Evaluating the impact of WRAP’s cascade training programme in England 2011/12.
WRAP’s vision is a world without waste, where resources are used sustainably.

We work with businesses, individuals and communities to help them reap the benefits of reducing waste, developing sustainable products and using resources in an efficient way.

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Executive summary

Introduction
Six Local Partnership Advisers (LPAs) have been working since April 2011 to promote food waste prevention and support the Love Food Hate Waste (LFHW) campaign. The LPAs specialise in ‘cascade training’, i.e. training groups of individuals who then pass this information on to others. The core approach involves a three hour ‘Trainer Support’ event (involving up to 30 attendees), although there are also shorter ‘Awareness Raising’ events.

Cascade training has a strong grounding in the literature and came to the fore with the publication of Malcolm Gladwell’s ‘The Tipping Point’ which explained how social trends spread through society like contagions, often driven by individuals called ‘mavens’ who have specialist knowledge. Cristakis & Fowler’s work has likewise shown that the spread of influence in social networks often obeys a ‘three degrees of influence’ rule – i.e. everything we say or do tends to ripple through our network, having an impact on our friends (one degree), friends’ friends (two degrees) and our friends’ friends’ friends (three degrees).

Given the potential confusion in describing who is cascading and being cascaded to (e.g. volunteers, volunteers’ contacts, volunteers’ contacts’ contacts), the report adopts a ‘common language’ for describing the different levels of cascading, as follows:

- **Cascade Level 0** – pre-cascade, referring to the workshop volunteers themselves.
- **Cascade Level 1** – the first tier of cascading, referring to volunteers’ contacts.
- **Cascade Level 2** – the second tier of cascading, referring to Level 1s’ contacts.

Methodology
The cascade training model does not lend itself to traditional methods of evaluation and so a more reflective and formative methodology was adopted (using, in particular, a qualitative ‘snowballing’ method to follow and map the path of a cascade from person to person).

The evaluation was focused on 10 events (seven ‘Trainer Support’ and three ‘Awareness Raising’), with audiences that ranged from the employees of large commercial organisations to recycling officers in a local authority. It involved a mixed methods approach:

- **Phase 1**: Observation of the 10 events.
- **Phase 2**: Discussions with the event organisers and with LPAs to understand their reflections on the approach and its perceived strengths and weaknesses.
- **Phase 3**: Research with workshop volunteers (Level 0s):
  - a post-workshop survey of 116 volunteers;
  - in-home depth interviews with 20 volunteers (two per workshop);
  - a follow up survey three months on (56 respondents from the original 116); and
  - a follow up in-home interview, three months on, with 18 of the original 20 volunteers.
- **Phase 4**: Interim analysis and report.

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Phase 5: Research with primary recipients of the cascade – qualitative telephone discussions with 40 Level 1s who had received cascades from volunteers (two interviews per volunteer).

Phase 6: Research with secondary recipients of the cascade - qualitative telephone discussions with 40 Level 2s who had received cascades from Level 1s.

Engaging Level 1 and 2 interviewees was very challenging and Data Protection constraints proved to be a significant barrier. As a result, only 18 interviews with Level 1s were conducted (out of 40) and no interviews were conducted with Level 2s (out of 40).

The evaluation was designed to be formative and support the new programme. Therefore, it was targeted at some of the first training events. This has two implications: some of the issues raised by the Interim Report may already have been addressed by WRAP as they refine their approaches (and indeed WRAP report that this is the case); and the analysis that follows is grounded in the 10 workshops and should not, therefore, be used to derive estimates of the programme’s on-going impacts.

Key findings

Volunteers’ cascade behaviour

Almost all volunteers (93%) cascaded LFHW information to others, most commonly family and friends (to which 91% cascaded) and work colleagues (75%). Fewer cascaded to the wider community (36%), which was at least in part a function of the time of year (i.e. with reduced opportunities to engage such groups during the winter months).

The number of cascades: Level 0 -> Level 1

Workshop volunteers were asked how many people they planned to cascade to (post-session survey) and how many they did cascade to (follow up survey). The research only has information on the latter for the 56 volunteers who responded to the follow up survey. Therefore, three different calculation methods were undertaken for the total and average number of cascades that, between them, provide a credible range of estimates (Table ES 1).

These show that, irrespective of calculation method, a large number of cascades were generated.

Table ES 1 – Number of cascades from Level 0s to Level 1s

<table>
<thead>
<tr>
<th>Estimate</th>
<th>Underlying assumption</th>
<th>Total number of cascades</th>
<th>Average number of cascades per volunteer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (upper estimate):</td>
<td>Assume that the 60 non-respondents to the follow up survey cascaded to the same extent as the 56 respondents.</td>
<td>4,445</td>
<td>38/volunteer</td>
</tr>
<tr>
<td>2 (lower estimate)</td>
<td>Assume that none of the non-respondents cascaded at all.</td>
<td>1,871</td>
<td>16/volunteer</td>
</tr>
<tr>
<td>3 (adjusted upper estimate)</td>
<td>Calculate – for the 56 respondents - the difference between their predicted and actual cascade behaviour (i.e. the ‘attrition rate’), and apply this to the none-respondents’ predicted cascades. The attrition rate was 18% (i.e. there were 18% fewer cascades than predicted post workshop).</td>
<td>4,299</td>
<td>37/volunteer</td>
</tr>
</tbody>
</table>
Cascading varied across the 10 workshops, with one group generating an average of 116 cascades per volunteer compared to another which generated 12 per volunteer. Furthermore, most of the workshops contained a small sub-group who cascaded to a very high number of people (‘super cascaders’); and the majority who cascaded to a similar (and lower) number of people as each other. For example, a volunteer in one group cascaded to 237 people, whereas another volunteer from the same group volunteered to just three.

The number of cascades: Level 1 -> Level 2
The 18 qualitative interviews with Level 1s suggest that they went on to communicate LFHW information to an average of 2.2 family and friends. If we were to assume that these 18 Level 1s are representative of all Level 1s then this would imply 2,245 – 5,334 additional cascades (based on the lower and upper estimates, respectively) and 4,116 - 9,779 cascades in total (Table ES 2).

**Table ES 2 – Number of cascades from Level 1s to Level 2s**

<table>
<thead>
<tr>
<th>Total Number of cascades: Level 0 → Level 1</th>
<th>Average number of cascades per Level 1 (*based on 18 interviews)</th>
<th>Estimated additional cascades Level 1 → Level 2</th>
<th>Total number of cascades Level 0 → Level 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate 1 (upper estimate):</td>
<td>4,445</td>
<td>2.2</td>
<td>5,334</td>
</tr>
<tr>
<td>Estimate 2 (lower estimate)</td>
<td>1,871</td>
<td>2.2</td>
<td>2,245</td>
</tr>
<tr>
<td>Estimate 3 (adjusted upper estimate)</td>
<td>4,299</td>
<td>2.2</td>
<td>5,159</td>
</tr>
</tbody>
</table>

How many more cascades?
The evaluation suggests that volunteers will continue to cascade. This data is indicative (since we cannot be sure that all of the cascades will happen) and we therefore resist the temptation to add these cascades to the above total. Nonetheless, it suggests they plan to undertake between 2,141 (lower estimate) and 5,087 (upper estimate) ‘future cascades’ (Table ES 3). Almost half of the planned cascades are to the wider community (previously restricted in winter) whereas predicted cascades to family, friends and work colleagues are more modest.

**Table ES 3 – Estimated future cascades from Level 0s to Level 1s**

<table>
<thead>
<tr>
<th>Underlying assumption</th>
<th>Estimated number of future cascades</th>
<th>Average number of future cascades per volunteer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Estimate 1 (upper estimate):</strong></td>
<td>Assume that the 60 non-respondents to the follow up survey also plan to continue cascading to the same extent as the 56 respondents.</td>
<td>5,087</td>
</tr>
<tr>
<td><strong>Estimate 2 (lower estimate):</strong></td>
<td>Assume that none of the non-respondents plan to continue cascading at all.</td>
<td>2,141</td>
</tr>
<tr>
<td><strong>Estimate 3 (adjusted upper estimate):</strong></td>
<td>Assume that the 60 non-respondents to the follow up survey also plan to continue cascading to the same extent as the 56 respondents but – for all volunteers – there will be an attrition rate of 18%.</td>
<td>4,172</td>
</tr>
</tbody>
</table>

3 This must be acknowledged to be a guestimate based on the available evidence, not a robust estimate.
The nature of cascades
The majority of cascades were informal (i.e. passed on spontaneously in conversation). This often happened in the kitchen, around food and in very practical situations where talking about LFHW ‘made sense’. Formal cascades also took place but were undertaken by a smaller proportion of volunteers, and there was a notable gap between intention to cascade formally and actually doing so (which was likely in part a function of the time of year).

The quality of the cascades
Volunteers were adept at understanding what might motivate uptake of LFHW messages (e.g. whether to use an environmental theme or not) and the cascades collectively had good coverage across LFHW topics (even though any single cascade often focused on a very specific piece of information). However, the follow up interviews highlighted that interviewees tended to have better recall of LFHW ‘tips’ that had been novel for them at the training, which suggests that the quality of the cascades might weaken with time.

Conditions for cascading
The research suggests that the likelihood of cascading is governed by three main influences which, together, form a short hand rule L=IPS:

- **Individuals’ characteristics** – their confidence, personal traits, interest in LFHW, etc.
- **Pathways / channels** – the means for them to cascade through their networks.
- **Support** – the nature of the training and the support for volunteers post-workshop.

\[ \text{Likelihood of cascading} = \text{Individual characteristics} \times \text{Pathways} \times \text{Support} \]

One of the most significant findings from the research is the importance of the pathways condition for cascading. Cascades were much more likely among volunteers who had a diverse and wide range of contacts and where they had a clear reason to pass LFHW information on to others (e.g. a specific responsibility at work to promote environmental issues).

The support needs of volunteers are also important, from pre-course information through to post-training guidance and materials. The research demonstrated a number of areas where the cascade training could be strengthened:

- **Pre-course**: a significant number of volunteers came to the workshop without a firm idea of what it entailed (or the objective of triggering cascades to others).

- **The training itself**: the workshops performed well on a number of criteria (e.g. interest, usefulness) and, overall, close to two in three (66%) said that the session exceeded their expectations. Some interviewees felt that the awareness raising workshops were too short, and a few felt that more could be done to tailor the course to the specific organisation. The main point raised was the need for more emphasis on cascading, including more time to brainstorm together and formulate personal/group action plans.

- **Post training support**: there were relatively few structures to support volunteers post-training and, in particular, not enough coordination with the event organiser (i.e. the person the LPA

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4 Following on from the Interim Report WRAP report that many of these have been addressed in subsequent workshops (although it is not within the scope of this evaluation to verify and assess the success of any changes made after the first 10 events).
had liaised with). There was demand for more support post-workshop, including physical materials to pass on, more resources to take away from the training session, follow up support from the event organiser and more LFHW tips.

**Behaviour change**
The research identified changes in the behaviour of both the workshop volunteers and their Level 1 contacts. The changes reported by volunteers (in response to the fact they had intensive training) were significant. For example, 46% of volunteers in the follow-up survey said they had ‘significantly changed’ their food storage practices and 39% reported likewise in terms of their food portioning. In contrast, the changes among Level 1s related to specific practices (in some cases reinforcing existing practices; in others creating new practices). In keeping with the findings from the evaluation of Zero Waste Scotland’s Volunteer Programme, changes in behaviour tended to be incremental rather than transformational.

**Conclusions and recommendations**
The LFHW cascade training programme is a ‘live’ example of a diffusion project using a form of pro-environmental ‘maven’ (or, more accurately, individuals with ‘maven-like attributes’). It involves the identification of specific catalytic individuals; persuading them of the benefits of the LFHW behaviours; providing them with tailored support material; and then allowing them the freedom to “do what they do”. The interviewees stressed that they must believe in something and have enough knowledge about it in order to influence others.

The research demonstrates that the 10 cascade training events did successfully trigger cascades. Our most conservative ‘worst case’ estimate is that the volunteers generated 1,871 cascades in the three months following on from the workshop, a figure that could be as high as 4,445. These initial cascades will themselves be supplemented by onward cascades (from Level 1s to Level 2s) and the volunteers themselves continuing to cascade.

The evidence suggests that the bulk of the cascades take place between volunteers and Level 1s, with a significant drop off thereafter (i.e. between Level 1s and 2s). However, we speculate that this may have changed now that WRAP have strengthened the focus on cascading which might mean that cascades survive and propagate further into networks.

The research has identified the existence of ‘super cascaders’, i.e. a small subset of volunteers, apparent across most of the events, whose cascade behaviour is significantly above average. While the research is not able to take a view on the quality of their cascades (i.e. how, and in what ways, is a cascade targeted at 100+ people different from a personal conversation targeted at one person?), in terms of potential reach this group is interesting.

There was considerable variation in cascades across the workshops. Some groups appear to have been well suited to a cascade-based model, in terms of their skills sets, their connectivity in social and professional networks and, by extension, the channels they have at their disposal to cascade through. Others appear less well positioned to undertake cascades.

There is a balance to be struck between informal and formal cascades. We judge that more emphasis should be placed on formal cascades than was seen in the first 10 events, and that this form of cascading would increase the reach of LFHW cascades. However, there are likewise risks in trying to prescribe what volunteers should do. Catalytic individuals tend to be creative, thoughtful and idiosyncratic, which means they do not respond well to being told what to do,

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nor do they typically simply replicate or pass on an innovation; rather, they use their own judgment to adapt and modify it to suit their circumstances and the people they wish to help. That is, to a large extent, the strength of the approach.

Nor do we wish to imply that informal cascades are any less valuable. While they may have less overall reach, they are ideally placed to deliver LFHW messages in a very particular context, i.e. specific tips that are delivered in situ (i.e. the ‘private space’ of kitchen), at the right time (i.e. a practical food setting) and by a trusted messenger (i.e. ‘someone like them’). It is not simply the face-to-face nature of the contact that is critical, but the fact that it is face-to-face engagement with information that is highly personalised and grounded in a very specific context. It is a channel of communication that traditional campaigns cannot hope to access.

We judge that the cascade training model has succeeded (on the basis of the number and quality of cascades) and is a complementary strategy to deliver LFHW messages.
1.0 Introduction

This report outlines the key findings from research, undertaken by Brook Lyndhurst, to evaluate WRAP’s ‘cascade training’ programme in England 2011/12.

1.1 Background, aims and objectives

WRAP has an established track record of deploying advisers to work alongside local partners to support the development of waste reduction and recycling campaigns (e.g. its Home Composting Advisers and Waste Reduction Advisers). Since April 2011, a mobile team of six Local Partnership Advisers (LPAs) have been working with a range of organisations and local groups to support food waste prevention and the Love Food Hate Waste (LFHW) campaign.

The LPAs specialise in ‘cascade training’, i.e. training groups of individuals who it is hoped will then pass this information on to others, spreading LFHW messages among friends, family, work colleagues and any community groups/events they are part of. It is then hoped that these people will, in turn, pass messages on to their own contacts (and so on). The core approach of WRAP’s cascade training programme involves a three hour ‘Trainer Support’ event, with up to 30 attendees and involving four basic stages:

1. Secure the commitment of an organisation.
2. The organisation then recruits volunteers from its own employees/membership for training and designates an event organiser to liaise with the LPA.
3. The volunteers attend an interactive training workshop run by an LPA, in which they:
   - learn about the significance of food waste and its causes and consequences;
   - understand their organisation’s commitment to LFHW and what others in the supply chain are doing about food waste;
   - understand the key messages and practical tips around food waste;
   - providing simple solutions and tips to help people to change their behaviour; and
   - be confident in cascading this knowledge to others.
4. Volunteers are then in a position pass the information on to people in their personal or professional networks, and receive on-going support.

If organisations are unable to accommodate the full ‘Trainer Support’ event, WRAP are able to deliver shorter variants that are collectively referred to as ‘Awareness Raising’ events. These act as introductory/taster sessions, and last anywhere between 45 – 120 minutes (at times blurring the lines between awareness raising and formal trainer events).

A cascade, in the context of this study, is when information from the training workshops is passed from one person to another. This can be by any means of communication (conversations, formal presentation, email, etc.) and it does not distinguish detailed, comprehensive and/or planned presentations of LFHW information from spontaneous and/or single mentions of LFHW messages or advice (e.g. in passing conversation).

Given the potential confusion in describing who is cascading and being cascaded to the report adopts a ‘common language’ for describing the different levels of cascading, as follows:

- **Cascade Level 0** – pre-cascade, referring to the workshop volunteers themselves.
- **Cascade Level 1** – the first tier of cascading, referring to volunteers’ contacts.
- **Cascade Level 2** – the second tier of cascading, referring to Level 1s’ contacts.

1.2 Understanding pro-environmental diffusion

While relatively new in social policy circles, the premise of cascade training has a strong grounding in the literature. The spread of ideas and behaviours, or more simply put ‘how one thing leads to another’, is a key topic of interest in relation to achieving pro-
environmental behaviour change. It offers a perspective on how knowledge, skills, attitudes and behaviours can all be transmitted – or ‘diffused’ - across social or professional networks.

The success of the diffusion process is linked to specific individuals which the literature terms ‘mavens’. The term ‘market maven’ was introduced by the researchers Feick & Price in 1987\(^6\) who formalised the idea of a maven as “an individual who has information about many kinds of products, places to shop, and other facets of markets, and initiates discussions with consumers and responds to requests from consumers for market information.”

Their work became widely used in marketing literature over the following years and it was not until the publication of Malcolm Gladwell’s ‘The Tipping Point’\(^7\) that the concept became particularly interesting in the context of social policy. In it, Gladwell explained how social trends spread through society like contagions. Instrumental to the spread of these contagions, he argued, are three particular kinds of individual:

- **Connectors** – individuals with lots of social contacts;
- **Salesmen** – people with persuasive skills; and
- **Mavens** – people with specialist expertise and knowledge.

Cristakis & Fowler’s\(^8\) work on the process of ‘social contagion’ has shown that the spread of influence in social networks often obeys a ‘three degrees of influence’ rule – i.e. everything we say or do tends to ripple through our network, having an impact on our friends (one degree), friends’ friends (two degrees) and our friends’ friends’ friends (three degrees).

Christakis & Fowler’s work identifies this process at work across a number of different areas, including obesity, happiness and smoking behaviour.

The literature points to the importance of peer-to-peer information, given that people tend to turn for information to individuals of the same background, interest and values. The flow of information and influence is likely to be horizontal across groups as opposed to vertical (i.e. from individuals who are considered to be from ‘different walks of life’). In short, people are most likely to be influenced by people ‘like them’.

In Brook Lyndhurst’s own review of the literature on both the process of diffusion and the specific role of mavens\(^9\), we found no other work directly relating to “pro-environmental mavens” and also very little on the diffusion of pro-environmental behaviours. Two of our key conclusions were (1) that “catalytic individuals” exist, can be found and have the potential to play an important role in the diffusion of pro-environmental behaviours; and (2) there is a need to test the approach in a real world setting.

This is the context within which WRAP’s cascade training model is operating.

### 1.3 Methodology

The evaluation methodology was heavily influenced by the innovative and evolutionary nature of the cascade training, and also because the strength of the initiative (i.e. the diffusion of information by people in the context of their daily lives and routines) does not lend itself to traditional methods of evaluation and attribution - particularly so in relation to the behaviours associated with LFHW which involve largely unconscious routines and habits.

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\(^7\) The Tipping Point: How Little Things Can Make a Big Difference, Malcolm Gladwell (2000)

\(^8\) Connected: the power of social networks and how they shape our lives. Christakis and Fowler (2010)

Therefore, the research team and WRAP took the view that such a model is ill-suited to a rigid, data-driven and targets-based evaluation. Instead, a more reflective and formative methodology is required, involving a mixed methods approach. There is a role for quantitative surveys, especially in relation to the immediate workshop volunteers. However, and to follow and map the path of the cascade through the network, there is also a need for innovative qualitative methods that involve ‘snowballing’ from one contact to another. Qualitative methods are essential to understand not only the total number of cascades, but also the nature of the cascade, the quality of the cascade and the cascaders themselves (i.e. their attributes and their connectivity within their social and professional networks).

The evaluation focused on 10 workshop events, seven of which were full ‘trainer support’ events and three of which were ‘awareness raising’ variants. These events were diverse in terms of the target audience (Table 1), ranging from the employees of large commercial organisations (e.g. a national retailer) to recycling officers in a local authority and members of the public acting as waste action volunteers. This necessitated a ‘case study’ approach for each individual event.

Table 1 – LFHW cascade training events incorporated in the evaluation

<table>
<thead>
<tr>
<th>Event type</th>
<th>Date</th>
<th>Attendees</th>
<th>Number of attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>29th September, 2011</td>
<td>Local Authority recycling/waste officers</td>
<td>7</td>
</tr>
<tr>
<td>Awareness (x2)</td>
<td>29th September, 2011</td>
<td>Community Group club organisers</td>
<td>12 &amp; 10</td>
</tr>
<tr>
<td>Training</td>
<td>13th October, 2011</td>
<td>Family support workers</td>
<td>c. 25</td>
</tr>
<tr>
<td>Training</td>
<td>17th October, 2011</td>
<td>National Retailer’s staff</td>
<td>17</td>
</tr>
<tr>
<td>Training</td>
<td>20th October, 2011</td>
<td>National Retailer’s staff</td>
<td>14</td>
</tr>
<tr>
<td>Training</td>
<td>20th October, 2011</td>
<td>National Retailer’s staff</td>
<td>11</td>
</tr>
<tr>
<td>Awareness</td>
<td>21st October, 2011</td>
<td>School parents</td>
<td>5</td>
</tr>
<tr>
<td>Training</td>
<td>26th October, 2011</td>
<td>Community volunteers/adult education workers</td>
<td>14</td>
</tr>
<tr>
<td>Awareness (x2)</td>
<td>1st November, 2011</td>
<td>Large commercial organisation’s staff</td>
<td>c.12 &amp; 12</td>
</tr>
<tr>
<td>Training</td>
<td>12th November, 2011</td>
<td>Waste Action Volunteers</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total = c.147</strong></td>
<td></td>
</tr>
</tbody>
</table>

The evaluation methodology was designed to comprise – across six phases - a mix of observation alongside quantitative and qualitative data gathering methods:

- **Phase 1:** Observation of the 10 workshops.
- **Phase 2:** Discussions with the event organisers and with LPAs, to understand their reflections on the training sessions and the perceived strengths and weaknesses of the approach.
- **Phase 3:** Research with workshop volunteers (i.e. Cascade Level 0)
  - Questionnaire at the end of the workshop, incentivised by a prize draw of 3 x £100 Marks & Spencer Vouchers;
  - In-home depth interviews (1 hour) with 2 volunteers per workshop (20 in total) immediately following on from the workshop (with a £25 cash ‘thank you’ for taking part);
Follow up questionnaire three months later, incentivised again by a prize draw of 3 x £100 Marks & Spencer vouchers;
In-home depth interviews (1-1.5 hours) with the same 20 volunteers three months later (with a £50 cash ‘thank you’ for taking part).

Phase 4: Interim Report and progress meeting with WRAP.
Phase 5: Research with Cascade Level 1 - qualitative telephone discussions with 40 Level 1s who had received cascades from volunteers (two interviews per volunteer).
Phase 6: Research with Cascade Level 2 - qualitative telephone discussions with 40 Level 2s who had received cascades from Level 1s (one interview per Level 1).

This allowed the research team to follow the cascade process from the LPA trainer through to several tiers of cascading, as set out in Figure 1.

Figure 1 – Overview of the methodology for tracking cascades from the LFHW workshops

Many aspects of the methodology worked well. For example, 116 out of approximately 147 workshop volunteers completed a post-event questionnaire (a response rate of 79%) and, of these, 56 completed the follow up survey (representing a very credible response rate of 48%). Furthermore, the two rounds of in-home depth interviews (undertaken with 20 volunteers initially and then 18 at follow up) provided a number of extremely useful insights about both the training and the experience of cascading LFHW information to others (particularly the network mapping task where interviewees had to map out, on an A3 piece of paper, their social and professional networks and identify who they did – and did not – choose to cascade to within these networks).

However, and reflecting the innovating nature of the ‘snowballing’ method, engaging Level 1 and 2 interviews was very challenging, and Data Protection constraints proved to be a significant barrier. The research team initially trialled an approach whereby each of the interviewees passed on a consent/re-contact postcard to a selection of their Level 1s, with the onus on the Level 1 to then contact the research team and arrange a time for interview. Given the low amount of success using this approach, the research team reverted to accepting verbal consent from the workshop volunteer on behalf of their Level 1 contact, which led to more success. These issues were even more acute in engaging Level 2s. As a
result, only 18 interviews with Level 1s were conducted (out of the target of 40) and no interviews were conducted with Level 2s (also out of a target of 40).

In addition, one of the most pressing methodological risks was that the evaluation approach itself would influence the cascade behaviour of volunteers (by virtue of the fact that they knew they were part of this study and hence had an incentive, or reminder, to cascade). The two-stage interview process (once immediately following on from the workshop and again three months later) was an attempt to minimise this risk, as opposed to using continuous monitoring (e.g. weekly cascade diaries).

In addition, the research team did not alert the volunteers taking part in the in-depth interviews - until the very end of the second interview - that they would be asked to provide contact details for Level 1s (even though this may well have made the process of obtaining Level 1 contacts easier).

The evaluation team have also fed back separately to WRAP about their reflections on the methodology and how it could usefully be modified in future projects involving cascades.

1.4 Interpreting the findings
As with any report, the findings that follow in Chapters 2 – 4 are subject to a series of caveats, as follows:

- **Interpreting the quantitative data with a degree of caution** - even though the response rates were strong, the sample sizes (116 and 56) are still relatively small. This is particularly true when exploring trends within the sample such as how results vary across the events (where sample sizes drop to as low as four or five volunteers).

- **The formative nature of the evaluation** – the evaluation was designed to be formative (i.e. assessing initial processes and impacts at the beginning) rather than summative. Cascade training is a new and innovative initiative and so, with the aim of supporting both it and the team, the evaluation was deliberately targeted at some of the very first workshops, and the Interim Report (Phase 4) was positioned to give feedback at the earliest opportunity. This has two critical implications for the analysis:
  - Some of the issues raised in the Interim Report may already have been addressed by WRAP (or as they have naturally sought to hone their approaches and delivery style). While this final report seeks to be as ‘up to date’ as it possibly can, it does not necessarily reflect the current state of practice.
  - The calculations that follow regarding the number of cascades, as well as the reflections about the nature and quality of the cascade, are based on 10 workshops. Therefore, the calculations that follow should not be applied to the ongoing work. Further research would be required.

- **Seasonal impacts** – the research team attended workshops in October/November and followed up volunteers in February. This means that the evaluation was naturally confined to those cascade activities undertaken during the winter months, which may have restricted certain kinds of cascades (e.g. community events, which typically take place in the spring and summer months), whereas it may likewise have increased other kind of interactions (e.g. with close family and friends over the Christmas period). These issues were known to the research team and WRAP, and were accepted as a necessary and inevitable part of the formative nature of the evaluation.

- **Skew towards particular audiences** – there is a notable skew across the 10 case studies towards the employees of commercial organisations (including three groups with the
retailers employees), which therefore have a strong weighting in the overall findings for the 10 workshops as a whole. Furthermore, the volunteers from these retailers’ events were hindered in their cascade efforts because the organisation had not established, at that time, its own corporate line on LFHW.

Throughout the report we also include – where relevant – reference to a parallel project that has been undertaken by Brook Lyndhurst on behalf of Zero Waste Scotland to evaluate Zero Waste Scotland’s volunteer programme. Both programmes are built upon the successes of previous volunteer schemes (e.g. Zero Waste Scotland’s Master Composter and WRAP’s Waste Reduction Advisors), but the logic behind them is somewhat different. The specific aim of the Programme is to ‘cascade’ waste reduction and avoidance messages through social and professional networks, whereas Zero Waste Scotland’s Volunteer Programme seeks to deliver messages through volunteers, via one-off engagements with members of the public.

1.5 Structure of this report
The report is structured around four chapters:

- This introductory chapter (Section 1);
- A section exploring cascades: their number, type, quality and longevity (Section 2);
- A section exploring the conditions for cascading (Section 3);
- Impacts on behaviour (Section 4); and
- Conclusions and recommendations (Section 5)

Appendix 1 summarises each of the 10 events and participation rates in the research. Short case studies for each of the events are available under separate cover.

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2.0 Cascading: number, type, quality
This section of the report explores the central premise of cascading: whether or not workshop volunteers (i.e. Level 0s) cascaded; to whom; how many cascades they generated; and to what end?

2.1 Did volunteers cascade, and to whom?
Almost all of the 56 respondents to the follow up survey (93%) reported that they cascaded LFHW information to others. Figure 2 demonstrates that the main target audiences were family and friends (to which 91% cascaded) and work colleagues (75%). Fewer cascaded to the wider community (36%) or to ‘other’ audiences\(^{11}\) (20%).

This pattern was repeated among the 18 follow up volunteer depth interviewees – all had conversations about LFHW with their family and friends but fewer cascaded into the wider community (i.e. local sports or community groups). This is in part explained by some interviewees having less ‘connectivity’ into local groups (covered in more detail in Section 3.2) and in part by the time of year (i.e. with reduced opportunities to engage such groups during the winter months). Indeed, some of the volunteers still have plans to cascade at events in the spring and summer.

**Figure 2** – The audiences to which workshop volunteers went on to cascade (Level 0 to Level 1)\(^{12}\). (Base: 56 workshop volunteers who responded to the follow up survey)

2.2 How many cascades: Level 0 -> Level 1
Workshop volunteers were asked in the two surveys how many people they planned to cascade to (post-session survey) and how many they did cascade to (follow up survey). In both cases the total numbers of cascades was recorded according to a question based on intervals, not absolute numbers. So, for example, respondents were asked to say – for different audiences - whether they planned to/had cascaded to 0 people, 1-5 people, 6-9

\(^{11}\) ‘Other’ audiences mostly included audiences engaged by attendees through the course of their work (e.g. children and young people), but not their immediate colleagues or peers.

\(^{12}\) Q. Since the workshop, how many people, if any, do you think you have communicated information about Love Food Hate Waste (LFHW) to? [NB. this question, although asking about numbers, was used to determine who volunteers had cascaded to since they were asked to state how many people they had cascaded to in each of the four audiences outlined in the chart]
people and so on, up until a maximum category (which was 50+ in the first survey and 100+ in the follow up survey). As a result, the figures outlined below represent a range (a lower estimate and an upper estimate), alongside a mid-point average.

It is also important to note that the research only has information on actual cascades from the 56 volunteers who responded to the follow up survey. By contrast, there were 60 volunteers who completed the initial questionnaire but did not complete the follow up survey, and so for this group the research only has information about their predicted cascades. Because there is no means of verifying whether the respondents to the follow up survey are ‘different’ to the non-respondents (i.e. they self-selected themselves because they had cascaded more), we present three different methods for calculating the total and average number of cascades that, between them, provide a credible range of estimates (including a lower and upper estimate):

- **Estimate 1 (upper estimate): assume that the 60 non-respondents to follow up survey cascaded to the same extent as the 56 respondents.** The follow up survey demonstrates that respondents cascaded to between 1,871 (lower estimate) and 2,421 (upper estimate) people, with a mid-point estimate of 2,146. The average number of cascades (calculated by dividing the mid-point estimate by the 56 survey respondents) equates to 38/respondent (to the nearest whole respondent). If applied to all 116 workshop volunteers this would mean that each volunteer went on to cascade LFHW information to 38 people within 3 months of the workshop, generating 4,445 cascades.

- **Estimate 2 (lower estimate): assume that none of the non-respondents undertook any cascades whatsoever.** Rather than dividing the mid-point estimate by the 56 respondents to the survey, this approach involves dividing the lower estimate for the total number of cascades (i.e. 1,871) by all 116 workshop volunteers. This produces the most conservative estimate, and equates to an average 16 cascades per volunteer.

- **Estimate 3 (adjusted upper estimate): calculate – for the 56 respondents to the follow up survey - the difference between their predicted cascade behaviour and their actual cascade behaviour (i.e. the ‘attrition rate’), and then apply this to the predicted cascades of the non-respondents.** The 56 respondents to the follow up survey cascaded – after 3 months - to 2,146 people (mid-point estimate), which was 18% lower than they had initially predicted. Assuming the same differential among volunteers who did not respond to the follow up survey, this implies that they collectively cascaded to an additional 2,153 people. This calculation suggests that workshop volunteers cascaded to 4,299 people with an average cascade rate of 37 per volunteer.

The three calculations imply a range in the average number of cascades, from 16/volunteer to 38/volunteer. However, and irrespective of the calculation method, the research suggests that the 10 workshops collectively led to a large number of cascades to Level 1s.

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13 For example, if a respondent indicated in the survey that they had cascaded to 1-5 people then the lower estimate is 1; the upper estimate is 5 and the mid-point average is 2.5. These figures were then collectively added together for all 56 respondents to produce this range and mid-point estimate.

14 This average of 37 per volunteer is not 18% less than the upper estimate (i.e. 38 per volunteer) because the figures from follow up survey non-respondents have been added into the equation. Even with the 18% ‘attrition rate’ adjustments, the follow up survey non-respondents had predicted in the post workshop survey that they would cascade to more people than follow up survey respondents had predicted.
There are some interesting variations according to the different target audiences (Figure 3). For example, and even though it was the most common form, the cascades to family and friends led to a relatively modest overall number of cascades. This is because, despite being undertaken by virtually all volunteers, the ‘pool’ of potential targets is limited in number. Across the 10 case studies, cascades to family/friends led to 287-497 cascades (mid-point: 388). In contrast, far fewer volunteers cascaded to the wider community (39%) but, given the larger pool of people to cascade to, this form of cascading led to a higher number of cascades overall (674-744; mid-point: 709). In terms of sheer numbers this method leads to the most cascades, alongside work-based cascades (592-797; mid-point: 695).

**Figure 3** – Total number of cascades, by target audience (Level 0 to Level 1). (Base: 56 workshop volunteers who responded to the follow up survey).

Table 2 demonstrates that the number of cascades also varied across the 10 workshops (at least based on those who responded to the survey) – from the Community Group sessions (average: 116 cascades/volunteer) to Retailer group (12 cascades/volunteer).

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15 Q. Since the workshop, how many people, if any, do you think you have communicated information about Love Food Hate Waste (LFHW) to?
Evaluating the impact of cascade training

Table 2 – Number of cascades by case study

<table>
<thead>
<tr>
<th>Average number of people cascaded to per group volunteer</th>
<th>Lowest number cascaded to by an individual volunteer within the group</th>
<th>Highest number cascaded to by an individual volunteer within the group</th>
</tr>
</thead>
<tbody>
<tr>
<td>116</td>
<td>3</td>
<td>237</td>
</tr>
<tr>
<td>55</td>
<td>0</td>
<td>120</td>
</tr>
<tr>
<td>48</td>
<td>6</td>
<td>103</td>
</tr>
<tr>
<td>34</td>
<td>6</td>
<td>109</td>
</tr>
<tr>
<td>31</td>
<td>0</td>
<td>111</td>
</tr>
<tr>
<td>20</td>
<td>9</td>
<td>37</td>
</tr>
<tr>
<td>19</td>
<td>14</td>
<td>27</td>
</tr>
<tr>
<td>13</td>
<td>0</td>
<td>72</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>15</td>
</tr>
</tbody>
</table>

* NB. Brackley excluded due to follow up survey response rate of two.

Although the average implies a consistent level of cascades across volunteers, the data suggests that groups were in fact characterised by two subgroups: a small number of one or two volunteers who cascaded to a very high number of people; and the majority who cascaded to a similar (and lower) number of people as each other. Indeed, the average number of cascades is skewed by one or two 'super cascaders'. For example, in Leicester one volunteer cascaded to 237 people whereas another cascaded to just 3. This is consistent with the results from the post-event survey, with a few volunteers predicting that they would cascade to a very high number of people while others predicted much lower levels.

While these volunteers do skew the average (which drops substantially when they are removed from the calculation), they are present across most of the case studies. Therefore, it appears that the presence of one or more super cascaders is a typical feature of a group.

2.3 How many more cascades: Level 0 -> Level 1

The calculations in Section 2.2 (above) cover cascades in the three months after the workshops. However, both the follow up survey and the in-home depth interviews with volunteers suggest that they will continue to cascade. The calculations that follow are indicative only, since we cannot be sure that all of the cascades will happen (particularly in light of the known drop off in planned → actual cascades in the first 3 months of 18%). They are nonetheless, interesting, particularly in terms of the types of cascades that may still happen.

The follow on survey suggests that continued cascading is likely, with the 56 respondents planning to cascade to between 2,141 – 2,771 people in the next 9 months, with a mid-point average of 2,456. Adopting the same three calculations as per Section 2.2, this gives a potential range for all 116 volunteers of 2,141 (lower estimate) – 5,087 (upper estimate), with an average number of future cascades of between 18-44/volunteer. The adjusted upper estimate (i.e. assuming an 18% drop off between planned and actual cascades) would imply 4,172 ‘future cascades’ (average: 36 cascades/volunteer).

Almost half of these cascades are likely to come from community-based cascades (which were restricted during the winter months), whereas predicted cascades to family and friends and work colleagues are more modest (Figure 4).
2.4 How many cascades: Level 1 -> Level 2

The 18 qualitative interviews with Level 1s suggest that they went on to communicate LFHW information to an average of 2.2 family and friends. If we were to assume that these 18 Level 1s are representative of all Level 1s (i.e. all of the people that all 116 workshop volunteers cascaded to) then this would imply an additional 2,245 – 5,334 cascades (based on the lower estimate 2 and upper estimate 1, respectively) and a new total number of cascades ranging from 4,116 - 9,77917.

2.5 The nature of the cascade

The nature and context of the cascade are important, particularly since WRAP are working with different organisations and audiences. This research has made a distinction between planned (or ‘formal’) cascades and unplanned (‘informal’) cascades. Formal cascades include giving presentations, giving out information at events, and publishing information. Informal cascades, on the other hand, usually involve information from the training workshops coming up spontaneously in conversation.

The follow up survey of workshop volunteers (i.e. Level 0s) suggests that the majority of cascades took place in an informal setting (Figure 5). For example, the most frequently cited type of cascade involved informal discussions with family and friends (89%), informal discussions at work (73%) and informal discussions in the wider community (42%). Formal cascades also took place but were undertaken by a small proportion of workshop volunteers. Activities included educating children/young people (15%), running a stall at a local event (14%) and writing a newsletter (12%). Very few undertook any kind of formal presentation, either to a community group (2%) or at work (2%).

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16 Q. Looking forward, how many more people, if any, do you expect to communicate LFHW to in the next 9 months?

17 This must be acknowledged to be a guestimate based on the available evidence, not a robust estimate.
Figure 5 – The nature of the cascade (Level 0 to Level 1). (Base: 52 workshop volunteers who responded to the follow up survey and had gone on to cascade).

Levels of formal cascading were lower than respondents had predicted in the post-session questionnaire, with the gap particularly pronounced in terms of presentations at work and to community groups (Table 3). The depth interviews offered few insights as to why work-based presentations were lower than anticipated, but did suggest that formal community-based activities were lower because of the time of year, and that the number of formal activities may increase in the spring and summer months.

Q. In which of the following situations have you communicated LFHW information?

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18 Q. In which of the following situations have you communicated LFHW information?
Table 3 – Actual vs. Predicted formal cascades: Level 0 to Level 1 (Base sizes: 116 workshop volunteers completing a post-workshop survey (Predicted) and 52 workshop volunteers who completed the follow up survey after three months (actual))

<table>
<thead>
<tr>
<th>Cascade</th>
<th>Predicted % of volunteers undertaking activity</th>
<th>Actual % of volunteers undertaking activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giving a formal presentation on LFHW at work</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Giving a formal presentation on LFHW to a community group</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Running a stall at a local event</td>
<td>23</td>
<td>14</td>
</tr>
<tr>
<td>Running an interactive workshop</td>
<td>23</td>
<td>6</td>
</tr>
<tr>
<td>Writing an article for a newsletter</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td>Talking to people at local events</td>
<td>21</td>
<td>27</td>
</tr>
<tr>
<td>Using social media/networking</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Posting links on the work intranet</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>London Colney</td>
<td>12</td>
<td>6</td>
</tr>
</tbody>
</table>

The remainder of this section looks at both types of cascade (formal and informal) in more detail and according to the detailed insights from the qualitative depth interviews.

2.5.1 Formal cascades

There were relatively few instances of interviewees undertaking formal cascades. In most cases interviewees had simply not considered these and in some cases had not left the workshop knowing that this was a particular aspiration of the course. In other cases the interviewee had no obvious existing ‘channel’ to undertake a formal cascade.

When formal cascades did occur most were linked to a volunteer having a role within their organisation which gave them a channel through which to cascade. For example, formal cascades were carried out by the local authority interviewees, some of which had a specific remit for engagement and outreach. Between them the two interviewees had:

- Run three workshops in schools (about 30 pupils at each);
- Spoken to over 100 people through outreach work in community groups (workshops, stalls, emails);
- Attended 5 roadshows, speaking to around 25 at each;
- Given out LFHW freebies and information; played some of the games from the workshop; encouraged people to pledge to change food waste behaviours;
- Bought advertising space in a local newspaper and included LFHW facts once a month;
- One had done a formal presentation at work as part of a staff meeting.

Furthermore, despite a very specific barrier for the retailer’s volunteers (i.e. they were prevented from cascading formal LFHW materials because the organisation were still in the process of developing their own corporate line on food waste), two interviewees from these events had included some LFHW information in training they deliver (and in one case this may have resulted in some messages therefore reaching as many as a thousand people).
2.5.2 Informal cascades

Friends and family
Unsurprisingly, ‘family’ was noted as interviewees’ strongest relationship and all had mentioned LFHW to someone in their family. In the majority of cases this was in the form of a normal and relatively short conversation, although in one case an interviewee had their notes to hand and talked to their family about LFHW waste facts and tips for over an hour.

Cascades often happened in the kitchen, around food and in very practical situations - family cooking and eating together provided a natural setting where talking about the LFHW information ‘made sense’. For example, a couple of interviewees were prompted to pass on LFHW messages after seeing family members put bread in the fridge or waste leftovers. Similarly, with their close friends LFHW had ‘come up’ in some way and interviewees were confident enough to pass on information. For example, they have been to friends’ houses and seen them in the kitchen, prompting them to mention any pertinent LFHW tips.

F:  I feel very positive about things like this, and passionate, but I don’t necessarily bring it up in conversation unless we’re in the kitchen and they’re putting something in the fridge. I wouldn’t, like, meet up with my friend that I haven’t seen for a month and be the first thing I say to her.”
Warwick

F: With friends they’ve perhaps come round to my house or I go round to their house so I can see the things that they do... and with close family as well. Whereas the other people [on the social network map], these aren’t people I see in a home setting so the conversation doesn’t come up
Warwick

F: [Situations like] having supper, so inviting friends over and, you know, the conversation gets round to food, and just mentioning it [LFHW], so they’re kind of sitting ducks aren’t they really!
Gloucester

A second, and particularly time-limited, trigger for cascading was general conversations about what friends and family had been doing in the past few days/weeks. For example, and during the period after the interviewee had attended the workshop, friends asked them what they had been up to and they mentioned the workshop and a few of the things that they had learned.

Work
Most interviewees mentioned LFHW to some of their work colleagues. Colleagues were often noted as a ‘strong relationship’ due to the high frequency of contact and, as with friends, LFHW information had been passed on in ‘general conversation’. At the large organisation the workshops took place during work hours. This naturally led the interviewees to both discuss LFHW with others at work and also encourage others to attend workshops in the future (as there were more workshops planned).

F: Obviously [I told] people at work, because I was at work when I went to the session, so you automatically come back and tell them about it.
Warwick
Wider community
Almost all of the interviewees took part in social/activity groups outside of work (including dance groups, book clubs, swimming groups, a beekeeping group, etc). Some mentioned LFHW informally in conversations, although for others it did not come up in conversation naturally or did not feel like the ‘right’ situation to bring it up. Some also noted that they did not feel comfortable giving ‘lifestyle advice’ on ‘private behaviours’.

F: *During the coffee break they just talk about bees, they don’t talk about anything else – it’s very focused on bees!*

Leicester

F: *If you don’t know that much about them then it’s unlikely that you’re going to give them lifestyle tips*

Warwick

2.6 Quality of the cascade
The quality of the cascade is as important as the quantity, in terms of not just getting a message to cascade but also to ensure that (a) it remains accurate (as opposed to picking up distorting embellishments and inaccuracies along the way); and (b) it elicits action. The research is positive in several respects about the quality of LFHW cascades:

- The in-home depth interviews suggest that volunteers were adept at understanding how to engage their immediate contacts about LFHW and, in particular, what might motivate uptake of the messages. For example, some intentionally avoided couching LFHW in environmental terms, while others tied LFHW into motivations around guilt and/or financial savings.

  F: *If I say, look, the environment is affected by this, nobody is going to take it seriously, they’re going to laugh in my face!*

  Colney

  F: *They’re on a budget so I was trying to help them save money.*

  Aylesbury

- Volunteers’ cascades had – collectively - good coverage across a range of LFHW topics including using leftovers, portioning advice and meal planning. This was confirmed by the 18 interviews with the Level 1 recipients of this information – who recalled a number of topics including eight mentions of storage tips (including freezing bread, putting vegetable in breathable bags, and standing a cucumber vertical in water), six mentions of how to use leftover, four mentions for both portioning and date labels, and three mentions of meal planning.

- The Level 1 interviewees reported that the cascades did have an impact on their behaviour, either in terms of reinforcing existing behaviours or forming new habits.

However, the follow up interviews with workshop volunteers – 3 months on - also suggest that some LFHW information from the sessions was more readily recalled than others, and that time is a significant factor in the quality of cascades. In particular, recall of the background statistics was limited and interviewees tended to rely on very specific facts that had stood out/were considered particularly salient to them, which was particularly true of novel storage facts.
This is supported by the follow up survey with the 56 workshop volunteers, which found that LFHW tips and advice were more easily recalled than either background information to LFHW or suggestions on how to pass information on to others (Figure 6). For example, just over three quarters (77%) of respondents said they recalled ‘all’ or ‘most’ of the section on tips and advice, compared to only 43% in relation to the support/advice on how to pass the information on to others.

**Figure 6** – Workshop volunteers’ recall of material from the training sessions (Level 0). (Base: 55 workshop volunteers who responded to the follow up survey).

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19 Q. How much do you recall from these parts of the LFHW session you attended?
3.0 Conditions for cascading
This section explores the conditions that make cascades more or less likely. The research suggests that the likelihood of cascading is governed by three main influences:

- **Individuals’ characteristics** – their confidence, personal traits, interest in LFHW, etc.
- **Pathways / channels** – the means for them to cascade through their networks.
- **Support** – the nature of the training and the support for volunteers post-workshop.

Each of these influences, and the constituent elements that comprise it, are summarised in Figure 7. A short hand version is:

\[
\text{Likelihood of cascading} = \text{Individual characteristics} \times \text{Pathways} \times \text{Support} \ (L = IPS)
\]

Figure 7 – Conditions for cascading (summary)

The section now goes on to explore each of the three influences in turn.

3.1 Individuals’ characteristics
One of the key conclusions from the Brook Lyndhurst research on mavens for Defra\(^{20}\) was that we should be thinking about individuals with ‘maven-like attributes’ rather than ‘mavens’ per se. In the context of cascade training, the research suggests that the volunteers across the 10 case studies had a good mix of characteristics that make cascading more, rather than less, likely.

\(^{20}\) The diffusion of environmental behaviours; the role of influential individuals in social networks. Brook Lyndhurst for Defra (2009).
3.1.1 Interest
Volunteers were generally interested in the topic of preventing food waste. The post session questionnaire found that almost two in three (64%) rated the course 9 or 10 out of 10\(^\text{21}\) in terms of how interesting they found it (average: 8.8/10). All had attended the workshop voluntarily, although for some at the retailer events it had been recommended as part of their training.

Furthermore, many volunteers were interested in related topics – for example, 84% said that the environment was a topic they discuss with others either ‘often’ or ‘sometimes’ (compared to only 16% who said ‘rarely’ or ‘never’). In addition, some groups had other complementary interests and skills: the Cooking group in Leicester in particular had an interest in food; and the ‘Waste Action Volunteer’ group were also being trained in composting as part of a wider training programme. The depth interviews also found that some had a strong and pre-existing interest in waste issues (e.g. some mentioned an active interest in composting and others had been trained as ‘Master Composters’).

3.1.2 Knowledge
Volunteers’ knowledge was not tested as part of this study. Pre-existing complementary knowledge, as well as the capacity to learn and retain new information will naturally affect people’s confidence to pass information on to others, and the likely quality of these cascades. Support that involves reminders and up to date information may therefore be a useful component to maintain and increase volunteers’ knowledge (see Section 3.3).

3.1.3 Confidence
The research explored volunteers’ level of confidence to undertake specific types of cascade (Figure 8). This demonstrates that many felt confident in their ability to cascade LFHW information formally (e.g. 73% would feel ‘very’ or ‘fairly’ confident talking to people at local events, while 69% would feel likewise delivering a formal presentation on LFHW at work). However, the survey also found that a substantial minority would not feel confident undertaking these kinds of cascade – particularly those cascades which involve social media or posting links on a work intranet (50% and 38% would not feel confident, respectively).

\(21\) A common question scale used in both surveys was a ‘score out of 10’ with, for example, 0 = not at all interesting and 10 = very interesting
3.1.4 Personality

The depth interviews also investigated the influence of personal characteristics, with interviewees asked a series of questions on their propensity to share information (adapted from the Brook Lyndhurst work for Defra on mavens). Answers varied considerably between participants. The two interviewees in Leicester, for example, exerted characteristics symptomatic of influential individuals, in that they would offer advice and suggestions to a large number of people on a range of topics:

\[ F: \text{ I'll approach anybody and everybody!} \]

Leicester

Both interviewees also had large social networks, and claimed to have gone on to communicate LFHW information from the workshops with over 100 people in the wider community, largely through informal discussions.

One of the depth interviewees from the Gloucester workshop displayed similar characteristics, and had gone on to communicate LFHW information to about 70 people in the wider community (on top of her friends, family and colleagues):

\[ F: \text{ I'm always sticking my nose in. I'll give advice on any old topic.} \]

Gloucester

The other Gloucester interviewee also often claimed to readily give advice and opinions, but only on a select few topics that she was confident talking about (including food). She had cascaded information to fewer (40) in the wider community, but also had plans to write an article on LFHW in a local magazine.

\[ Q. \text{ How confident would you feel about doing the following...?} \]
For others, the answers to these questions were overridden by their job roles. The four depth interviewees from the workshops in Aylesbury and Bexley mentioned that they regularly give, and are asked for, advice and support through their positions at work. The two interviewees from the Bexley workshop, for instance, had communicated LFHW information to over 50 people each in their work and wider community networks (see Section 2.2 for more on these cascades).

Other interviewees were less likely to share advice and opinions. One of the depth interviewees at London Colney, for instance, did not exhibit the same level of confidence in giving advice and opinions. She was reluctant to have to defend her opinions and said it was not in her personality to advise others often. She had nonetheless cascaded information to 10 family members and close friends, but did not have an extensive social network outside of work. Of course, personality is likely to have a significant bearing on what roles and responsibilities people are given, as well as the size and type of social networks of which they are a part. This is the focus of the following section (Section 3.2).

3.2 Pathways
Two of the most significant findings from the research are the importance of (a) whether or not volunteers have a ready-made network through which to cascade due to a job or community role, and (b) how well connected they are in terms of their personal and professional networks. Cascades were much more likely to propagate when volunteers had a diverse and wide range of contacts and where they had a clear reason to pass LFHW information on to others.

3.2.1 A role that involves spreading information
Volunteers who worked with charity, education, or community groups expressly attended the workshops with the specific intention to use and pass on the information to others. Furthermore, many already had experience of incorporating similar information into their materials. For example:

- Local Authority staff had previous experience spreading information on waste avoidance campaigns and the workshop was set up specifically to give them the information and materials to enable them to undertake formal cascades of LFHW information to local residents;
- the Waste Action Volunteers were attending the workshop in order to go on to spread the information to the public, and they were committed to do at least 30 hours of voluntary work over the course of the year; and
- Cooking club organisers attend workshops with the aim of incorporating information into lessons and activities.

3.2.2 A specific responsibility for environmental issues at work
One reason for passing on LFHW information is a professional (or voluntary) responsibility for environmental issues. For example, among the 10 events, there was a skew towards professional audiences, with 78% attending as part of their work (of which just over half - 51% - had a specific responsibility to promote and/or coordinate environmental issues).

Comparing the cascade behaviours of those respondents to the follow up survey with a specific responsibility for promoting environmental issues at work vs. those with no such responsibility, the data demonstrates two things: (1) at work, the former undertook 40% more cascades than the latter.

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23 Interestingly, one of the Aylesbury interviewees said they did not like to take their work home, and therefore primarily gave advice and shared opinions whilst at work.
more cascades than the latter; and (2) the former cascaded considerably more to others ‘in the wider community’ (i.e. outside work). Indeed, those with a responsibility at work cascaded to 272% more people ‘in the community’ than those with no responsibility at work.

By virtue of their remit to cascade and the pathways at their disposal, those with a specific responsibility for environmental issues cascades to significantly higher numbers of people. In contrast, other work-based volunteers lacked any obvious remit, authority or pathway at work to cascade. For example, the two interviewees from the large national organisation’s sessions reported that they did not feel in a suitable position to spread LFHW messages through the company. Furthermore, the retailer volunteers were subject to a very specific barrier in that they were unsure of the ‘corporate line’. This prevented them from picking up materials at the workshop and cascading formally within the workplace.

3.2.3 Personal and professional networks
The research demonstrates that the size of interviewees’ networks varied considerably (e.g. as a function of work, social or volunteering roles). This was most evident in the in-home depth interviews and – specifically - the network mapping task whereby interviewees were asked to map their social and professional networks and identify who they did – and did not – choose to cascade to within these networks.

The two network maps outlined in Figure 9 demonstrate the variation in the size of individuals’ networks. Network maps were developed with each in-depth interviewee as part of the follow up interview process. The network map to the left shows a fairly typical network map of 60-70 contacts, while the map to the right shows a network map of over 1,000 contacts in a range of different situations. The more connected individuals with larger social networks tended to cascade information to more people. For instance, the person represented by the map to the right had cascaded to the most people (as recorded by the follow up survey).
Figure 9 – Two examples of a 'network map' from the in-depth interviews²⁴

²⁴ Note: the numbers represent the number of contacts in each group. Additionally, and just for left hand map, the numbers in the circles represent the number to which they had 'cascaded' information. This was not included in the map on the right hand side.
The interviewees from the Gloucester and Leicester workshops had a noticeably larger number of ‘groups’ on their network map. This is perhaps because of: the nature of their work in education (which automatically brings a large network of children, other staff, and parents); the fact that they were not working one role full time; and the fact that they were also involved with their own children’s networks. It is noteworthy that both of these groups rank highly in Table 2 in terms of the number of cascades generated.

The research indicates that ‘cascade situations’ are more likely where volunteers perceive that others will be interested in the subject/what they have to say. On this point the follow up survey results are encouraging (Figure 10), with the majority (56%) of respondents reporting ‘quite a few people were interested’ and close to one in three (31%) reporting that ‘everyone’ or ‘a lot’ of the people they talked to were interested. These results are largely in line with volunteers expectations in the post-session questionnaire.

**Figure 10** – Interest in LFHW information among those who workshop volunteers were cascading to (Level 0 to Level 1)\(^{25}\). (Base: 52 workshop volunteers who responded to the follow up survey and had gone on to cascade).

3.3 Support

This section looks at the support needs of volunteers, from pre-course information provision through to post-training guidance and materials. It is divided, accordingly, into three sections: ‘pre-training information’, ‘the training itself’ and ‘post training support’.

The reader is reminded once again that both WRAP and LPAs report that they have already adapted their approaches, either in the natural process of honing their delivery style or in response to the Interim evaluation report. This is relevant here (more so than other places in the report) because the findings refer to the 10 workshops and to practices which may have since been addressed.

\(^{25}\) Q. Of the people you communicated with, how many do you think were interested to hear about LFHW? Would you say...?
3.3.1 Pre-training information
The research indicates that a significant number of volunteers came to the workshop without a firm idea of what it entailed (or the objective of passing information on to others). For example, over half (55%) of the 116 volunteers who responded to the post-session survey said they knew ‘not very much’ or ‘nothing at all’ prior to attending the session. Furthermore, 45% said that they were not aware that one of the expectations was for them to cascade information to others.

3.3.2 The training itself
The workshops themselves were, by and large, well received and performed well on a number of criteria (Figure 11). For example, the vast majority of participants found the sessions useful (giving an average score of 8.6 out of 10), particularly the LFHW tips and advice (8.8 out of 10). Furthermore, close to two in three (66%) said that the session exceeded their expectations.

Figure 11 – How workshop volunteers rated the training (Level 0). (Base: 116 workshop volunteers who responded to the post-session survey).

This was also reflected in the in-depth interviews with workshop volunteers and event organisers. For example, the majority of interviewees considered the workshop to be useful – they said learnt new information, refreshed existing knowledge and were surprised by the ‘eye-opening’ statistics. Their comments about the presentation were largely positive, with only a few exceptions. Likewise, workshop organisers were happy with the organisation before the workshop, and pleased with the overall content and delivery.

However, some of the interviewees felt that the awareness raising workshops were too short or ‘rushed’, even though the LPAs were praised for fitting so much in to the available time. In these events, the interviewees said that they would have liked more time for questions.

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26 The reader is reminded that the awareness raising event format is offered when the event organiser / organisation cannot accommodate the full ‘trainer support’ session.
and for more interaction with other volunteers. A few of the interviewees also felt that more could be done to tailor the course to the specific organisation, which the LPAs themselves also noted (as well as the fact that the scope they have to do this is dictated – to an extent – by the support they receive from the event organiser).

The main point made by interviewees was the need for more emphasis on the cascading elements of the session – with more explicit acknowledgement that it is a core aspiration of the workshop and more time to brainstorm together and formulate personal and/or group action plans on how to cascade the information to their target audiences. A couple of the event organisers also felt that more could have been done during the workshop to help volunteers pass on messages effectively using practical ideas and ‘how to’ discussions (which WRAP report has since been addressed).

3.3.3 Post training support
The level of post training support, at the time of the 10 workshops, was a potential weakness in the cascade training approach. The research suggests that relatively few structures were enacted to support volunteers as they went on to cascade and that - to some extent - volunteers were left to their own devices.

For example, the follow up survey (Figure 12) shows that a significant proportion of the 56 volunteers that responded did go to the LFHW website (74%), go on to use LFHW materials (57%) and speak to other volunteers (62%). However, fewer reported support from their employer (34%), speaking to the event organiser (21%) or speaking to the LPA (13%).
Figure 12 – Actions by workshop volunteers following on from the training session (Level 0)\textsuperscript{27}. (Base: 55 workshop volunteers who responded to the follow up survey).

This is in contrast to the demand for more support post-workshop (Figure 13), with a significant proportion of survey respondents noting that it would have been useful to have been provided with physical materials to pass on (46%), more resources to take away from the training session (36%), follow up support from the event organiser (24%), more tips (22%) and more advice on how to present the information to others (20%). Only a small proportion (15%) cited follow up contact from the LPA directly, suggesting that the follow up support need not be extensive nor necessarily come from the LPAs themselves.

\textsuperscript{27} Q. Have you done any of the following since the workshop?
The research suggests that while some workshop organisers had a good understanding of what materials WRAP would provide others weren’t clear on the LPA’s role post-event. It also shows that, from the volunteers’ perspective, the event organiser is considered a more natural focal point for any follow up post-event. However, only a couple of the organisers that we spoke to had specific plans to support volunteers in communicating LFHW messages.

Furthermore, the research points to an important point about momentum and the need to follow up quickly post event with emails and/or materials to encourage volunteers to put their knowledge into practice (something that WRAP report is now in place with, for example, a monthly e-zine communication for those trained).

*M: It’s liable to drop off the radar completely because there isn’t the follow up by the organisation*

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**Figure 13** – Workshop volunteers’ support needs post-training (Level 0)28. (Base: 55 workshop volunteers who responded to the follow up survey).

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28 Q. Could anything have been included in - or alongside - the training session that would have been useful in order to help you communicate LFHW?
4.0 Impact on volunteers’ behaviours

This final section looks at the impact of the workshop on volunteers’ own behaviour, as opposed to their ability to go on and cascade information to others. It also outlines, in more detail, the behaviour changes noted by the Level 1 interviewees.

The research suggests that several key behaviours did change in response to the session (Figure 14), particularly food storage behaviours (46% of the 56 volunteers who responded to the follow-up survey say they have ‘significantly changed’ this behaviour) and also including food portioning (39%) and the treatment of left overs (38%).

While almost one in three (31%) also say they have significantly changed their behaviour around date labels, although this is the behaviour that volunteers self-report the least change (and indeed the same proportion – 31% - report that this behaviour has ‘not changed’ at all). Given the nature of the question (a retrospective question without a particular baseline) it is not clear if this lack of change represents the fact that volunteers had already established ‘good’ routines in respect of labels (i.e. there was little scope for change), or whether this behaviour is difficult to change.

Figure 14 – Reported changes in volunteers’ food related behaviours (Level 0)\(^{29}\). (Base: 54 workshop volunteers who responded to the follow up survey).

The qualitative evidence is largely supportive of this trend (Table 4). All of the 18 in-depth interviewees reported making at least one change to their behaviour, and many had made a raft of changes in line with the things learned in the cascade training workshop.

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\(^{29}\) Q. Have you personally changed any of the following behaviours due to the LFHW workshop?
Table 4 – Behaviour changes reported by in depth interviewees (Level 0)

<table>
<thead>
<tr>
<th>Behavioural category</th>
<th>Reported changes in behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Making lists was reported by a couple of interviewees as something that they had begun to do. Menu planning was also trialled by a couple of interviewees but was not something stuck to consistently. One interviewee began cooking deliberately large meals in order to freeze some. Also reported were buying less and checking the fridge first before shopping.</td>
</tr>
<tr>
<td>Using leftovers</td>
<td>Using leftovers was reported by several interviewees. Also reported was buying reduced items in supermarkets and using recipes from LFHW to use them up, and keeping things that would otherwise have been thrown out and using them up with recipes.</td>
</tr>
<tr>
<td>Storage</td>
<td>Storage tips that were mentioned: Keeping potatoes out of the fridge, keeping fruit in the fridge, freezing bananas, using the fridge more, avoiding fridge overloading, freezing bread (and keeping some in Tupperware), cooking and freezing items when near use by date, and wrapping vegetable in tissue in the fridge.</td>
</tr>
<tr>
<td>Portioning</td>
<td>Measuring rice and pasta was mentioned a couple of times.</td>
</tr>
<tr>
<td>Date labels</td>
<td>One interviewee spoke about increased knowledge of date labels.</td>
</tr>
</tbody>
</table>

The Level 1 in-depth interviewees also reported changing their behaviours. Of the 18 interviewed, only a few had not made any changes:

- 5 reported changing leftover behaviours
- 4 reported changing portioning behaviours
- 4 reported changing storage behaviours
- 4 reported changing the way they treated date labels
- 3 reported changing shopping or meal planning behaviours
- 2 had used the LFHW website
- 2 had kept food diaries (in preparation for a formal session run by a volunteer).

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30 Not reheating rice, and not feeding human grade food to chickens, were also mentioned as changes to behaviour.
5.0 Conclusions & Recommendations

The research demonstrates that the 10 cascade training events did successfully trigger cascades. Our most conservative and ‘worst case’ estimate is that 1,871 cascades took place between the workshop volunteers and their Level 1 contacts in the three months following on from the workshop, equating to an average of 16 per volunteer. This figure could be as high as 4,445 cascades, or 38 cascades per volunteer.

Turning to cascades between Level 1 and Level 2, a ‘rough and ready’ guessimate – drawn from the 18 interviews with Level 1s – is that they went on to cascade to around two people. This implies that the 10 events could potentially have generated 4,116–9,779 cascades.

Furthermore, the research suggests that continued cascading is likely with a possible range of 2,141 – 5,087 ‘future cascades’ over the next 9 months (of which almost half are likely to come from community-based cascades which were restricted during the winter months). We have resisted the temptation to add ‘actual’ and ‘future’ cascades together, given the considerable uncertainty about whether these planned cascades will happen or not, and the fact that we have no means of verification.

The research identified changes in the behaviour of both the workshop volunteers and their Level 1 contacts. The changes reported by volunteers (in response to the fact they had intensive training) were significant, whereas the changes among Level 1s related to specific and often individual practices. In some cases this served to reinforce existing food routines and practices; in others to change practices with e.g. a particular food stored in a different way. In keeping with the findings from the evaluation of Zero Waste Scotland’s Volunteer Programme, changes in behaviour tended to be incremental rather than transformational.

The research has identified the existence of ‘super cascaders’, i.e. a small subset of volunteers, apparent across most of the events, whose cascade behaviour is significantly above average. While the research is not able to take a view on the quality of their cascades (i.e. how, and in what ways, a cascade targeted at 100+ people is different from a personal conversation targeted at one person), in terms of potential reach this group is interesting.

The research also makes clear that the majority of the cascades to date have been informal (i.e. unplanned conversations with family and friends and work colleagues). In contrast, there have been fewer instances of formal cascades, either at work or in the community. Rather than viewing either type as more or less effective, the reality is more subtle in that each type offers different things. For example:

- **Formal cascades** are beneficial if a specific objective of the cascade training is to encourage volunteers to go on and deliver the training themselves (i.e. a ‘train the trainer’ strategy). Formal cascades may also have advantages in terms of the volunteers being able to select specific audiences, ensure that accompanying materials are available and make it clear to others that they could also cascade. We speculate that more formal cascades could reduce the drop off between Level 1s and 2s (and beyond).

- **Informal cascades**, on the other hand, appear unlikely to generate lots of onward cascades (i.e. volunteers tell their family, close friends and work colleagues who, in turn, may tell one or two of their own close friends/family). However, they are ideally placed to deliver LFHW messages in particular context, i.e. very specific tips that are delivered in situ (i.e. the ‘private space’ of kitchen), at the right time (i.e. a practical food setting) and by a trusted messenger (i.e. ‘someone like them’) who will tailor the message accordingly. It is not simply the face-to-face nature of the contact that is critical, but the fact that it is
face-to-face engagement with information that is highly personalised and grounded in a very specific context.

The likelihood of a cascade is influenced, among other things, by three factors: the personal characteristics of the volunteers (i.e. do they have ‘maven-like’ attributes?); their access to a pathway to cascade through; and the support they receive.

Volunteers found the events useful and interesting, although some weaknesses around pre-event communications were identified (and have since been rectified). Slightly more challenging is the question of support following on from the sessions. We note that the initial plans for each volunteer to leave the session with a personal cascade plan never materialised (at least not in the 10 case studies), which we judge could have been beneficial to provide them with an inbuilt reminder (again this has since been rectified). We also note that, in line with Zero Waste Scotland’s Volunteer Programme, there was a demand among volunteers for greater interaction post-event to exchange knowledge and ideas. Fostering a ‘learning culture’ within the groups of volunteers – potentially convened by the event organiser with the support of the LPA - would help retain and grow the body of knowledge within the network.

There is considerable variation in cascades across the 10 case studies. Some groups appear well suited to a cascade-based model, in terms of their skills sets, their connectivity in social and professional networks and, by extension, the channels they have at their disposal to cascade through. Others appear less well positioned to undertake cascades.

This does not question the value of engaging with certain groups to achieve other objectives (e.g. to build relationships and partnerships, to give LFHW ‘taster sessions’); but it does question the value of engaging these groups with the immediate expectation of triggering cascades. A longer term strategy might be needed with shorter initial sessions leading on to longer trainer workshops at a later time. This raises important questions about the resources dedicated to individual groups (i.e. depth of engagement) as opposed to maximising the number of groups they engage (i.e. breadth of engagement).

5.1 What role for cascade volunteers?
The LFHW cascade training programme is a live example of a diffusion project using a form of pro-environmental ‘maven’ (or, more accurately, individuals with ‘maven-like attributes’). The programme, broadly speaking, involves the identification of specific catalytic individuals; persuading them of the benefits of the LFHW behaviours; providing them with tailored support material; and then allowing them the freedom to “do what they do”.

It seems that, in principle, LFHW is no different to any other topic about which catalytic individuals influence others. It is subject to exactly the same conditions as other topics: the interviewees all stressed that they must believe in something and have enough knowledge about it in order to influence others. If these conditions are fulfilled, with regard to the environment or any other topic, these individuals are likely to influence others.

There is a balance to be struck between informal and formal cascades. We judge that more emphasis should be placed on formal cascades than was seen in the first 10 events, and that this form of cascading would increase the reach of LFHW cascades. However, there are likewise risks in trying to prescribe what volunteers should do. Catalytic individuals tend to be creative, thoughtful and idiosyncratic, which means they do not respond well to being told what to do, nor do they typically simply replicate or pass on an innovation; rather, they use their own judgment to adapt and modify it to suit their circumstances and the people they wish to help. That is, to a large extent, the strength of the approach.
Furthermore, we do not wish to imply that formal cascades are preferable to informal cascading. The latter delivers highly personalised and context-specific information that is transmitted in the right way, at the right time and by the right person. It is a channel not open to traditional forms of communications which potentially makes it an ideal part of the LFHW campaign (as opposed to seeing it as an either/or to traditional communications).

5.2 Next steps
Cascade training remains both an innovative and evolving process, and there is a particular need to understand how cascading works in different contexts/with different audiences and what post-workshop support can be given to volunteers (especially to the super-cascaders).

In terms of further research we note again that – given the formative nature of this evaluation – that it is inevitable that this research will become ‘dated’ rather quickly. Its role was to support the initial workshops (which it has), assess whether enough cascades took place to warrant a continuation of the approach (there was), estimate the number, type and quality of cascades (it did) and – in doing so - trial a new methodology. Therefore, if there was a desire to further understand and track the impact of the cascade training approach moving forward, additional research would be required.

We judge that the cascade training model has succeeded (on the basis of the number and quality of cascades) and is a complementary strategy to deliver LFHW messages.
## Appendix 1 – Events attended and participation in the research

<table>
<thead>
<tr>
<th>Detail</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Attended 3 hour training workshop – 7; completed post session survey – 7; Completed follow up survey – 4; Interviewed – 2; Cascade Level 1s interviewed – 0</td>
<td>Total number of cascades by follow up survey respondents: 246 – 302 (68.5 per respondent)</td>
<td>Range across respondents: 9 – 120</td>
</tr>
<tr>
<td>Cascades to: friends/family - 27-43 (8.75 per respondent); wider community - 147-163 (38.75 per respondent); at work - 47-63 (13.75 per respondent); other – 25-33 (7.25 per respondent)</td>
<td></td>
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<tr>
<td>• Local Authority Waste Team are experienced at running events and communicating environmental campaigns to the public. They were already working closely with LFHW and organised the session to enable the team, and colleagues in other boroughs, to spread food waste avoidance messages on top of existing recycling and climate change messages.</td>
<td></td>
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<tr>
<td>• The workshop was very well received. Although it did not appear to have been specifically tailored to this audience, the content and delivery of the workshop largely matched the audience needs.</td>
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<tr>
<td>• As well as a handful of informal conversations, the two interviewees had each reached many people in the wider community through formally cascading the LFHW information as part of their job roles. This cascading included external outreach, road shows, and workshops in schools. Between them they also expected to reach a further 200 or so in total. One had been in touch with an LPA.</td>
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<td></td>
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<tr>
<td>Attended 45 minute ‘awareness raising’ workshop – 12 and 10(^1), Completed post session survey – 24(^2), Completed follow up survey – 5; Interviewed – 2; Cascade Level 1s interviewed – 1.</td>
<td>Total number of cascades by follow up survey respondents: 560 – 601 (116.1 per respondent)</td>
<td>Range across respondents: 3 – 237</td>
</tr>
<tr>
<td>Cascades to: friends/family - 29-53 (8.2 per respondent); wider community – 300 (60 per respondent); at work - 221-234 (45.5 per respondent); Other – 10-14 (2.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Attendees were those running Cooking clubs, so already have a role communicating information related to food. They attended the event in Leicester primarily for Cooking Club information and demonstrations, and the LFHW workshop as an add-on that they might learn something from.</td>
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<tr>
<td>• Interviewees found the workshop very useful, well presented, and it refreshed and extended existing knowledge. It was also noted, retrospectively, that it could have been longer (though this was not possible under the circumstances) and that it didn’t necessarily prepare attendees to pass on the message. Attendees received an email from the LPA after the session, and one interviewee replied to discuss her plans.</td>
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<tr>
<td>• The two interviewees we spoke to were also involved in teaching and school networks, church groups, networks through their children, and local arts/performance groups. Both also cater for one or more of these groups on occasion. They had therefore spoken to lots of people informally, not just family members and close friends: one claimed to have mentioned things from the workshop to over 300 people, the other around 150. One interviewee had also incorporated things from the LFHW workshop and website into a food class she ran for children with learning difficulties, reaching about 80 students more formally.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• We spoke to one of the Level 1s that an interviewee had chatted with (for about 20 minutes at an after-school club) and she had gone on to discuss the conversation with her husband.</td>
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<td></td>
</tr>
<tr>
<td>Attended training workshop – approx. 25; completed post-session survey – 10; completed follow up survey – 3; Interviewed – 2; Cascades Level 1s interviewed – 0.</td>
<td>Total number of cascades by follow up survey respondents: 45 – 70 (19.2 per respondent)</td>
<td>Range across respondents: 13.5 – 27</td>
</tr>
</tbody>
</table>

\(^1\) We attended two 45 minute sessions in the morning. A further two sessions were held in the afternoon.  

\(^2\) The additional two questionnaires here are from a further third session that day which we did not attend. Questionnaires and pre-paid envelopes were provided for that session.
The workshop was again seen as very useful, with good content. More information on tailoring the activities for groups involving children, or running activities for children, was desired by this group.

We were not able to speak to any of the people that these interviewees reached.

Attended training workshop – 17; Completed post-session survey – 17; Completed follow up survey – 3; Interviewed – 2; Cascades Level 1s interviewed – 3.

Total number of cascades by follow up survey respondents: 26 – 46 (12 per respondent)
Range across respondents: 6 – 15
Cascades to: friends/family – 13-23 (6 per respondent); wider community – 0 (0 per respondent); at work – 13-23 (6 per respondent); Other – 0 (0 per respondent)

The training course was offered to a national retailers staff in the region, and attended by those who felt it might be relevant to their job roles, such as trainers responsible for inducting and training staff, and PR ambassadors who work with local communities. Intended outcome from the retailers perspective was to potentially feed in to training materials, but also to educate staff to deal with related customer questions. It was not the aim that attendees would take on LFHW as part of their job role, or pro-actively passing the message to colleagues or customers.

Attendees left the workshop unsure what they were supposed to do to take it forward, and they were not allowed by the organisation to take materials away with them. Despite this, it was considered interesting on a personal level.

Both interviewees had spoken to their households in some detail shortly after the workshop. One had used notes and spoken to their family for over an hour, had also mentioned LFHW to a few friends, and to around 25 colleagues (some of whom were new starters that he was training)

We spoke to two family members and a close friend of one of the interviewees, all of whom the interviewee had chatted to about LFHW in informal settings (for one of the family members the conversation took place over the phone). While the family members had not yet passed the information to anyone, the friend had gone on to discuss it with three people: her mum; her boyfriend; and her manager at work.

Cascades to: friends/family – 17-49 (4.1 per respondent); wider community – 20-29 (3.1 per respondent); at work – 46-79 (7.8 per respondent); Other – 0 (0 per respondent)

The training course was offered to a national retailers staff in the region, and attended by those who felt it might be relevant to their job roles, such as trainers responsible for inducting and training staff, and PR ambassadors who work with local communities. Intended outcome from the retailers perspective was to potentially feed in to training materials, but also to educate staff to deal with related customer questions. It was not the aim that attendees would take on LFHW as part of their job role, or pro-actively passing the message to colleagues or customers.

It was repeatedly stressed at the workshop by the organiser that staff were expected to take in the information ‘as consumers’ and not cascade to store customers. The attendees were engaged and interested in the subject from a personal perspective, offering anecdotes and comments throughout the workshop.

The interviewee told us he had talked about avoiding food waste in a couple of large social groups. His role means he travels across the country to train staff, often doing several training sessions in one day, and he claimed that while conducting ‘food safety’ training he would drop in facts about how ever many millions of pounds of produce are thrown away, talk about sell by and best before dates etc. These messages have therefore potentially reached over a thousand people.

Attended training workshop – 11; Completed post session survey – 11; Completed follow up survey – 5; Interviewed – 2 (but only 1 follow up interview); Cascade Level 1s interviewed – 1.

Total number of cascades by follow up survey respondents: 72 – 125 (19.7 per respondent)
Range across respondents: 9 – 36.5
Cascades to: friends/family – 19-38 (5.7 per respondent); wider community – 0 (0 per respondent); at work – 52-82 (13.4 per respondent); Other – 1-5 (0.6 per respondent)
• The training course was offered to a national retailers staff in the region, and attended by those who felt it might be relevant to their job roles, such as trainers responsible for inducting and training staff, and PR ambassadors who work with local communities. Intended outcome from the organisations perspective was to potentially feed in to training materials, but also to educate staff to deal with related customer questions. It was not the aim that attendees would take on LFHW as part of their job role, or pro-actively passing the message to colleagues or customers.

• According to one of the interviewees, it was unclear from the presentation exactly what was expected of attendees afterwards, given that attendees were not given supporting material (at the request of the organisation) and did not feel prepared to pass on messages. It was also suggested that the presentation was not pitched correctly for the audience, and that it did not seem that the measures that those working in food retail take to avoid wasting food from stores was understood. The presentation also contained photos of things from other retailers, which could have been removed.

• The interviewee had spoken to his partner and a few colleagues, and had not formally communicated the LFHW information.

• We interviewed one of the colleagues who was doing a presentation as part of her training and was told about LFHW. She incorporated LFHW facts into the presentation and delivered it to 12 colleagues.

Attended shorter training workshop – 5; Completed post session survey – 5; Completed follow up survey – 2; Interviewed – 1; Cascade Level 1s interviewed – 2.

Total number of cascades unknown due to sample size of 2.

• The LFHW workshop was delivered as a one-off session to the parents of pupils at a Primary School. A parent co-ordinator organised it and thought others might be interested in the content.

• One of the interviewees noted that the session was not as interactive as it could have been, as the relatively small number of attendees were reticent to contribute to the discussion, some losing concentration as they had their children with them. More resources could have been given to those who were keen to pass on information. A LFHW event at the local supermarket shortly before the workshop may have been the cause of a number of people dropping out of the workshop.

• The interviewee had spoken informally to about 10 friends and family. She also posted a link on a social network website that she runs and has a total membership of over 1,500.

• We interviewed the partner and a sister of the interviewee, both had their awareness raised by the transmission of the LFHW tips, and both had passed it on to others: one to six mums on a girls night, and one to a few friends and colleagues.

Attended training workshop – 14; Completed post session survey – 14; Completed follow up survey – 11; Interviewed – 2; Cascade Level 1s interviewed – 5.

Total number of cascades by follow up survey respondents: 271 – 408 (30.9 per respondent)

Range across respondents: 0 – 111

Cascades to: friends/family – 86-139 (10.2 per respondent); wider community – 47-66 (5.1 per respondent); at work – 98-145 (11.1 per respondent); Other – 40-58 (4.5 per respondent)

• The session was set up by a county council to mobilise a group of volunteers to communicate the LFHW information. The volunteers were recruited through an email list of people working in the community, Adult Education, or had previously attended a related course (e.g. Master composter), and were therefore attending with future dissemination of the information in mind.

• The session was useful for attendees, but there were comments that it could have covered different scenarios. As community workers and volunteers attendees felt they would have to adapt the information considerably to suit different audiences.

• Both interviewees had run relatively formal activities, incorporating the core messages from LFHW. One was a lesson run for seven asylum seekers, one for around 10 parents of Year 1 pupils with support from the organiser of the LFHW session. In addition, both interviewees were active in multiple community and voluntary activities (e.g. Woodcraft Folk, Transition Towns, Adult Education, gardening group, school networks) and so had brought up information from the workshop informally to a further 150 or so between them. They both anticipated spreading LFHW messages.

• We interviewed three parents who had attended the formal presentation to Year 1 parents. Two had gone on to tell other mums (about nine in total), and the other had mentioned it to four or five family members. We also spoke to an asylum seeker who had received significant LFHW information whilst at home, and had gone on to tell six friends, and a relative of the interviewee who had spoken to a couple of people that run a café.
Attended 45 minute ‘awareness raising’ workshop – (approx.) 12 and 12\[^{33}\]; Completed post session survey –6; Completed follow up survey – 5; Interviewed – 3; Cascade Level 1s interviewed – 4.

Total number of cascades by follow up survey respondents: 145 – 191 (33.6 per respondent) [NB. and posted on social network to a following of over 300]

Range across respondents: 6 – 109

Cascades to: friends/family – 10-29 (3.9 per respondent); wider community – 1-5 (0.6 per respondent); at work – 33-52 (8.5 per respondent); Other – 101-105 (20.6 per respondent)

- Shorter workshops were arranged for a large national organisation’s staff, in work hours, at their HQ. Workers heard about it through an internal magazine and attended to find out what they could personally learn about making food go further.
- The session was enjoyed and useful on a personal level for attendees. The ‘cascading’ message did not come through clearly, and attendees were apparently nudged in this direction more from the evaluation questionnaire than the session itself. Materials were not sent to attendees until a few months after attending. There was an awareness that further sessions would take place and interviewees had all recommended that colleagues attend.
- Interviewees had all spoken to family members, close friends, and colleagues. One was potentially going to deliver more formal presentations in future as part of charity work they carry out.
- Two work colleagues of an interviewee were interviewed and had passed information to a total of five family members between them. A work colleague and the mother of another interviewee were also interviewed but had not yet passed messages on further.

Attended training workshop – 8; Completed post session survey –8; Completed follow up survey – 7; Interviewed – 2; Cascades Level 1s interviewed – 2.

Total number of cascades by follow up survey respondents: 292 – 378 (47.9 per respondent)

Range across respondents: 6 – 103

Cascades to: friends/family – 49-81 (9.3 per respondent); wider community – 52-67 (8.5 per respondent); at work – 41-62 (7.4 per respondent); Other – 150-168 (22.7 per respondent)

- County Council runs a ‘Waste Action Volunteer’ (WAV) scheme whereby residents receive training in exchange for a commitment to undertake 30 hours of volunteering in the community. As part of the initial training of these volunteers LFHW training was delivered, alongside training on composting and recycling, to equip them to deliver messages in the community by running or attending events. The WAVs are then supported by someone from the council who provides regular contact and additional resources.
- Attendees enjoyed the session. It became clear afterwards, however, that some were more enthused by composting than food waste, and that there was a tension as to which they should promote when volunteering at community events and there were two uniforms and different branding, which could confuse messages.
- One interviewee had spoken to only a few close friends, but was organising a LFHW road show for a local farmers market. The other interviewee (and her husband, who also attended the workshop) were heavily involved in social activities (such as a singing group, a dancing group, and the village hall committee) and had informally spoken to around 30 people.
- Two ‘cascadees’ were spoken to from one of the interviewees: her daughter, who after a chat went on to tell four or five at a mother/toddler group; and a friend who was working with them to plan dissemination of composting and LFHW messages at a ‘Lambing day’ and another event in March/April, but had not received any information she could pass on.

\[^{33}\] We attended two 45 minute sessions.
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