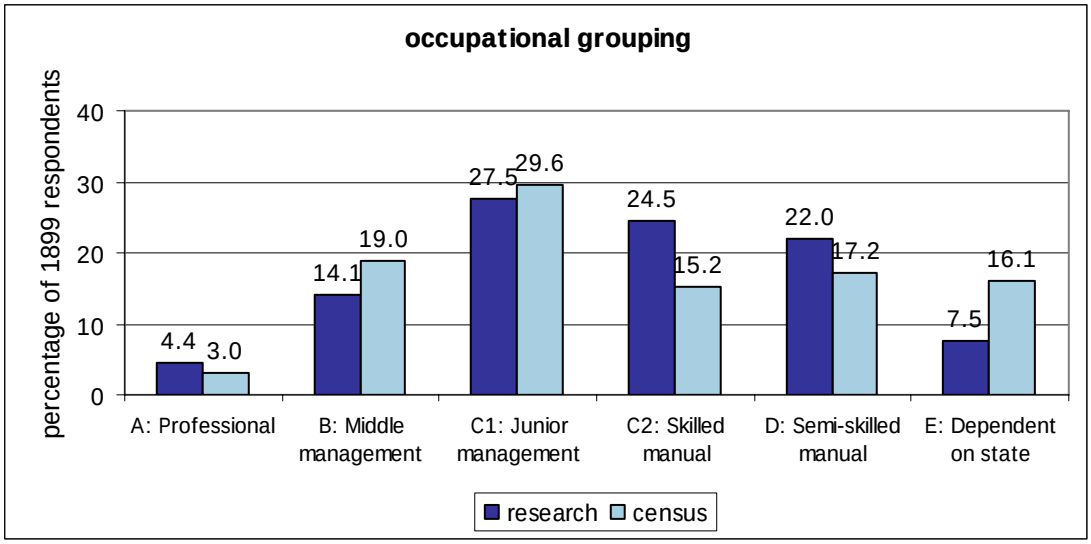
Figure D4 Proportion of respondents according to the main earner's job status



The above chart illustrates the employment status of the head of the household and the employment status of head of households within England and Wales according to the 2001 census (source ONS). The profile of research participants shows that full-time and retired workers are over-represented whilst unemployed and student households are under-represented. This is likely to be due in part to flat-dwellers being excluded from the research but may also reflect the relative scarcity of some groups in the population (students, for example); despite the relatively large sample size it was not possible to cover every group adequately, particularly because the research fieldwork was designed to take place in areas that had a waste collection service on a set day.

Occupational group of head of household

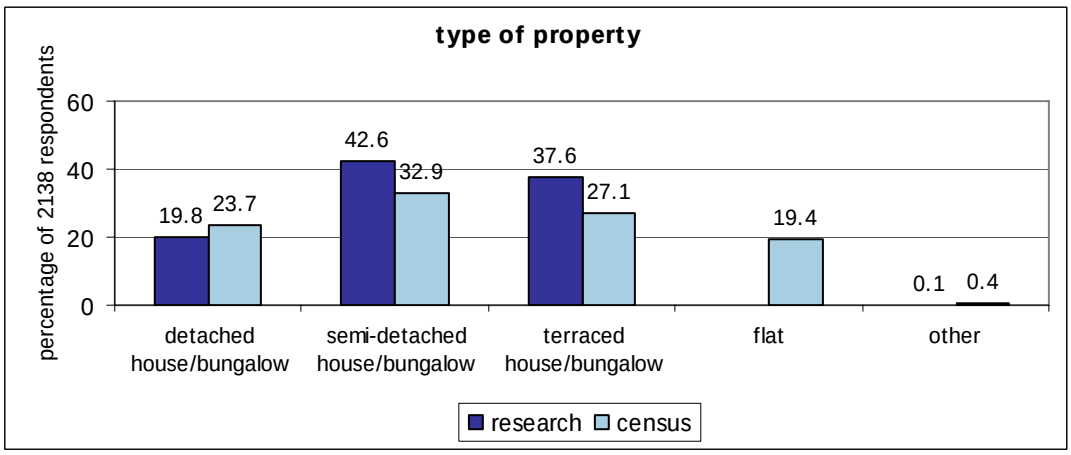
Figure D5 Proportion of respondents according to the main earner's occupational group



The above chart illustrates the occupational grouping of the head of the household (source MRS Occupational Groupings, 5th Edition) and social grade of households within England and Wales according to the 2001 census (source ONS). Where the head of the household is now retired, the grouping is based on their previous occupation. The profile of the research participants broadly reflects the census data. However, C2: skilled manual workers are somewhat over-represented whilst E: dependent-upon-state households are under-represented.

Type of property

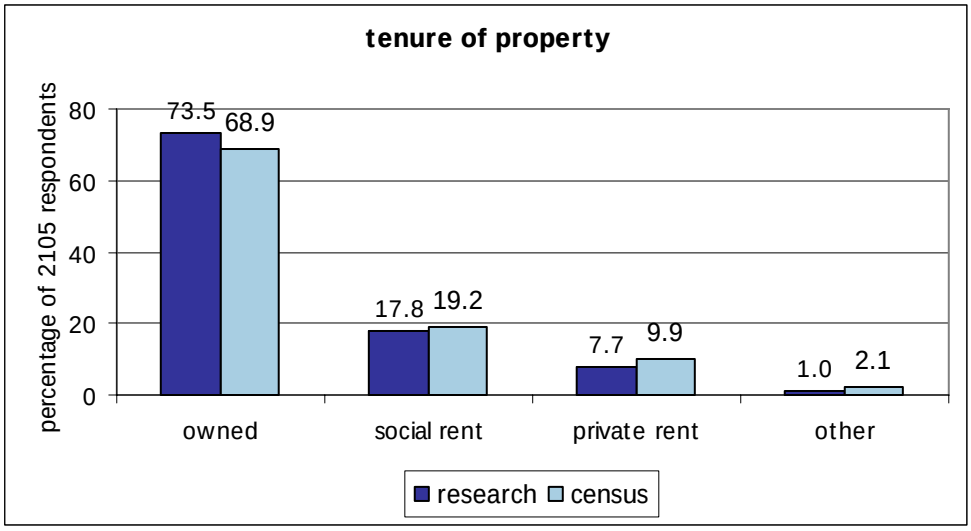
Figure D6 Proportion of respondents within households living in different types of property



The chart above illustrates the type of the property lived in by the respondents and the types of properties in England and Wales according to the 2001 census (source ONS). The profile of the research participants broadly reflects the census data although the sample is slightly biased towards larger houses. The obvious discrepancy is because the research did not include residents of flats.

Tenure of property

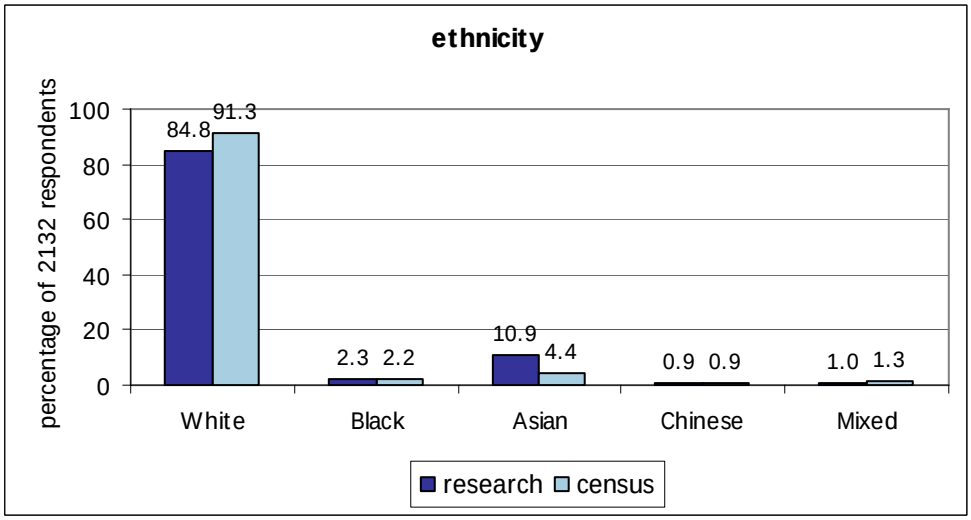
Figure D7 Proportion of respondents by tenure



The above chart illustrates the tenure of the property of the respondents and the tenure of households within England according to the 2001 census (source ONS). The profile of the research participants closely reflects the census data with the small discrepancy almost certainly due to the exclusion of flats.

Ethnic origin

Figure D8 Proportion of respondents living within households by ethnicity



The chart above illustrates the ethnic origin of the participants in the research and the ethnic origin of all individuals aged 16 years and over living in England and Wales according to the 2001 census (source ONS). There is a slightly higher proportion of Asian householders within the research sample and slightly fewer White households when compared to the census data. This is due to the (deliberate) inclusion of Bradford within the sample with its high population of Asian families compared with most of England and Wales.

Implications

Although respondents that were interviewed and subsequently had their waste analysed were selected on a random basis, there are several factors for which the profile of the respondents does not fully represent the national profile. The significant ones are listed below.

- Number of occupants and household composition, with smaller households being under-represented.
- Employment status, with part-time, self-employed, unemployed, long-term sick and student households being under-represented.
- Type of property, with flats being absent altogether for methodological reasons.
- Ethnic origin with Asian households being over-represented.

No research study of this type could expect to represent all these factors adequately without employing complex quota sampling systems, which in this case would have been unworkable due to the constraints imposed by working within local authority waste collection rounds.

To take account of the shortcomings of the achieved sample with respect to household composition, all calculations of food waste have been based on calculating individual estimates for different types of household and then adding the results together. Household composition has been deemed to be the most important factor that needs correcting as it also takes account of household size, which has been shown to influence food waste generation (see Chapter 8), compensating to some extent for the lack of flat-dwellers in the sample as these tend to be smaller and for the over-representation of Asian households as these tend to be larger.

Appendix E: The questionnaire used prior to waste collection and analysis

The following questionnaire was used during the doorstep interviews with householders prior to the collection of the waste for sorting. It should be noted that some of the questions were not part of the food waste compositional analysis, but were include for a separate project undertaken for the Environment Agency.

Background details			
Respondent Name		**Gender**	Male ☐ Female ☐
House name/number		**Name of road**	
Post code		**Telephone No**	
E-mail		**Local Authority**	

Type of residence	Detached house / bungalow ☐	Semi-detached house or bungalow ☐	(end of) Terrace house or bungalow ☐
	Other (specify)		

KERBSIDE COLLECTIONS

Mixed collections	2-weekly ☐		Weekly ☐
M. waste receptacle	Wheelie bin ☐		Sack ☐
Food waste collections	2-weekly ☐ GO TO A	Weekly ☐ GO TO A	None ☐ GO TO C
A) If a food waste collection service is available ask... **Are you aware that the council provides a service whereby food waste is collected separately from your home for recycling?**	Yes ☐		No ☐
B) If aware of the food waste collection service ask... **Do you participate in the food waste collection?** **If NO: ask WHY NOT?** **IF YES ASK: Has the amount of food waste changed since using the service and if so, WHY?**	Yes ☐		No ☐
	Why not?		
	We throw away more food ☐	No change ☐	We throw away less food ☐
	Reason for change...		

C) Which, if any of the following materials do you put out for separate kerbside collection by the council and how frequently are they collected? **D) And which do you recycle through other sources such as community banks or household waste recycling sites?**	**Material**	**Kerbside**				**Other recycling method**
		2-weekly	**Weekly**	**Not available**	**Not used**	
	Garden waste	01	02	03	04	05
	Paper/ magazines	01	02	03	04	05
	Glass bottles/ jars	01	02	03	04	05
	Tins/ cans	01	02	03	04	05
	Tin foil	01	02	03	04	05
	Card	01	02	03	04	05
	Plastic	01	02	03	04	05
	Textiles	01	02	03	04	05
	Other (specify)	01	02	03	04	05

Experience of home composting

Q1) Do you have access to any of the following? Tick all that apply	Private garden	01
	Allotment	02
	Patio/yard/balcony	03
	Shared garden	04
	None of these	05

Q2) Has your household ever composted waste at home?	Currently compost at home	01	**Go to Q3**	VERBATIM
	Used to compost but no longer do so	02	**Go to Q5a**	
	Have never composted at home	03	**Go to Q5a**	

Q3) Which of the following do you currently use to make compost at home? Tick all that apply	Compost bin bought privately	01	VERBATIM
	Compost bin from council- **WRAP bin** *ensure this is not the separate collection bin*	02	
	Home made bin	03	
	Loose compost heap	04	
	Green-cone/digester	05	
	Wormery	06	
	Leafmoulder/plastic bags	07	
	Other -specify	08	

Q4) What type of household waste do you compost at home? Tick all that apply	Garden waste	01	VERBATIM
	Food waste	02	
	Other household waste SPECIFY (e.g. paper, egg boxes, pet bedding, Hoover dust)	03	
	Don't know	04	

Q5a) What do you do with the garden waste *(if home composting garden waste add…that is not composted at home*)? READ OUT…Tick all that apply	We do not have any garden waste	01	VERBATIM
	We compost all of our garden waste	02	
	Put it out with the regular waste	03	
	Put it out for separate council collection	04	
	Take it to the recycling centre / tip / dump	05	
	Other recycling centre	06	
	Burn it	07	
	Other (specify)	08	
	Don't know	09	

Q5b) What do you do with the kitchen waste *(if home composting kitchen waste add…that is not composted at home*)? READ OUT…Tick all that apply	We compost all of our kitchen waste	01	VERBATIM
	Put it out with the regular waste	02	
	Put it out for separate council collection (check above response)	03	
	Take it to the recycling centre / tip / dump	04	
	Other recycling centre	05	
	Feed to animals	06	
	Sink macerator	07	
	Other (specify)	08	
	Don't know	09	

Perceptions of household food waste

Q6a) Which of the following does your household currently have use of or own? READ OUT AND TICK ALL THAT APPLY	Private car	☐1				
	Microwave	☐2				
	Freezer ***SHOWCARD***	Large chest freezer		Small chest freezer		
		Upright fridge freezer		Upright fridge (no freezer)		
		Under-counter freezer		American fridge freezer		
		Fridge with ice box		Other (specify)		
	Sink disposal unit (macerator)	☐4	None		☐4.1	
			Milk		☐4.2	
			Other drinks		☐4.3	
	If yes, what food waste do you put down the macerator?		Gravies/soup		☐4.4	
			Veg/fruit peelings		☐4.5	
			Other (specify)			

Q6b) How many of the following types of animal do you have and which do you feed food waste? READ OUT	Animal	Number	Fed	Animal	Number	Fed
	Dog		☐	Cat		☐
	Rabbit		☐	Guinea pig/rat		☐
	Gerbil/mouse		☐	Bird		☐
	Fish		☐	Wildlife (birds/fox)		☐
	Other (specify)					

Q7) Generally speaking, how often do all members of the household eat together in the evenings?			
	Always / most times	01	***Go to Q8***
	Sometimes	02	***Go to Q8***
	Rarely / never	03	***Go to Q10***
	Don't know	04	***Go to Q10***

Q8) What time do you normally eat together in the evening? Write in	

Q9) Who normally prepares or cooks the evening meal?			
	Mother / female head	01	***Go to Q10***
	Father / male head	02	***Go to Q10***
	Other family member in house	03	***Go to Q10***
	Paid helper	04	***Go to Q10***
	Voluntary helper	05	***Go to M11***
	Other person (specify)	06	***Go to M11***
	Everyone cooks their own	07	***Go to M11***
	It varies	08	***Go to M11***

Q10) What time does the person in the household that normally prepares or cooks the evening meal get home? *Write in*		
	At home all day	01
	Other time (specify)	

M11). SHOWCARD (of types of food waste) **Thinking about the food waste for your household, overall how much food would you say you throw away in general?**		
	Quite a lot	01
	A reasonable amount	02
	Some	03
	A small amount	04
	Hardly any	05
	None	06

M12) Thinking about when you have to throw food away, to what extent, if at all, does it bother you?		
	A great deal	01
	A fair amount	02
	A little	03
	Not very much	04
	Not at all	05

M13) How much effort do you and others in the household go to in order to minimise the amount of food thrown away?		
	A great deal	01
	A fair amount	02
	A little	03
	Not very much	04
	None at all	05

Q14) I'm going to read out some statements about….. Please indicate the extent to which you agree or disagree with each.

	Strongly agree	Agree	Disagree	Strongly disagree	VERBATIM COMMENTS
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	01	02	03	04	
b. I tend to store fresh fruit, vegetables and salads in the manufacturer's wrapping that they come in	01	02	03	04	
c. When I buy perishable food items, I check the date on the pack first	01	02	03	04	
d. I throw away food like bread, cakes and eggs no matter what it looks or smells like if the **best before** date has expired	01	02	03	04	
e. I throw away food like fresh meat no matter what it looks or smells like if the **use by** date has expired	01	02	03	04	
f. I worry about reheating leftovers that have been kept in the freezer	01	02	03	04	
g. I worry about reheating leftovers that have been kept in the fridge for one or two days	01	02	03	04	
h. I prefer to buy frozen vegetables rather than fresh	01	02	03	04	
i. *ASK IF THEY BUY FOOD VIA THE INTERNET ☐ IF YES tick box and ask for agreement on…..* When I buy food over the Internet I mostly buy canned and bottled food rather than fresh produce	01	02	03	04	

Experience of recycling dry waste materials

Q15) How does your household dispose of unwanted clothing and shoes? *Tick all that apply*			VERBATIM
	We have not disposed of any in the last few years	01	
	Council recycling centre / tip / dump	02	
	Community / supermarket collection bank	03	
	Thrown away with regular rubbish	04	
	Separate council collection	05	
	Collected by a charity	06	
	Taken to a charity	07	
	Given away to friends / others	08	
	Sold at car boot / auction	09	
	Other (specify)	10	
	Don't know	11	

Q16) How does your household dispose of unwanted electrical items? *Tick all that apply*	We have not disposed of any in the last few years	01	VERBATIM
	Council recycling centre / tip / dump	02	
	Community / supermarket collection bank	03	
	Thrown away with regular rubbish	04	
	Separate council collection	05	
	Collected by a charity	06	
	Taken to a charity	07	
	Given away to friends / others	08	
	Sold at car boot / auction	09	
	Taken away be shop / supplier on replacement	10	
	Other (specify)	11	
	Don't know	12	

M17) Thinking about RECYCLING HOUSEHOLD WASTE, how important is recycling to you personally? SHOWCARD	Very	01
	Fairly	02
	Not very	03
	Not at all	04
	Don't know	05

M18) Which of these statements best describes your attitude to recycling? SHOWCARD	I recycle even if it requires additional effort	01
	I recycle if it does not require additional effort	02
	I do not recycle	03
	Don't know	04

M19) Which of these statements best describes how much you recycle? SHOWCARD	I recycle everything that can be recycled	01
	I recycle a lot but not everything that can be recycled	02
	I sometimes recycle	03
	I do not recycle	04
	Don't know	05

Profile / demographics

Q20) How many occupants are there in total within your household?	Single occupancy	01	total number occupants in house
	Shared, non-related	02	
	Family, only adults	03	
	Family with children	04	

Q21) How many of the people living in the house are away due to work or education commitments? ***Write in number***	Full time work		other
	Part-time work		
	Day education		
	Live in education (term time)		
	Other (specify)		

Q22) How many of the people living in the house work outside of the home and how many work from home? ***Write in number***	Working in a workplace	
	Working from home	

Q23) Into which of the following age groups do YOU fall? (tick box)	16-24 years	01
	25-34 years	02
	35-44 years	03
	45-54 years	04
	55-64 years	05
	65 years & older	06

Q24) Into which of the following age groups do the other members of your household fall? (write in number of occupants within each age band)		
	0-4 years	
	5-15 years	
	16-24 years	
	25-34 years	
	35-44 years	
	45-54 years	
	55-64 years	
	65 years & older	

Q25) Do you own your house or are you renting?			
	Owned outright	01	**other**
	Owned with mortgage	02	
	Council / Housing Association rented	03	
	Private rent	04	
	Other - specify	05	

Q26) 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	01	**DETAILS OF JOB**
	Part time	02	
	Self-employed	03	
	Unemployed	04	
	Long term sick / disabled	05	
	Retired	06	

Q27) What is your ethnic group?			
	White British	01	specify
	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	

Waste & Resources Action Programme

The Old Academy
21 Horse Fair
Banbury, Oxon
OX16 0AH

Tel: 01295 819 900
Fax: 01295 819 911
E-mail: info@wrap.org.uk

Helpline freephone
0808 100 2040

www.wrap.org.uk/thefoodwewaste

recycle