



# Food Waste & Composting: Practices, Meanings, and Competencies

Written By: Dr Sayed Elhoushy

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This document presents a summary of findings from the first stage of the *Food Waste Pilot Project*, conducted in partnership with the *East London Garden Society*. In this report, we gather evidence on food waste and composting practices of residents and tenants through interviews.

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**Written By:** Dr [Sayed Elhoushy](#), PhD, FHEA, Lecturer in Marketing & Programme Director of the [International Marketing and Business Strategies](#) MSc, School of Business and Management, Queen Mary University of London, 327 Mile End Rd, London E1 4NS.

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## Executive Summary

Food wastage comprises an estimated one-third of total food production, contributing up to 10% of global greenhouse gas emissions. In the UK, the average person wastes approximately 100 kg of food each year, with households responsible for around 60% of food waste at the consumer level[1]. Throwing away food is bad for both people and the planet, but there are steps we can take to reduce food waste and protect public health in the present and the future.

This first stage of the Food Waste Pilot Project aims to explore the most impactful decisions in the household food and drink waste reduction and management process across key stages including—planning, shopping, managing leftovers, and waste disposal. We explore these stages holistically, following the logic that the journey is interconnected—behaviours at one stage can be related to behaviours at subsequent stages. We also unfold people’s experiences and how they think about food waste experience and explore the barriers and facilitators that may promote or deter individuals and families from composting their waste.



This report sheds light on the following key outcomes:

- Participants primarily link waste reduction to *cost savings*, with additional emphasis on global issues like climate change, poverty, and “others” in need.
- Participants express stronger support for *localized waste recycling* schemes and *community-led composting*, particularly when actively participating in the process and witnessing the outcomes.
- Composting food waste is successful when (1) Residents exhibit motivation and active engagement (*meaning*); (2) have access to the necessary materials (*materials*); (3) possess the knowledge and skills required for the task (*know-how*); and (4) find the process convenient and user-friendly (*ease of use*).
- However, focusing solely on **composting may backfire**, where some people use it as an excuse to waste. This underlines the need to tackle the roots of food waste throughout the consumer journey.

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## Introduction

Global challenges such as climate change, and overconsumption underscore the collective responsibility to manage resources wisely, with a particular focus on responsible food production and consumption [2]. It is worth noting, however, that approximately one-third of all the food produced globally ends up not eaten, resulting in significant economic, social, and environmental consequences. This wastage translates into a substantial financial loss of nearly one trillion dollars and the emission of approximately 3.3 billion tons of carbon dioxide annually[3].

In a recent announcement, the United Nations (UN) has expressed concerns regarding the current state of efforts to limit global warming to 1.5 degrees Celsius[4]. It's important to recognize that the global food system plays a substantial role in contributing to GHG emissions, accounting for approximately one-third of the emissions[3]. Moreover, it's worth noting that food wastage is a substantial contributor to GHG emissions, accounting for about 10% [5]. Therefore, any meaningful progress towards reaching the 1.5-degree target requires us to address and make significant changes to the way our global food system operates. This is a pivotal aspect of our collective efforts to combat climate change and protect our planet's future.

In the UK, the average person wastes approximately 100 kg of food each year, with households responsible for around 60% of food waste at the consumer level[1]. The 2008 Climate Change Act committed the UK to significantly cut its carbon emissions by 2050, aiming for an 80% reduction. It is expected that consumer behaviour changes can play a major role in achieving this reduction, according to the UK Low Carbon Transition Plan 2009.

This report takes the stand that tackling food waste is a shared responsibility between governments, businesses, communities, and individuals. However, in this report is focused on the consumer level (household food waste) trying to understand the role that consumers can play in this regard.

## Scope and Methodology

Stemming from an interpretivism position, qualitative research was chosen to delve into respondents' understandings, attitudes, norms, and behaviours related to food waste. The objective was to explore not only what was immediately apparent but also how respondents perceived and reacted to a range of possible community initiatives.

To gain insight into individuals' experiences, 15 semi-structured in-depth interviews were conducted. The interviews spanned five months, from January to June 2023, and participants were selected using a convenience and snowball sampling technique. Data collection continued until data saturation was achieved to mitigate potential selection bias and sampling error [6]. Notably, for studies with more structured interviews like this one, data saturation often occurs around twelve interviews[7].

Recruitment for the study involved the use of leafleting and door-knocking, resulting in the initial recruitment of 25 participants, with 10 eventually dropping out. A screening process assessed participants' involvement in purchasing food, waste separation, and household food disposal practices. Table 1 provides the characteristics of participants (see Appendix).

The researcher conducted interviews using a semi-structured interview guide. The interview questions focused on understanding participants' perspectives on food waste, waste disposal, and food waste management practices throughout the food consumption cycle. Initially, three pilot interviews were conducted to assess guide suitability and refine question-wording as needed. Subsequent interviews used the updated guide and ranged from 45 to 125 minutes in duration. All interviews were recorded and professionally transcribed for analysis and interpretation.

Data analysis followed thematic content analysis identified categories and themes. To minimize bias and validate findings, a research assistant was recruited to analyse the data separately, allowing to compare identified categories[8].

The thematic analysis applied social practice theory framework[9], examining the dimensions of materials, competencies or skills, and meanings. This approach facilitated a comprehensive understanding of respondents' perspectives and behaviours related to food.

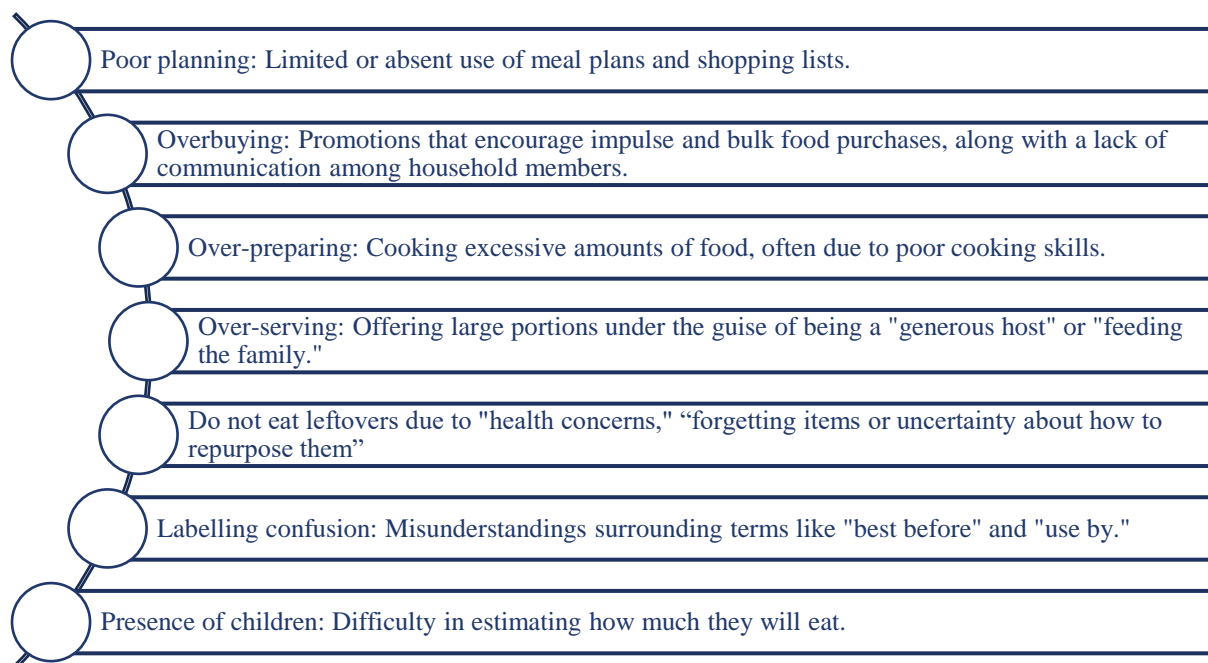


## Key Findings<sup>1</sup>

### Self-reported food waste

All participants acknowledged a degree of food waste at their households. Despite their awareness and efforts to minimize food waste, and the growing worries about the cost-of-living crisis, the reported level of food waste seems to increase especially with presence of *children*, *over buying*, and *forgetting items* (See Figure 1 for a summary).

- Most participants defined food waste as “any food or drink that ends up not eaten”.
- Respondents showed high awareness of *food waste as a national problem*.
- A key insight is that in most of the cases, participants justified food waste “in their households” as the responsibility of “others”.
- Most participants reported negative feelings of “guilt” when they throw things away.
- Most participants associate *saving money as a reason to avoid waste*. Others also recall “global” issues, such as poverty, and people in need.
- All participants showed motivations to *reduce food waste and engage in composting*.



**Figure 1** Summary of the most common reasons for food waste.

Note. This figure focuses only on the most common reasons.

<sup>1</sup> The findings are not exhaustive, but a selection of the discussions, nor are they discrete but overlap.





## Motivations to engage in zero waste journeys.

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In this section, we explore the motivations and considerations that underpin individuals' decisions to reduce food waste and engage in community-led composting schemes. The analysis of the findings revealed three primary categories of motives: self-motives, social motives, and environmental motives. These motives serve as guiding principles that influence the choices people make, reflecting a complex interplay between personal aspirations, community values, and ecological awareness.

### Personal Motives

Participants consistently cited personal goals as significant drivers behind their food choices.

- Many participants expressed the desire *to lead healthier lives, lose weight, or address specific dietary concerns*.
- One participant emphasized the importance of *low-sugar options* as they embarked on weight loss journeys: *"I'm trying to lose weight, and low-sugar products help me in this."*
- This focus on personal health extended to participants' financial considerations, as the majority mentioned *saving money* as a key reason to reduce food waste.
- Participants discussed their strategies for streamlining shopping trips and making cost-effective choices. They sought value for money, as one participant noted, *"Cost is another consideration, and I try to find good value products."*
- When asked about their *motivations to recycle* – participants cited similar reasons, including *saving money, feeling good/avoid guilt, and maintaining an overall healthy lifestyle*.

### Social Motives

Participants frequently articulated social motives as a pivotal influence on their food choices. The desire to back local businesses, contribute to community well-being, and engage in fair trade practices was a central theme.

- Participants expressed their support for local businesses, even when it came at a higher cost. One participant mentioned, *"We have two vegan cafes, and despite not being vegan, we choose to support them because we believe in their mission."*
- The motivation to purchase locally produced items was rooted in participants' *commitment to their communities*. They saw it to *keep money within the local economy* and foster positive working conditions.

“You feel part of the community; you feel connected.  
It's good to feel you belong in the community”.

- Beyond economic support, participants highlighted the importance of *feeling connected to their communities*. Purchasing from local vendors and engaging with local businesses created a sense of belonging and community identity.
- For some, supporting local businesses was a way for participants to *align their values with their purchasing decisions*.

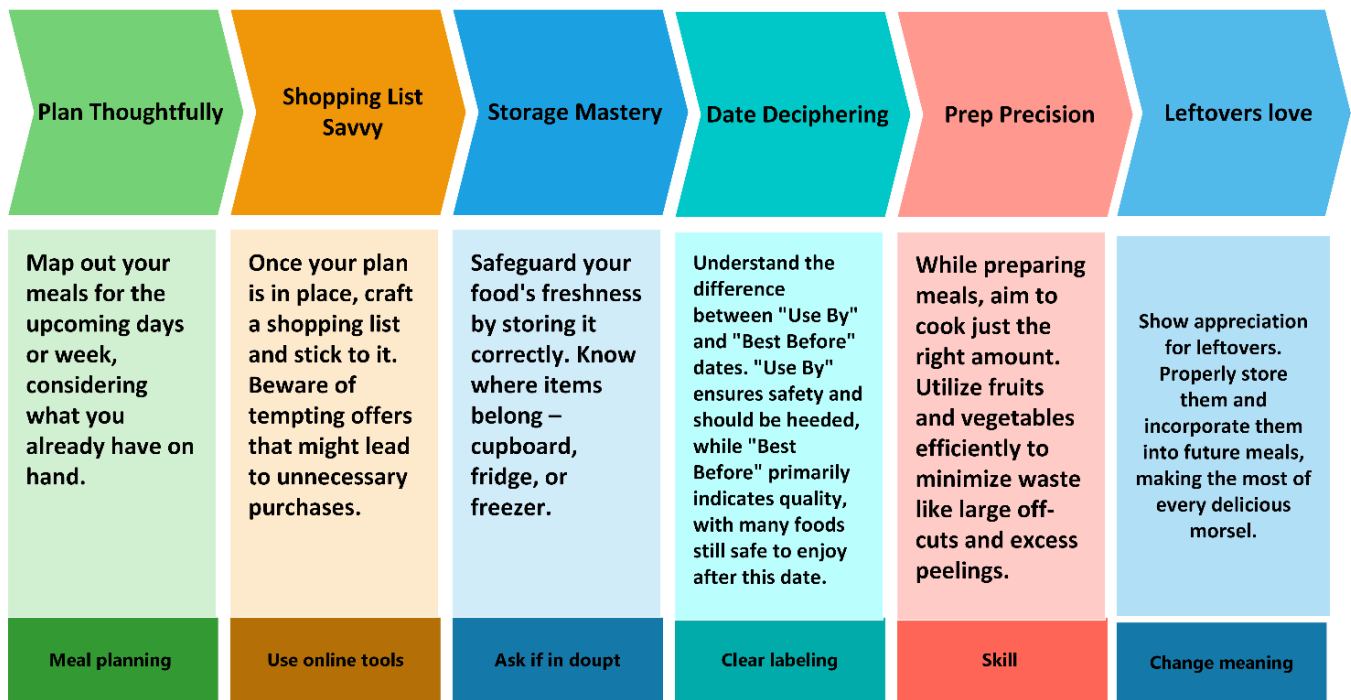
### Environmental Motives

Environmental considerations were a common theme in participants' motivations. They demonstrated a strong commitment to minimizing their personal footprint through reducing food waste.

- Participants recognized the environmental impact of food transportation and delivery services and sought to minimize it by shopping locally, noting that, "*Whenever you use transport, it's using resources.*"
- They also exhibited a preference for sustainable practices, avoiding excessive packaging and striving to reduce food waste.
- Participants expressed their desire to make responsible choices to through buying, noting that "*We try not to buy too much of anything and avoid wasting food.*"
- Participants were mindful of their choices to reduce waste and engage in composting. They do not think of composting in isolation of the other decisions they make throughout the food consumption journey.
- Some individuals used composting to release themselves of guilt associated with wasting. This underlines that *people may use composting as an excuse to avoid negative feelings* and the need for addressing the root causes of food waste rather than relying on composting as a superficial remedy.

These findings underscore the multifaceted nature of motivations. Individuals draw inspiration from various sources, such as personal well-being, community support, and environmental consciousness, to inform their choices. The integration of these motives contributes to the promotion of sustainable

practices and fostering sustainable living. However, motivating people to engage in composting food waste should start with preventing it. Figure 2 provides some consumer generated tips to tackle food waste.



**Figure 2** Consumer-generated tips to reduce food waste through the journey.

### *Composting as social practice: materials, meaning, and skills.*

In the realm of sustainable consumer practices, the act of planning and purchasing food goes beyond a mere transaction; it becomes a holistic social practice infused with materials, imbued with meaning, and underpinned by a wealth of knowhow. This multifaceted section unravels these elements and their profound implications for food waste and composting.

#### **Materials: Nurturing Composting**

Participants unveiled a spectrum of *practices and materials* composed into their quest to reduce waste, foster composting, and minimize their ecological footprint.

- From *fridge* organization and batch cooking to the use of a *kitchen blackboard as a shopping list*, participants exhibited the use of several tools and materials to manage their food.
- One participant embarked on a journey of composting by introducing *large rolling drums* in a community playground.

- Participants embraced community-supported agriculture, like the "Growing Community" scheme, which brought locally grown organic fruits and vegetables right to their doorstep. This not only simplified their shopping but also fortified their ties to the *local food ecosystem*.
- When presented with different solutions, participants illuminated their preferences, each influenced by a blend of control, education, and environmental considerations.
  - For some, *in-house composting* stood out as the choice, as it allowed them full control over the process, akin to nurturing a personal garden.
  - Others favoured the visibility of *multiple composting bins*, viewing them as a form of *educational theatre*. This approach allowed the community to witness the gradual transformation of waste into nutrient-rich compost, emphasizing the patience required for nature to work its magic while also mitigating the high costs associated with advanced composting machines.
  - Most participants saw value in a more advanced community-led scheme that uses technology to streamline the composting process and eliminate the barriers of space, and odour. However, concerns echoed about the ecological footprint of *high-tech composting machines*. Participants questioned the energy consumption, the source of materials, and the availability of spare parts, highlighting a discerning outlook towards sustainability.

### Meaning: From Moral to Significance

Composting, for many individuals, was not merely a task but a deeply meaningful and often emotional choice. It transcended the realms of practicality, signifying a *moral commitment* to environmental responsibility and an acknowledgment of the pressing issues surrounding climate change.

- One participant articulated this connection succinctly, saying, "*We eat organic, and we take food and recycling and waste, I would say even fairly seriously. I'm quite aware of climate change issues as well.*"
- Their concern was not limited to environmental issues; they lamented the massive levels of waste in consumerist societies, where *perfectly functional items are discarded*. It underscored the depth of their commitment to reducing waste and reusing resources.
- Participants described food waste not only in terms of leftovers or discarded food but also in the context of plates left with uneaten food, primarily from their children. This nuanced view illustrated their *holistic understanding of food waste* in the context of their daily lives.

- Another insightful finding underlined the composting conundrum. "*I will compost it, so it's okay to waste.*" This mindset can sometimes blur the line between responsible disposal and tossing perfectly good food.

"Composting is connected to every decision in the food consumption journey, from planning and shopping to storing, preparing, eating, and utilizing leftovers."

### Skills: The Power of Expertise

- Participants revealed their *expertise*, *competence*, and *insights* in understanding the impact of their practices on health, the environment, and social well-being. This can be understood given the profile of participants (See Appendix).
- One participant brought to the table a background in organic farming and food production, offering valuable knowledge about organic farming practices, and how it informs composting.
- Another participant's passion for *cooking*, combined with formal *training*, equipped them with the *skills* needed to prepare meals thoughtfully and reduce food waste.
- Participants showcased their education, experiences, motivation, and financial resources as the pillars of their ability to make informed and sustainable choices.
- Delving deeper into the world of composting, participants revealed a nuanced approach. They would set aside certain types of food waste, such as banana and citrus peels, allowing them to dry out before joining the *compost pile*. This technique not only prevented unwanted odours but also facilitated a swifter decomposition process.

### Barriers, and enablers of composting.

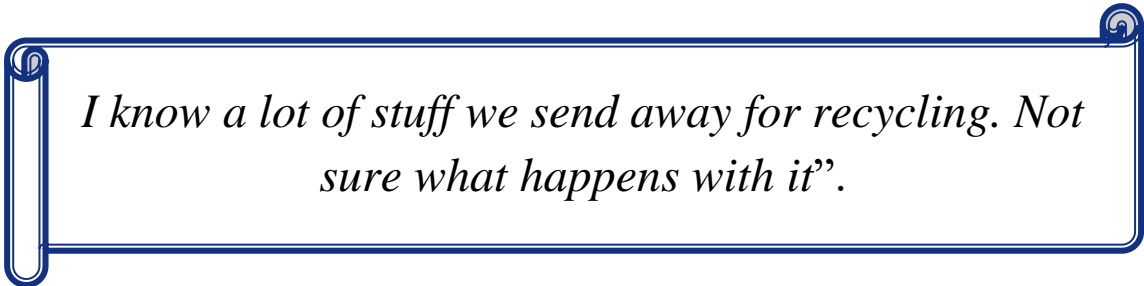
In the previous section, we explained the interplay of *materials*, *meanings*, and *skills* in shaping our behaviours. In the next section, we explore the main barriers and enablers encountered by individuals and households as they navigate the landscape of food waste and composting.

#### Barriers

- **Intentions vs. Actions and Routines:** The participants' remark, "*People said, 'Oh yeah, that's a good idea,' but they don't do it. Um, we do it. Okay, it's just our routine,*" hints at the challenge of translating good intentions into daily actions.



- While many individuals may appreciate the value of eco-friendly practices, it appears that the *transition from intent to routine remains* a formidable obstacle.
  - In the context of community composting, the continuity and motivation of participants proved to be significant challenges.
  - External factors, such as families moving away or facing personal tragedies, often led to the discontinuation of these community initiatives.
  - The quote, "*Got involved in something else. It's a lot of work. And we never really built up a group. Who was motivated as us,*" highlights the hurdles associated with community waste management.
  - There is a need to *challenge existing routines* and ensure that waste separation and *composting practices become the new norm* (please see the Enablers section).
- **Uncertainty about Recycling:** The participant expressed doubt about the fate of materials sent for recycling, emphasizing the need for transparency and education about the recycling process. Their statement, "*I know a lot of stuff we send away for recycling. Not sure what happens with it,*" illustrates the uncertainty that can hinder responsible waste management.
    - The participant's observation of bags left lying around, often torn open and ravaged by curious foxes, reflects the need for composting management and control.
    - Their quote, "*So often bags are just left lying around, split open. The foxes will open them, and you can see it's just not very much in people's awareness,*" underscores the pressing need for increased public education and awareness campaigns.



*I know a lot of stuff we send away for recycling. Not sure what happens with it”.*

- **Space Constraints:** people experience with space limitations, such as their narrow balcony and concerns about smell, reveals the challenges of home composting.
  - Their quote, "*Well, space. First, we could have it on the balcony but it's actually quite big. The balcony is quite narrow, not much wider than the stable,*" highlights the physical constraints that impede responsible waste management.
  - This supports the need for an outside-based composting that address the issue of space in *flats*.

## Enablers

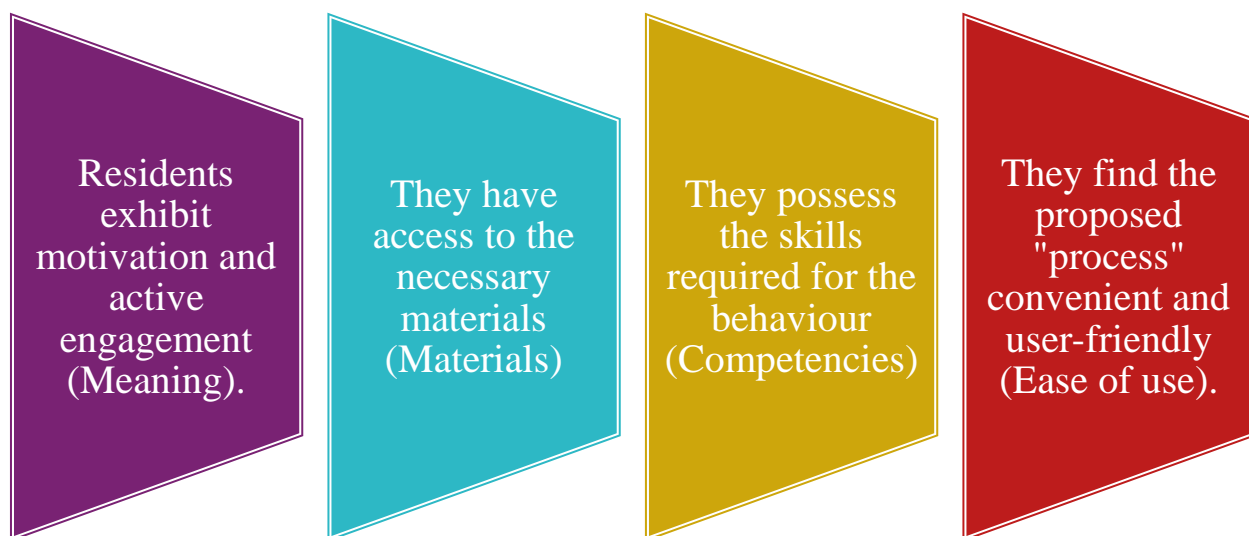
- **Make it easy:** participants showed initial resistance to the use of composting machines, and how it will be managed. Thus, making it easy is an important enabler. The following points were summarised based on participants' expectations.
  - *Streamline processes:* Simplify recycling and composting with easily accessible bins, user-friendly systems, and free liners.
  - Provides a small/internal caddy that food waste is stored in and then used to transfer to a larger container for composting. So, residents put their food waste into small kitchen caddies and periodically transfer their food waste to a larger communal composter.
  - *Convenience:* Providing convenient bags or liners for waste disposal on the go emerged as a potential solution to encourage responsible waste management. Convenience plays a significant role in motivating individuals to adopt eco-friendly practices.
  - *Gradual transition* is acknowledged as a more feasible and effective approach. Start with small actions and encourage the community to progressively.
  
- **Education as an Enabler:** Educating residents about processes and the outcomes is recognized as a key enabler.
  - Equip the community with the skills and knowledge necessary to embrace sustainable food practices.
  - "*Learning to cook, it's very important.*" - Developing cooking skills is seen as an enabler for reducing waste coming from "leftovers".
  - *Cultivate new habits:* Use techniques like prompts, feedback, and incentives to prompt individuals to engage in composting, breaking the cycle of old habits.
  - *Target life transitions:* Leverage significant life changes, such as moving or starting a new job, as opportunities to introduce sustainable practices.
  
- **Engagement vs incentives as an enabler.** Participants highlighted that recycling doesn't necessarily require financial incentives, but long-term and intrinsic motivation can be a powerful driver. The key insights underlined by participants are summarised as follows:

- Connect with the community through social influence, helping individuals find meaning in sustainable practices (e.g., “*You neighbours saved up to 20 pounds a week through reducing their waste, you can too*”). Such message should be data driven.
- Rationale messages: Offer information on *self-efficacy*, showcasing the tangible impact of composting on the environment.
- Evoke positive emotions: Encourage hope and pride in the community, highlighting the difference they can make through composting.
- Address negative emotions: Raise awareness about the environmental consequences of excessive waste, such as *guilt* associated with contributing to landfill.
- Loss aversion: Employ loss-framed messages to underscore the value of reducing waste, focusing on what could have been consumed.
- Local perspective: Emphasize local impacts to make composting more relevant and relatable.
- Develop community advocates: Identify and engage advocates who can promote and facilitate the adoption of sustainable practices within the community.
- Promote community visibility: Encourage the use of clear bags for waste, making it transparent and creating a sense of responsibility among community members.
- Regulate with community sovereignty in mind: experiment with ways to reduce food waste and composting while respecting the preferences and autonomy of its members, including those who “*prefer the slow composting processes in their own balcony*” compared to technology-based solutions.

"Well, I think people need a lot of encouragement. We're a very mixed block, and I think families have other priorities."

## Conclusion and Ways Forward

In the quest for more sustainable food consumption, stakeholders can play a significant role by focusing on the dynamics of social practices, the meanings associated with them, and the development of essential skills. This preliminary report reveals insights derived from residents, aiming to reduce food waste and encourage community-led composting and recycling initiatives. Overall, from a social practice lens, this report shows that successful community-led schemes will be realized when the following four elements are embedded (see Figure 3).



**Figure 3** Key elements of a successful community-based scheme – from residents' perspective.

Embarking on the next phase of this project should involve the introduction and experimentation of an ALL-IN-ONE solution that empower community-led schemes with technology. This approach has garnered a positive reception during interviews and community events, particularly among residents in flats, as it addresses challenges related to space, time, and smell associated with traditional composting methods. It also focuses not only on motivating but facilitating and maintaining sustainable consumer behaviours over time [10]. In summary, the ALL-IN-ONE solution could offer numerous advantages:

- *Behaviour Change*: Integrating waste and composting in a smart system can yield valuable data for implementing real-time behavioural change interventions. This can be achieved by delivering timely and tailored messages through a user-friendly app.
- *Space efficiency*: Residents in flats can actively participate without the constraints of space.

- *Time optimization and smell mitigation:* The incorporation of technology streamlines the composting process, making it more efficient and can help address concerns related to unpleasant smells, ensuring a more pleasant and hygienic environment.
- *Community engagement:* The proposed solution fosters a sense of community through co-creation, encouraging residents to actively contribute to their sustainable future.

To ensure the success of this pilot project, co-creation and strategic partnerships are crucial. The collaborative efforts of key stakeholders—residents, researchers, NGOs, local councils, housing associations, technology providers, and app developers—will be pivotal in shaping and establishing effective and generalizable solutions.



## Appendix

### Characteristics of Participants

Participant #	Gender	Age	Ethnicity	Household size	# of Children	Shopping responsibility	Building (floor)	Employment
1	M	78	White	2	0	Shared	9 <sup>th</sup>	Retired
2	F	n/a	White	4	2	Full	1 <sup>st</sup>	Full time
3	F	n/a	Bengali	4	2	Shared	8 <sup>th</sup>	Full time
4	M	n/a	n/a	3	1	Shared	n/a	Full time
5	F	n/a	White British	3	1	Shared	n/a	Part time
6	F	42	White German	3	0	Full	9 <sup>th</sup>	Full time
7	F	31	white European	2	0	Shared	2 <sup>nd</sup>	Full time
8	M	72	white European	1	0	Full	9 <sup>th</sup>	Not working
9	F	40	White British	2	1	Full	14 <sup>th</sup>	Full time
10	F	28	white European	2	0	Shared	2 <sup>nd</sup>	Full time
11	F	78	white British	1	0	Full	12 <sup>th</sup>	Retired
12	F	28	white European	4 (shared)	0	Full	Ground	Full time
13	F	64	white European	2	0	Shared	13 <sup>th</sup>	Full time
14	F	36	white European	1	0	Full	n/a	Full time
15	F	n/a	White European	4	2	Full	Ground	Full time

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Dr Sayed Elhoushy  
Queen Mary, University of London.  
School of Business and Management  
Department of Marketing  
Email:

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