

# Household food and drink waste: A people focus



This report explores the relationship between the level of avoidable food and drink waste from households in the UK and factors including socio-demographics, behaviours and others relating to food, such as healthy eating and time available for food-related activities. These insights will support WRAP and its partners to develop more effective ways to help people waste less food.

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**Front cover photography:** Love Food Hate Waste

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# Executive summary

In November 2013, WRAP published *Household Food and Drink Waste in the UK 2012*<sup>1</sup>, which quantified the amounts, types and reasons for food and drink<sup>2</sup> being wasted from UK households. As part of that research, two datasets were collected that included details of what was wasted from individual households in addition to information from questionnaires relating to characteristics of those households. One dataset originated from diary-based research and the second from compositional analysis of household waste (conducted with informed consent).

Although a large amount of information was published in that previous report, there were additional analyses possible with these datasets to obtain information useful to those working to reduce household food waste<sup>3</sup>. In particular, the two studies provided a unique opportunity to compare levels of waste generated by households with different characteristics, including food-related behaviours they engage in such as shopping, storage and cooking. Additionally, in light of evidence from a number of small-scale, qualitative studies undertaken by WRAP and other researchers, which highlighted the importance of broader, contextual factors for household food waste generation (such as concerns over healthy eating, taking care of the family or availability of time), the analysis presented in this report aims to examine whether some of these more indirect relationships to food waste can be identified in a large, representative sample. Furthermore, the relationship between socio-demographics and food waste levels is examined.

This report presents statistical modelling using the two datasets to understand what factors are associated with different levels of avoidable food waste<sup>4</sup> from different households. Analysis of other data sources are used at times to provide additional insights.

## **Summary of results**

### **Variation in avoidable food waste with household socio-demographics**

Socio-demographic factors are unlikely to be a direct cause of food waste generation, but may be correlated with factors that do have a direct impact on waste levels (such as behaviours). Therefore, identifying differences between socio-demographic groups helps to understand the complexities of household food waste generation, related to how people act and which factors influence their behaviour. Exploring the differences between socio-demographic groups can also identify how to support different people to reduce their food waste. Household size, age of respondent and employment status of the main household earner were found to be correlated, to a greater or lesser extent, with levels of avoidable food waste.

**Household size:** The average amount of food waste increased with the number of occupants in a household. This in itself is not unexpected, as larger households will buy and prepare more food. However, the average amount of waste *per person* was highest for

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<sup>1</sup> A summary of all WRAP's research in this area can be accessed here: [www.wrap.org.uk/waste-resource-listing](http://www.wrap.org.uk/waste-resource-listing)

<sup>2</sup> Hereafter 'food waste' is used as shorthand for 'food and drink waste'.

<sup>3</sup> Alongside this report, a separate report – *Household food and drink waste: a product focus* – has been published that includes further descriptions of the types and state of food and drink thrown away, in addition to information on when and why this waste is discarded.

<sup>4</sup> Avoidable food waste comprises food thrown away that was, at some point prior to disposal, edible, e.g. milk, lettuce, fruit juice, meat (excluding bones, skin, etc.). It does not include inedible material such as egg shells, bones, and citrus peel. See glossary for further information.

single occupancy households. Compared to larger households, a greater proportion of what was wasted by those in single occupancy households was due to food not being used in time. Other data indicates that those living alone buy more food (per person) than average, and throw away a greater proportion of what is bought.

The higher levels of waste (in comparison to larger households) do not appear to be associated with the food-related behaviours<sup>5</sup> that those in smaller households undertake or the types of people living in them. Other research<sup>6</sup> suggests that managing food in smaller households is more difficult than for larger households: for some products it can be difficult to obtain food in appropriate-sized packs, and where it is possible it can be more expensive (per kilogramme or per litre). Furthermore, day-to-day variations in the amount of food consumed, for example due to changes in circumstances or plans, are more likely to impact on waste levels in smaller households.

**Age:** Analysis reveals that – on average – lower levels of waste were generated in households containing older people compared to younger people, with those aged 18-34 wasting the most. Differences existed in the types of food wasted, although all age groups threw away similarly large amounts of fresh vegetables and salads. In general, younger people wasted more due to cooking, preparing and serving too much than older people, whilst older people had a higher proportion of food thrown away due to it not being used in time. The latter may be linked to the fact that many older people live alone (see the previous section), and are also less likely to use packaging to keep food fresher for longer. Older people tend to portion food more accurately, and are more inclined to use up leftovers.

Other WRAP research<sup>7</sup> has shown that younger people are more likely to report lower proficiency in some of the food management skills, which could help to explain why younger people are less likely to participate in some of the waste-prevention behaviours.

Further analysis suggests that at least some of this trend is explained by the employment status of the main income earner – older people being more likely to live in households where the main earner is retired. There is some evidence to suggest that this relationship could be linked to the availability of time. Older people were less likely to claim that their lives were so busy that they 'ate what they could while on the go', and agreeing with this statement was found to be correlated with higher levels of waste. Contrary to common assumptions, older people were not found to be more concerned over food waste than younger groups – but they may be better equipped in terms of skills and knowledge, and have more time, to act on these concerns.

**Employment status:** The analysis looked at differences between three broad groups: those in paid employment; those who were retired; and those not working for reasons other than retirement. Those households where the main earner was retired had the lowest average levels of food waste. Employment status was correlated with age (with older people more likely to be retired). However, in models controlling for age, employment status was still statistically significant. This means that some of the variation in waste levels linked to employment cannot be explained by age-related effects.

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<sup>5</sup> In this report, a behaviour is used to mean an activity; food-related behaviours include meal planning, use of the freezer and using up leftovers.

<sup>6</sup> e.g. one person household message testing: a summary brief, WRAP (2014) <http://partners.wrap.org.uk/assets/9354/>

<sup>7</sup> See page 21 of WRAP (2007) 'Food Behaviour Consumer Research. Quantitative Phase' at <http://www.wrap.org.uk/sites/files/wrap/Food%20behaviour%20consumer%20research%20quantitative%20jun%202007.pdf>

Additional analysis suggests that those households where the main earner was retired had higher levels of engagement in some of the waste prevention behaviours than other households. Specifically, those households where the main earner was retired were more likely to make a list, cook the right amount, and less likely to throw food away past the date on the packaging. In contrast, households where the main earner was retired were less likely to use the freezer. Furthermore, in those households where the main earner was retired, questionnaire respondents were less likely to cite time constraints as a hindrance to minimising waste.

**Presence of children:** A number of studies<sup>8</sup> have suggested that children could be influencing the amount of food waste generated in the home. Parents sometimes cite children being 'fussy' and leaving unfinished meals on their plates as a reason for throwing food away. Moreover, qualitative evidence suggests that some families regularly buy more than is needed in order to provide a wide selection of food for the children, even if it means that some of it may be wasted; others intentionally cook more than may be needed, so that second helpings are always available.

The analysis presented in this report suggests that families with children generated at least as much waste as all-adult households containing the same number of people. Taking into account the lower calorific needs of younger children, the fact that children were associated with the similar levels of waste as adults indicates that a higher proportion of food entering the home was wasted from families with children.

This additional analysis seems to support the popular view that waste can sometimes arise because children reject food or because parents cook or prepare more food than is required. There is also evidence to suggest that families with children might be paying greater attention to food safety, being more likely to throw away food because it has gone past the date on the packaging, which could (for products carrying a 'best before' date) lead to edible food being discarded. Families with children were also less likely to use their leftovers than households without children. On the other hand, households with children were more likely to be involved in two food-related behaviours than those without children – meal planning and use of freezer.

### **Variation in avoidable food and drink waste with food-related behaviours**

The correlations found between certain food-related behaviours and avoidable food waste are consistent with the hypothesis that these behaviours help reduce food waste, although other explanations may explain the correlations. The following behaviours were found to be correlated with lower levels of avoidable food waste:

- **Strong evidence:** Using leftovers; throwing away fewer items because they have gone past their date label<sup>9</sup> (those throwing away fewer items generating less waste).
- **Moderate evidence:** Meal planning; list making; use of the fridge to store apples; cooking the right amount of rice and pasta; buying less of other items when purchasing special offers.

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<sup>8</sup> E.g. Cappellini, B., Parsons, E. (2013) 'Practising thrift at dinnertime: mealtime leftovers, sacrifice and family membership', *The Sociological Review* 60 (S2), pp. 121-134;

Evans, D. (2012) 'Beyond the Throwaway Society: Ordinary Domestic Practice and a Sociological Approach to Household Food Waste', *Sociology*, 46 (1), pp. 41-56.

<sup>9</sup> 'Use by' dates refer to safety. Food can be eaten up to the end of this date but not after, even if it looks and smells fine. 'Best before' dates refer to quality. Foods will be safe to eat after the 'best before' date, but may not be at their best. The shelf life of many products (with either type of date) can be extended through the use of the freezer.

No correlation was found between some behaviours, such as checking cupboards and using the freezer, and avoidable food waste levels. This may be due to the fact that, by their nature, questionnaires are not able to capture the full richness in how activities are implemented within the home, and some behaviours may be more or less important to specific groups or circumstances. Therefore, this lack of correlation is not necessarily a reason to stop promoting them as strategies for food waste prevention.

The analysis also points to a complex relationship between behaviours and levels of avoidable food waste. This is likely to be because food can be wasted for a variety of reasons and the actions required to prevent different types of waste differ. In addition, qualitative research suggests that the generation of food waste is usually the result of the interplay between multiple behaviours. All of these points make detecting and quantifying the effects of single behaviours on food waste challenging. For this reason, it is difficult to determine which behaviours are most important for the population; for individual households, the behaviours that will help them reduce food waste will vary greatly depending on the reasons such waste is generated.

### **Indirect influences on food and drink waste**

**'Fussy eaters':** Overall, the findings of this analysis provide support for the notion that personal preference, or more specifically 'fussy eating' (which was a term used in the questionnaires), contributes to higher levels of avoidable food waste. These results showed a correlation, rather than a causal relationship, between households with 'fussy eaters' and food waste levels; however, given the weight of evidence about this link, including householders themselves citing 'fussy eating' as a reason for food waste, it is likely that a small but substantial minority of avoidable food waste is related to 'fussy eating'. As a rough guide, this includes the 13% of avoidable food waste cited in the kitchen diaries as being connected to 'fussy eating'. 'Fussy eaters', as defined by the person responsible for the majority of the household shopping and cooking, tended to be concentrated in, but not limited to, those under the age of 24. The most 'fussy' group were children between the ages of 3 and 11.

**Healthy eating:** The link between healthy eating and food waste is complex. Whilst people generally do not want to waste food, sometimes other important considerations can override efforts to prevent waste occurring. In particular, there is some qualitative evidence<sup>10</sup> to suggest that concerns about obesity and healthy eating could be indirectly contributing to food waste in some households. For example, some people may buy large quantities of fruit and vegetables motivated by ideas of healthy eating, but for various reasons end up not eating all of what is bought. This may be exacerbated by the perishability of many fresh products, infrequent shopping trips for some households and the unpredictability of people's lives. Concerns about healthy eating are also linked to caring for children and other family members, with qualitative studies<sup>11</sup> finding that parents (particularly mothers) tend to prioritise children's health and nutrition over food waste concerns. In particular, ensuring that plenty of fresh fruit and vegetables are available is important, even if it means that some of them are not eaten and consequently thrown away.

Those who cited 'a need to buy a range of foods to ensure they can provide healthy food for their family' as a barrier to reducing waste (only around 5% of the sample) generated significantly more avoidable food waste than those that did not cite this reason. Similarly those that stated 'I don't want to compromise on the choice of fresh foods I have in my

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<sup>10</sup> e.g. Ganglbauer, E., Fitzpatrick, G., Comber, R. (2013) 'Negotiating Food Waste: Using a Practice Lens to Inform Design', *ACM Transaction on Computer-Human Interaction*, 20(2), pp. 1-25.

<sup>11</sup> e.g. Graham-Rowe, E., Jessop, D.C., Sparks, P. (2014) 'Identifying motivations and barriers to minimising household food waste', *Resources, Conservation and Recycling* (84), pp. 15-23.

fridge' as a barrier (around 4% of respondents) also generated more avoidable food waste than those who did not.

There was however some evidence to suggest that a healthy diet (self-reported) was associated with **lower** levels of avoidable food waste on average. This may not necessarily be a direct result of diet, but linked to other factors that may correlate with healthy eating, such as cooking skills, simply eating less food or managing food in the home more closely.

In summary, any link between healthy eating and waste is far from straightforward, and further research is needed to gain a better understanding of the complex relationships between healthy diets and impacts on food waste.

**Time:** A number of empirical studies<sup>12</sup> have pointed to the difficulties many people face in coordinating busy lives with household food provisioning, cooking and consumption. This analysis has further established a link between avoidable food waste and the amount of time available for food-related activities. The evidence suggests that those who quoted 'I don't have enough time' as a barrier to reducing food waste had higher levels of avoidable food waste (on average) than those who didn't cite this as a hindrance to minimising food waste. Those that agreed with the statement 'My life is so busy that I just eat what I can while I'm on the go' also had higher average levels of waste than those who disagreed with the statement.

Those who strongly agreed that their lives were busy were on average less engaged with many of the behaviours relevant to waste prevention than those who strongly disagreed with this statement. In particular, they were less likely to use leftovers, cook the right amount of food, and more likely to throw food away because it had gone past the date on its packaging.

**Home composting:** On average, home composters generated less avoidable food waste and were more engaged with various food-related behaviours than the rest of the population. Those who composted were more likely to plan their meals, make lists and use their leftovers, which could imply greater involvement in broader food-related practices. They also produced more unavoidable food waste on average, suggesting they cook more from scratch. This implies that the link between home composters and avoidable food waste is indirect (rather than causal), but *could* be linked to home composters being more likely to grow their own food.

**Food waste collections:** No significant correlation was found between levels of avoidable food waste and whether households used separate food waste collections (if available). This is consistent with WRAP's most recent research in this area<sup>13</sup>.

**Participation in the diary research:** Analysis suggested that taking part in the diary exercise did not result in a big change of awareness of food waste generated in participants' homes. Around half of the sample already had accurate perceptions of the amount of food and drink they threw away prior to completing the diary. For the vast majority, the perceptions of waste levels stayed the same or altered only slightly. A small proportion of respondents (around 10%) admitted to have experienced a significant change in waste

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<sup>12</sup> For example, see: Evans, D. (2012a) 'Beyond the Throwaway Society: Ordinary Domestic Practice and a Sociological Approach to Household Food Waste', *Sociology* 46 (1), pp. 41-56.

Ganglbauer, E., Fitzpatrick, G., Comber, R. (2013) 'Negotiating Food Waste: Using a Practice Lens to Inform Design', *ACM Transaction on Computer-Human Interaction* 20(2), pp. 1-25.

<sup>13</sup> See: <http://www.wrap.org.uk/content/food-waste-messages-maximum-impact-uk>

awareness following diary completion, whilst 36% reported a slight change. This awareness change happened in both 'directions', i.e. some realized that they throw away more, and some that they throw away less, than they originally thought.

Those who originally underestimated their waste (around 18% of the sample) were also the ones who had the highest levels of waste reported in the diary. This is an important finding, as it implies that those throwing away the most food do not have an accurate perception of the amount they throw away. It seems, therefore, that diaries could be a useful method for improving waste awareness for those generating the most waste<sup>14</sup>.

Participants who realized that they throw away more than expected were also the most willing to make efforts to reduce their waste. However, willingness to reduce waste – by itself – is not always enough to bring about change. Food waste generation is a complex issue, influenced by a variety of factors. It is relatively easy to declare an intention to reduce waste, but managing a household in a way that reduces waste is likely to be much more challenging.

## **Discussion**

The analysis in this report has identified a number of socio-demographic, direct (behavioural), and indirect (contextual) factors that correlate with the amount of avoidable food waste generated by households.

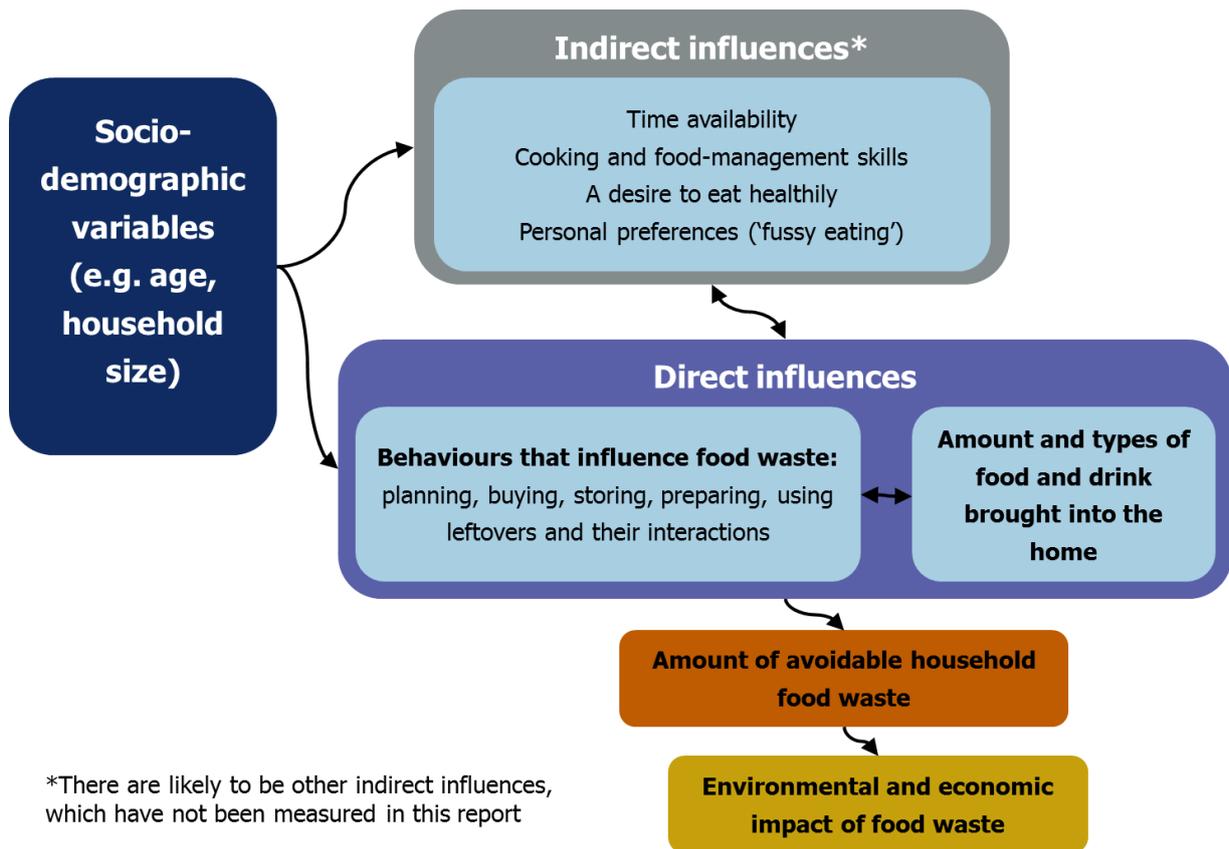
A preliminary investigation was also conducted to explore the correlations between levels of waste and people's values (which were measured via questionnaires). This did not reveal significant correlations, which suggests that any relationship may be subtle, which is not to say that more detailed analysis would not reveal relationships. Further investigation in this area could generate useful findings.

The relationships between these different factors and avoidable food waste are likely to operate in different ways and one possible visual representation of these relationships is shown in Figure ES1. Logic would suggest that certain factors will have a more direct relationship with waste levels than other factors. In particular, food-related behaviours that influence food waste and the amount and type of food brought into the home are likely to be more direct influences than, for example, socio-demographic factors such as age. The correlations found between levels of food waste and factors such as age are likely to be due to the fact that age also correlates with the other relevant factors, such as availability of time, food-related skills and engagement with waste preventing behaviours.

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<sup>14</sup> LFHW provide a food waste diary for Partners and individuals to use, see: <http://partners.wrap.org.uk/assets/3447>

**Figure ES1:** Visual representation of relationships found in the report



This report highlights that the link between direct food-related behaviours and food waste levels is difficult to identify as their effects are likely to differ between households. For example, for some households, planning meals ahead might be a good strategy to avoid waste; for others with more unpredictable lifestyles, a greater degree of flexibility might help keep food waste levels down. Moreover, a number of qualitative studies suggest that these direct food-related behaviours are not performed in a void, but are embedded in and influenced by numerous daily practices (e.g. having a family dinner, grocery shopping or socialising with friends). Whilst people have a degree of choice in what they do, their everyday practices are also influenced by social meanings, norms, conventions, available resources, infrastructure, socially learned skills as well as available time. This report found large-scale quantitative evidence for the influence of some of these broader, contextual factors on the amount of avoidable food waste.

The analyses suggest that there is a relatively strong degree of correlation between many of the variables describing the provisioning, preparation and consumption of food in the home. As food waste is determined by the interplay between these various factors, this explains why statistical modelling in this area is not straightforward, and the difficulties associated with presenting a 'simple' explanation as to why food is wasted.

### **Summary and conclusions**

For developing interventions to prevent household food waste, understanding the wider context is obviously important, and a key challenge is determining how change can be affected despite the complexity and interaction with other food-related activities.

In light of the importance of contextual factors for household food waste generation, interventions need to be broadened beyond just trying to convince individual people to

change, by addressing or mitigating against some of the contextual factors. Examples already in action include WRAP's work with grocery retailers and food and drink manufacturers on changes to food product design, labelling and packaging<sup>15</sup>. Examples of the latter include clear and consistent date labelling and storage guidance, longer shelf-lives, improved freezing instructions and more appropriate pack sizes. All of these should make it easier for those facing time constraints or limited food knowledge to buy the right amount of food and use what is bought – other examples include tools (such as the Love Food Hate Waste (LFHW) App) that create shopping lists from recipes or that allow a running list of food to be kept that is accessible on-line.

Specific recommendations from the detailed analysis are highlighted below:

Differences in the causes of food waste, and the underlying reasons, mean that **messages, engagement and changes in products, packaging and labelling need to be developed with the specific needs of different groups in mind**. Those involved in developing such solutions also need to be cognisant of the constraints different groups of people might face, such as time availability and / or food-related skills.

More than 80% of household food waste is generated by **households containing more than one person**, and so these households should remain a key area of focus for prevention activity. Relevant recommendations can be found below, depending on whether these households have children at home, their employment status or other factors.

However, almost a fifth of food waste arises from **single-occupancy households**, with significantly more waste per person than larger households, and quite different contributing factors. Tailored messaging, engagement and product development should be considered to help people buy the right amounts of food for their needs, and store food to ensure that more of what is bought can be eaten (including use of the freezer; previous WRAP research found that single occupancy households had the largest unused freezer capacity<sup>16</sup>). It is important to recognise that there are large socio-demographic differences within this 'segment' of the population (e.g. from students and young professionals to those who are retired). WRAP has carried out more in-depth research into the motivations and barriers of different groups of people in single-occupancy households, which it will incorporate into the LFHW campaign, and information is available<sup>17</sup> for partners to use to support these different groups as well.

There are a number of measures that grocery retailers and food manufacturers could adopt – in addition to those mentioned above – that could support single-occupancy households: further optimisation of pack-sizes for smaller households, ensuring that these are widely available and that the difference in price, per kilogramme, is minimised between different pack sizes, since some smaller packs cost more per kg than larger sizes; an increase in the available shelf-life of perishable foods<sup>18</sup>; and consideration of how promotional strategies could impact on decisions made by those living alone. In the more specific WRAP research focusing on single occupancy households, many single occupancy households said that split packs, packaging that keeps products fresher for longer, re-sealable packaging and single serving packaging are innovations that they would find useful.

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<sup>15</sup> See: <http://www.wrap.org.uk/content/solutions-prevent-household-food-waste>

<sup>16</sup> See: <http://www.wrap.org.uk/content/understanding-consumer-use-freezer>

<sup>17</sup> *Love Food Hate Waste: one person household message testing: a summary brief*, WRAP (2014) <http://partners.wrap.org.uk/assets/9354/>

<sup>18</sup> WRAP has developed a model, which suggests that – for milk – a small increase in shelf life could lead to considerable reductions in waste, see: <http://www.wrap.org.uk/content/milk-model-simulating-food-waste-home-0>

On average, people of all ages are similarly concerned about food waste, and although there are age-related differences in the average amounts of food thrown away, all age groups can benefit from reducing food waste further.

**Younger people** state that their motivations for wasting less food are saving money and wanting to run an efficient home, similar to the rest of the population. However, there are differences in the factors that they feel hinder them from reducing food waste: this group are more likely (compared to the rest of the population) to cite time pressures, 'not knowing how to reduce food waste', and 'having more important things to worry about'. Therefore, younger people can be harder to reach on this issue as they feel they are busy and have other pressing concerns, but given their stated motivations there is an opportunity to engage them with money-saving benefits. Furthermore, if activities to reduce food waste can also save them time, this group would be more likely to take action. As with the rest of the population, raising awareness of the amount actually wasted, coupled with tips to reduce it (for example promoting the use of LFHW tools such as the meal planner) is likely to be of value to this group.

LFHW has been working with colleges and universities for a number of years, both directly and through its partners. Providing easy, simple recipes and tips for **students** at key moments in their lives – for example leaving home – can help **develop much wanted skills**, help save money and give greater independence to those involved. Likewise, LFHW has been developing and supporting cookery classes in the community to help raise people's **confidence in the kitchen**, helping them to increase their skills, waste less food and drink and save money. LFHW has also been piloting a new programme of work seeking to build kitchen skills for people who would like additional advice and support on budgeting and making the most of their food, but who are not seeking cookery classes. Following positive results, 'Love Food Hate Waste – Save More' will be rolled out across the UK in 2014-15 working in communities to help them save money<sup>19</sup>.

There is scope for reducing the amount of food waste generated by **families with children**. Giving children the opportunity to serve themselves from a central serving dish, rather than other people serving them a plateful at the start of the meal, could help reduce the amount of plate-leftovers, which can be more difficult to use at a later date. Using leftovers for future meals – including using the freezer to extend the life of those leftovers – could form part of a family's strategy to reduce food waste. Freezing leftovers in individual portions that are clearly labelled can be an ideal way to ensure that a variety of quick and tasty home-made meals are available. Making date labelling on food products even clearer, and communicating what the two main date labels mean, could help parents in making decisions about when to eat rather than discard food, without compromising on safety. **Providing sound but reassuring advice for parents on food safety**, which relates to using leftovers, what food can be frozen and for how long and what dates mean, continues to be important to facilitating change.

Whilst **older people** waste less on average than other groups, there are areas where messages and innovations could help them reduce food waste further, particularly for fresh vegetables and salads, and food 'not used in time' more generally. Providing clear, evidence-based information on the benefits of food packaging for perishable foods which are not going to be used within a couple of days can help those who traditionally remove their food from its packaging at home<sup>20</sup>. Clear storage advice on-pack and highlighting in store when changes have been made to food packaging to improve its storage life would be beneficial.

<sup>19</sup> See: <http://england.lovefoodhatewaste.com/content/love-food-hate-waste-save-more-pack-run-sessions-your-community>

<sup>20</sup> See: <http://www.wrap.org.uk/fresherforlonger>

There is currently a significant gap between the average UK diet and recommendations for a healthy diet (e.g. the Eatwell plate). **Efforts to encourage and support people to make healthier choices need to be complemented by messages and initiatives to avoid the unintended consequences of a possible increase in food waste.** One example of this is the LFHW 'Eat well and waste less' guidance<sup>21</sup> which helps people to make the most of the good food that they buy.

One important area is efforts to increase fresh (and other) vegetable consumption by families (who currently buy less fresh vegetables than other types of household); these should be made in conjunction with support to ensure that extra purchases are consumed rather than wasted: good advice regarding storage location, use of packaging to prolong shelf life and inspiring and relevant recipes will be important, as will reinforcing that frozen and tinned vegetables also contribute to your '5-a-day'.

It is also important to ensure that, wherever possible, **communication with the public takes into account that different solutions are required to reduce food waste in different households.** For example:

- In households that have a lot of food that is not used before it goes off, focus may fall on planning (e.g. planning meals and making lists) and storage;
- Households in which too much food is served may focus more on meal times and serving the appropriate amount of foods for each individual in the household.

Every person and every household will have their own reasons as to why food is wasted in their home, which may change over time, and therefore a mix of advice, support and guidance is needed to address this. Whilst asking people to 'reduce food waste' is too broad a message, only focussing on one behaviour will not work for every person or household either. Helping people to identify why food is thrown away in their particular set of circumstances is therefore a key first step to allow them to pick solutions that will work for them.

It is important to take into account employment and other factors relating to **time constraints** in identifying the right tools and support to help people waste less. The majority of the population is in paid employment, and messages, engagement and innovations in products, packaging and labelling must be appropriate for those with busy lives and little time. Advice, support and tips which seek to help people reduce the amount of food and drink that is thrown away need to be grounded in the reality that some of the households producing the most waste afford a lower prioritisation to food-related activities due to competing pressures and time constraints. Therefore, solutions should, where possible, help households save time or, at the very least, be 'time neutral' and easy, for example:

- Making small simple changes in everyday behaviour, such as freezing leftovers to eat at a later date, thereby negating the need to cook for one meal in the future;
- Keeping apples in the fridge rather than the fruit bowl – it takes no longer to retrieve them, but they last much longer;
- The LFHW free App provides a simple way to check what food they have at home whilst in the supermarket, allowing people to squeeze a shop in between other activities and buy appropriate amounts of food;

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<sup>21</sup> See: <http://england.lovefoodhatewaste.com/content/eat-well-and-waste-less>

- Making sure that at least one night a week involves eating from the freezer so if plans change unexpectedly that meal can be carried over to the following week rather than fresh food being wasted – this can be much quicker than cooking from scratch.

'Fussy eating' is likely to be one of the more difficult causes of food waste to address, however, options to explore could include:

- A greater involvement of children and other household members in food planning, shopping and preparation to ensure the food and drink that is bought and prepared is accepted by more people in the household;
- Using a different approach to serving food; for instance, giving children and others the opportunity to serve themselves from central bowls rather than other people serving full meals on their behalf. This has the dual benefit of less plate waste after serving and also any leftovers are likely to be easier to use later;
- Cooking and freezing individual portions of meals to allow for a wider variety of choice at meal times, to suit different members of the household;
- Mixing the use of fresh, tinned and frozen fruit and vegetables can provide a wide variety of choice but lead to less waste being generated.

For those **people particularly concerned about the freshness of their food**, guidance can be given on how to maintain this freshness for longer, for example through better storage and in-home use of food packaging.

The link between home composters and avoidable food waste may be indirect (rather than causal), but could be linked to home composters being more likely to grow their own food and possibly valuing their food to a greater extent because of this. This untested proposition could be investigated to see if **increasing people's awareness of the journey of food** (e.g. via growing their own) does indeed reduce food waste. If this is the case, it could mean that grow-your-own projects in schools and other community groups would be a good opportunity to promote food-waste prevention.

These insights will help WRAP and its partners develop more effective ways to help people waste less food. The report shows that – due to the complexity of waste generation – messages, engagement and changes in products, packaging and labelling need to be developed with the specific needs of different groups in mind.

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## Dedication

This report is dedicated to Roy Page of Exodus Research, who was instrumental not only in this research but also in many key pieces of the research about UK household food waste. In particular, Roy's energy and dedication helped ensure that the ground-breaking research in 2007 and 2008 – *The Food We Waste* – had the impact it did and put household food and drink waste on the agenda in the UK. His presence in this field will be sadly missed.



**Roy Page**  
**6<sup>th</sup> February 1969 – 2<sup>nd</sup> February 2014**

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