Food waste research report Online research community key findings

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Overview

Key findings and methodology

Introduction

Background

This research explored people's **attitudes and behaviours around food waste**, to help inform the design of future campaign activity and interventions aimed at reducing food waste across Essex.

Research approach

An **online research community** was set up for 15 participants from across Essex to participate over a two-week period (9th-22nd May).

Participants shared insights in response to a range of activities including surveys, diary entries, photo/video uploads, and provided feedback to questions and concepts. Participants received a £50 payment as a thank you for their time, with opportunities for bonus payments to further encourage participation.

A small **virtual focus group** was also held to delve deeper into particular themes and explore ideas further.



Research participants at a glance



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Headline findings

Drivers of food waste

- Lack of planning (e.g. shopping lists, meal plans)
- Lack of time and energy
- Disruption to plans/routine during the day or week
- Lack of storage space or organisation of food
- Children changing mind about what they will/won't eat
- Lack of knowledge around how best to store and use up food
- Cooking too much food not measuring portions
- Catering for guests
- **Dividing time** between home and staying with a partner

Barriers to reducing food waste

- 'Life' gets in the way
- Time limitations particularly those both working and looking after young children
- Living alone perception that food quantities in supermarkets don't cater for single people
- Living with housemates lack of space and different behaviours under one roof
- Life changes e.g. having a baby
- Health conditions can influence energy/ability to cook
- Short expiry dates on food
- Food bin not large enough for bigger households

Interventions to reduce food waste

This includes: 1) Support needed to reduce levels of food waste; and 2) What's needed to encourage people to dispose of food waste in a more environmentally friendly way

- **Information** e.g. around shelf life, preserving food, portion sizes etc, with **targeted campaigns**
- Tips and ideas for planning/using food up, time and cost saving resources which reduce waste, support to plan and organise most effectively within means
- **Community-led initiatives** e.g. community composting, online space for local residents to share tips, tricks and ideas

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Food waste journey

The journey below highlights the steps involved in purchasing, consuming and disposing of food. There are several key factors & behaviours at each stage which influence the level of food waste produced.



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A behaviour change framework



COM-B: a behaviour change framework

The COM-B model allows us to better understand the drivers and blockers of behaviour.

What are the *capabilities* for individuals to reduce food waste? (Are they physically capable and do they have knowledge as to how to do this?)

What are the opportunities for individuals to reduce food waste? (Do they have the time/resources to do this? How might social/cultural norms or others in the household influence?)

What are the *motivations* for individuals to reduce food waste?

(Is this something they want to do and how might intent and impulses influence this?)



COM-B: a behaviour change framework

Steps involved in seeking to promote behaviour change:

- ✓ Identify target audience and desired behaviours, and scope of 'what's possible'
- ✓ Develop hypotheses around potential barriers and triggers to desired behaviour
- ✓ Carry out research to explore behaviours and barriers
- > Apply COM-B to confirm or challenge hypotheses and identify most significant barriers
- > Identify suitable interventions to overcome barriers and promote desired behaviour

A scoping workshop which included identifying key audiences and behaviours and developing hypotheses was carried out as part of the research design process.

With the research now complete, this report will use a COM-B approach to highlight barriers to behaviour, and present recommendations for interventions which are aimed at promoting desired behaviours around food waste.

A COM-B approach to food waste behaviours

Insights from research participants highlighted several key drivers and blockers around food waste:

Capability	
Psychological ability (skills, knowledge) or physical ability to enact the behaviour	 Lack of knowledge about ways to minimise waste e.g. how best to store food to keep fresher for longer, realistic shelf life of food, cooking with leftovers, suitable portion sizes etc Health conditions impairing physical ability to prepare meals etc
Opportunity Physical and social environment that enables the behaviour (time, resources, social influences, norms)	 Lack of time and energy (particularly when working and looking after young children) Income and resources to do things differently Lack of storage space or organisation of food at home Having to cater for guests Dividing time between home and staying with partner
Motivation Reflective & automatic mechanisms that activate or inhibit behaviour (plans, intentions, impulses, reflexes)	 Lack of planning (e.g. shopping lists, meal plans) Focus on minimising waste is not 'top of mind' or part of daily routine Disruption to plans/routine or changing plans on impulse (e.g. going into office, getting takeaway) Children changing mind about what they will/won't eat
	or physical ability to enact the behaviour

Some circumstances can also make it more difficult to reduce waste. This includes: living alone (it can be challenging to prepare meals for one and there is a perception that food quantities in supermarkets are too large and don't cater well for single people); living with housemates (due to lack of space and range of behaviours under one roof); and big life changes such as having a baby.



Detailed findings

Detailed research findings

Research participants...a closer look

We have developed four 'personas' to categorise our research participants into groups, based on similar demographic backgrounds, lifestyles or characteristics.

These personas are used to highlight the different types of barriers and challenges experienced by each group, and what things might help.

Squeezed families: Busy families juggling work and childcare on a limited income.

Comfortable families: Families who are relatively comfortable financially, but may still be time limited.

Young professionals: Younger people who are working and may have limited income.

Older people: Older people who are retired/close to retirement and don't have children at home.



SQUEEZED FAMILIES



KEY CHARACTERISTICS

- Busy families who are juggling work and childcare
- Limited income and may be struggling financially
- Lack of space at home is a common frustration
- Food waste is not typically considered a priority

Capability barriers

Lack of knowledge about ways to minimise waste (e.g. storage, cooking with leftovers).

Opportunity barriers

Lack of time and energy. Lack of storage space. Limited income/resources.

Motivation barriers

Lack of planning, or plans are routinely disrupted.

Minimising food waste is not a 'top of mind' priority.

What might help?

- More info around e.g. correct storage of food to preserve freshness, realistic safe shelf life of food beyond expiry dates, suitable portion sizes and easy ways of measuring portions
- Simple tips and ideas focused on time and cost saving e.g. templates for meal planning, recipes for using up common foods/leftovers, tips for food organisation with limited space
- Info on disposing of unavoidable food waste in the best way (e.g. animal feed, composting)

"With the high demands of work and with everything in today's society so fast paced, we never have time to make full on from scratch meals.

Where children are young adults and teens, you can make a meal for them to go 'I'm going out, or 'I don't want to eat that', or 'I'm not hungry', so their dinner ends up I'm afraid in the bin. Some meals you can save for the next day but very rarely gets eaten."

COMFORTABLE FAMILIES



KEY CHARACTERISTICS

- Families who are relatively comfortable financially, but may still be time limited
- · Likely to be working from home some of the time
- Adequate storage space at home
- May make conscious efforts to reduce food waste, but not always

Capability barriers

Lack of knowledge about ways to minimise waste (e.g. storage, cooking with leftovers).

Opportunity barriers

Limited time and energy.

Motivation barriers

Change/disruption to plans.

What might help?

- More info around e.g. correct storage of food to preserve freshness, realistic safe shelf life of food beyond expiry dates, suitable portion sizes and easy ways of measuring portions
- Simple tips, ideas and recipes for using up common wasted foods, leftovers/scraps
- Ideas for involving children in attempts to reduce food waste at home
- Info on best waste disposal methods and info/tools for home composting

"Lifestyle gets in the way of food wastage sometimes. Working in London or spontaneously seeing friends sometimes means that food that you planned to eat that night may have to wait a bit, and some foods just cannot wait that long."

"When we renovated the kitchen and purchased a new fridge, it was incredible how much longer our food was able to last and stay fresh...

We have lots of cupboard/drawer space to help organise the non fridge items."

YOUNG PROFESSIONALS



KEY CHARACTERISTICS

- May be living alone or in a couple or house share
- May have limited income and a lack of space at home
- Working full-time, sometimes from home
- Environmental issues may be a concern, but efforts to reduce food waste may be minimal

Capability barriers

Lack of knowledge about ways to minimise waste (e.g. storage, cooking with leftovers).

Opportunity barriers

Lack of time and energy. Lack of storage space. Limited income/resources. Dividing time between home and staying with partner.

Motivation barriers

Lack of planning, or plans are routinely changed or disrupted.

Minimising food waste is not a 'top of mind' priority.

"Since my relationship with my boyfriend I have been awful with food waste...the fact that I'm **at my house a lot less often** this means that lots of my food expires by the time I'm home again to eat it...

This challenge has really exposed how bad food waste has gotten recently in my household...

I think ultimately for me the major obstructions have been time at home, changes in routine, and an increase in **bad eating** habits like takeaways."

What might help?

- More info (as with families) including a specific focus on developing life skills around budgeting, cooking, cupboard staples etc to help young people living alone for the first time
- Online community space for local residents to access and share tips, ideas and advice e.g.
- on meal planning, ideas for using up food/leftovers, organising food with limited space
- Tips for 'planning for disruption to plans' e.g. shop little & often, keep food frozen until needed

OLDER PEOPLE



KEY CHARACTERISTICS

- May be living alone or in a couple
- Retired and have time to plan and prepare meals
- Adequate storage space at home
- Costs may be a concern

Opportunity barriers

Catering for guests/

visitors may increase

levels of food waste.

• Likely to make conscious efforts to reduce food waste

Capability barriers

Knowledge about ways to minimise waste (e.g. storage, cooking with leftovers) is good.

Physical health may be a barrier.

What might help?

- Knowledge sharing with others around tips and ideas for hassle free ways to use up leftovers
- Encouraging guests to take leftover food home with them
- Ensuring food is stored in the best way with good organisation of food items
- Tips and ideas for making money go further with food purchased

Motivation barriers

Changes to plans.

"No problem using up all the food as I freeze or create meals out of leftovers, lettuce etc is fed to my tortoise in the summer. As a child growing up in World War 2 I do get frustrated when I have visitors who waste...

Frustrated that supermarkets do not sell portions for one cheaply...with regard to shopping for individual portions it's not just the supermarkets but individual family butchers, green grocers, who make it cheaper to buy in bulk which isn't fair."

1. Planning

Most participants did some level of meal planning, however those who didn't plan meals tended to have higher levels of food waste. This was typically young professionals or families with time constraints.

IMPULSE SHOPPERS: Lack of planning, try to get what's needed based on impulse/memory/rough ideas



PLANNERS: Check cupboards before going shopping, write a list, plan meals for the week

Factors impacting on planning include:

- Busy lives/limited time and 'headspace' to plan ahead
- **Personality type** not a planner & more likely to go on impulse
- Life changes e.g. new baby, change in employment etc can mean those who were 'planners' find this more difficult
- Frequent disruption to plans (e.g. working late, last minute plans with friends, changes to children's schedule)



"For years now **we have been great meal planners** - every week we would map out exactly what we would eat for dinners and lunches that week (both work from home full-time) and **we'd hardly ever have unused food that went off.**



Now we have a baby this has all been much, much harder! Having the time to cook meals from scratch is a lot harder.

We plan our meals still, but if we're having a rough night trying to settle the baby, we **definitely don't hesitate to abandon what we'd planned to make**, and end up eating something easier/more convenient or worst case getting a takeaway. We push the uneaten meals into the next week but after a while it's **becoming hard to use everything up** on schedule."

TAYLOR: FOOD WASTE CHALLENGE



Taylor* is a young professional who lives in a city centre flat with her partner. Taylor works full-time and in regards to planning says *"we find it difficult to find the time to do the food shopping, so pre-planning always gets forgotten and we just wing it."*

Before the food waste challenge:



THE CHALLENGE: We have made it our goal for this weeks' shop to do a list & stick to it!

"Today before we went to the supermarket we sat down & wrote a list! This is mostly unheard of for us. We did a stock check & wrote down only the items we know we'll definitely need over the week.

Surprisingly our shopping came to less than usual and we didn't forget a single item (that we've noticed at least). Honestly don't know why we don't do this every time but it's our new aim!"



A campaign highlighting the **benefits** & cost saving of planning ahead could be an effective way to encourage people to plan before they buy.

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Transcription for the audio on the previous slide:

"No, we don't plan our shops unfortunately. We go completely off impulse or what we remember we've run out of, which often results in us getting home with something missing all we've forgotten something. We're just unorganised. Unfortunately, we don't meal plan. We go completely off what we're feeling when we're in the shop and what the shop has".

What might help?

Planning

'Opportunity' barriers which impact on planning (such as limited time and energy and lifestyle factors) are difficult to overcome. However there are ideas which may help to reduce levels of food waste while boosting motivation to plan, and saving time and energy later in the week.



Time and cost-saving resources



Planning for disruption/ contingency plans

Investing time when planning can **save time and energy** later on. Helping people to **plan before they shop** could include developing a range of set **weekly meal plans** with required shopping list (for a range of diets & household types), which focus on **quick and easy, low cost** meals.

- Helps save time thinking of meal ideas, and keeps costs down
- Meal plans for single/small households could include meals which use same ingredients in varied ways to use up items sold in large portions
- Stories such as Taylor's could be shared on social media to encourage others

"We started to plan meals in the week that used **similar ingredients** so we know there **wouldn't be any wastage**. I.e. buying a box of mushrooms and making a bolognaise and risotto in one week!"



As well as utilising existing resources, could there be opportunities to partner with **culinary students** at local colleges to develop meal plans?



How can young people living alone for the first time be supported to **develop life skills** around shopping, planning, cooking etc? Plans change and get disrupted, and this isn't always in people's gift to control.

But if this is happening regularly, can we support people to **'plan for disruption'** or have **contingency plans** in mind to avoid food going to waste? This might include:

- Shopping little and often where possible to only get what's needed a couple of days at a time
- Keeping food frozen until the day it is needed (avoiding urgency to use up fresh food if plans go awry)
- Ideas for alternative uses for food that doesn't get used when planned

Lydia* has started doing some of these things in an attempt to reduce waste:



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Transcription for the audio on the previous slide:

"In recent weeks I've been trying to kind of like buy in small amounts. So I stay quite a lot at the moment at my boyfriend's house. So I know that I'm not eating the food that's in my fridge as often. So what I'm doing is I'm trying to be a bit more sustainable and buy meals that will last or meals that can freeze or meals that once I make them up or they'll last a bit longer. That's actually what I'm trying to do at the moment, is trying to buy for smaller amounts of days so that by the time I come to my fridge, not all of it is out of date and that I'm not wasting too much food. I did find that when I was going shopping in person for around two weeks of food, I would buy a lot extra, or I would buy a lot less than I would have to keep making trips back and it would just frustrate me. And things would go out of date in the meantime".

2. Shopping

Shopping

There are some specific challenges with food shopping experienced by particular groups, including those living alone and those struggling with the increasing cost of living.

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Drivers of food waste at the 'shopping' stage of the journey include:

- Items sold in **large quantities** in supermarkets (challenging for those in single/small households to use up in time)
- Limited budgets influencing choices and purchases
- Over-buying food
- Short shelf-life on fresh products

Online shopping

Some prefer to shop online to fit around **busy lifestyles**, and find that it helps them to better stick to their list and **reduce impulse purchases**. But there are still frustrations such as substitutions and short shelf-life of products, which seem to be **accepted 'trade offs'**.

"Doing an online shop you often find some meats/food goes out of date very quickly. This can be frustrating when you have all your meals planned for the week." "Its such an annoying feeling when you have to admit that some veg and fruit has gone past its life expectancy and you have to get rid of it... it makes me so angry that it's wasted. We have tried "chuck it all together dinners" to make things work but we struggle with it, which is why we started using Hello Fresh."

"We are probably overshopping rather than under-shopping, basically to try and make sure that the fridge looks full and that there's always food in it to pick from or eat." "Frustrated that supermarkets do not sell **portions for one cheaply**...it's not just the supermarkets but individual family butchers, green grocers, who make it cheaper to buy in bulk which **isn't fair**."

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Rising cost of living

Not everyone connects wasting food with wasting money, and this impacts on behaviours and levels of waste.

Cost-displacement

Frustrations with supermarket portion sizes was cited by numerous participants. Some tended to **buy larger portions** as they felt this was **better value for money**, even when they knew there was a good chance it would be wasted.

This suggests a **stronger desire** to avoid wasting money at the **shopping stage** than the disposal stage. This may be because there is a more **tangible and immediate impact on finances** at the shopping stage, whereas this **feels more 'removed'** when disposing of food and people don't necessarily **connect** throwing out food with wasting money.

Ultimately, **money is wasted either way** and this is a challenge, but the approach some are currently taking is potentially just **displacing costs** further down the line.

"Minced beef is a good example. The smaller the packet, the more expensive it is. I personally buy a bigger packet and give myself and my partner whatever we want and throw the rest of it in the bin as we don't fancy cold beef the next day...If smaller packets were more accessible and cheaper, I think people would be more inclined to buy them and waste less food."

"It's not cost effective buying loose fruit."

"Naturally you go for the larger product because you are getting better value for money, but ultimately there is normally wastage."



The rising cost of living was mentioned by several participants, and this is a real concern for some.

"With the cost of living going up, I'm having to buy more and more long lasting items so that I can keep eating towards the end of the month."

"With the cost of outgoings and living it's hard to buy **nutritional foods to make yourself.** A lot [of my income] goes on **ready meals** as that's a portion so no wasting. Unfortunately in today's society there isn't time to batch cook when you've come home from a 12 hour work load."

YOUNG PROFESSIONALS

Male participant aged 18-24, living alone



So I've just actually been for a shop and I'm currently Transcription for the audio on the previous slide:

"So I've just actually been for a shop and I'm currently cooking, I had to do quite a small shop just because I'm trying to watch how much I'm spending at the moment. I did go to Tesco because I needed to get shampoo and conditioner as well, and Aldi don't do any vegan ones. So I just did a small shop at Tesco. So I got my usual things... my main focus at the moment is trying to get things that last longer because fresh foods are going out quicker and I'm not using it enough because I am on my own, so I tend to find I end up cooking too much or having too much in the fridge and end up having to throw it away".

What might help?

Interventions that could help minimise common pitfalls which lead to waste at the 'shopping' stage include communications focused on cost & myth busting, and ideas for dealing with large quantities from supermarkets.

Awareness raising around costs	Myth busting	Tips for using up larger quantities
 Campaign focused on cost saving and helping people to make money go further - prompt reflection on the monetary value of food thrown away Encourage reflection around 'true' value for money (i.e. if buying larger portions but throwing most of it away, this is not value for money) 	 Focus on myth busting - e.g.: Buying loose or buying from local butchers/green grocers - is it always more expensive? Is frozen veg just as healthy? Do you always have to freeze on day of purchase? Some feel a lack of control around supermarket quantities and that little can be done about this: Where buying large portions is unavoidable, what tips can be shared how best to use up and how items can prepared straight after purchase? E.g.: Chop whole veg up and freeze (this may take a little more time up from but is a time saver over coming we 	
businesses (e.g. butchers)	or ECC to partner with local /farm shops/veg stalls) to bust myths around the cost aller portions?	 Ideas for varied meals using the same ingredients in one week Tips specifically for those living alone and preparing food for one, with a focus on quick & easy, low cost meals

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Transcription for the audio on the previous slide:

"I think one of the biggest struggles with supermarket shopping or online shopping is that the quantities of the food are never really the right amount. I find that sometimes, especially with me just on my own, I'll buy something, and it could last me four dinners, but realistically I'm not going to have broccoli or cauliflower four times a week. So you know, I think that sometimes the packaging or even just the general quantities that they come in are just not the best and that's kind of something that can't really be navigated with online [shopping] or actually going into shop and buying it".

Messaging around cost

Focusing on costs could be a helpful way to encourage reduction of waste, particularly for those on lower incomes. But there are different approaches that could be taken in terms of how best to frame messaging.

Participants were shown a range of posters with different messages and asked what thoughts and feelings come to mind, and what they like or don't like.

The poster focusing on **cost** scored the **most highly** among participants in terms of likelihood that the message would make them want to 'join the challenge'.

"Money is tight for everyone at the moment...making people realise or giving facts of how much money they could be saving if they planned or thought about what they were gonna eat in the week rather than throwing it away."

This was explored further in the focus group and during the discussion, **two different options** for messaging emerged:

 Wasting money by throwing food away
 VS.
 Saving money by better planning One participant suggested this may vary for different groups:

"For younger people if you tell them about saving money, they're probably gonna find that a bit more encouraging... maybe for the older generation if you show them how much they're wasting...younger people would rather spend money elsewhere I think."

HOW MUCH ARE YOU WASTING?

The average Essex household wastes £720 every year by putting food in the black bin.



Join our challenge, save money and be in with a chance to win some kitchen goodies!



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More on messaging and motivations

In addition to costs, participants were also shown mocked up posters with messaging focused on climate change, and personal responsibility. Utilising a range of 'angles' for different audiences could help to maximise impact.



[Climate change]:"Small step towards a big challenge - moves us from helpless to hopeful."

[Personal responsibility]: "Telling people that many others are already doing something is a good way to make them think they should be doing it too...but the bit about letting the side down feels way too judgemental..." Some felt **messages about climate change** were 'overdone' and can have less impact as a result. Effectiveness of messages about the planet also **rely on good understanding & awareness** of the impacts.

Other themes discussed include **guilt**, with some suggesting this could be effective in changing behaviour if **done sensitively**.

"People starving makes me feel guilty & admire people who give practical help."

"I look at what I've got left over & think there's **somebody that hasn't got that**...I'm literally throwing that food in the bin, that somebody else who needs it could have."

Adding a **competitive element** was also felt to be helpful, as well as spreading awareness by **sharing changes/progress** with others.

"When we were doing the challenges...it made me feel better and I stuck to it, and I haven't wasted anything since...even my mum came round and said 'oh we're food wasting now are we? I suppose we should start'...so it's kind of like I encouraged them...if you see someone doing something you think I want to do that, even if its something you don't want to do, it's almost like a competition isn't it."

"A combination of competitive element, guilt trip, focus on costs etc could be a good way of reaching most people."

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What motivates you to 'be more green'?



Participants were asked to reflect on: what, or who, motivates or inspires you to think about being more 'eco conscious'? (By sharing photos and comments).

What motivates you to 'be more green'? (Cont.)

There were many similarities across participants in regard to motivations around being more eco-conscious, with several referencing 'looking after our world' for future generations. This driver appears to be particularly poignant for those with younger children in their life.

Animals and wildlife were also very prominent for younger participants, with costs being a motivator for those on limited incomes - including young professionals and squeezed families.



"My dog…I believe that like us humans, all animals have the right to live in a clean and friendly environment."

"Rising cost of energy makes me think we need to do more to ensure we aren't burning energy wastelessly."

"My friends and the futures we're all working hard for. We're all **young and all invested** in our world and it's a big driver...I'm **upset** when I feel like we might not get the same green that our parents have had...I often think of my friends and everything we hope to achieve still and it **motivates me to work harder** to look after it." "Our daughter won't have anything in the house that has palm oil in it after the recent Iceland advert. She checks everything. She was shown the video in a school assembly."



"I see a beautiful, well kept & green space...filled with trees & it's **just stunning**....makes me realise we are so lucky to have the environment we do.

Makes me think more about how I can do more to conserve the environment...about the decisions I make on wastage and recycling, and my impact on the environment."



"Starting a family and seeing the changes in climate & lifestyle from when we were children makes you think to look after the world more for the future generations!"

"ANIMALS! I am a massive animal lover.

It breaks my heart to know how some people treat the planet is ruining wild animals homes or even killing the animals."





"Engage children, they will push parents too."

What opportunities are there to encourage children to take on a more **active role** in reducing waste at home?

3. Storing

The way that people store food and the space available to them impacts on food waste. While some with adequate space still wasted food, those with very limited space tended to have higher levels of food waste.

Storage factors impacting on food waste include:

- Lack of knowledge around how best to store different types of food in order to preserve freshness, and lack of consistency of where some items are kept (e.g. some fruit in fridge and some in bowl)
- **'Trade offs'** between having food such as fruit 'out' and easily visible so that it is more likely to be eaten (especially by children), vs. refrigerating to last longer at the risk of it being forgotten about due to being more 'hidden'.

"Unfortunately 2 apples and 1 orange had gotten so soft I couldn't bring myself to eat them...We keep our apples and oranges in a **fruit basket** on the side. Grapes or berries go in the **fridge**."

• Limited storage space restricts ability to prepare and store food in different ways, and makes it more difficult to minimise food waste.

"I have to **be careful** as to what I can fit in it, and I often still find **I struggle** to get it all in [my fridge]. Smaller spaces **make it difficult** for me to buy fresh products as they often are large/not pre-portioned. Being **vegan** I also have a lot of veg intake, but **smaller fridge space** does make it more difficult."





"Fruit bowl, so we can see the fruit. This helps it get eaten in good time - and helps us catch pears before they get too ripe and kiwi before they go alcoholic!"

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Challenges with small spaces

The photos participants shared highlight some of the differences in living space and the impact this has on how food can be organised and consumed. Limited space is an 'opportunity' barrier to reducing food waste for some (particularly squeezed families and young professionals), that is more difficult to change or overcome.





"Only have a one bed

Storing

flat so kitchen is tiny hence why everything is in one cupboard."

People on a limited income & living in smaller/shared properties can be at a double disadvantage. Limited storage space can restrict ability to prepare and store foods in ways that would both make food last longer and save money (e.g. effective organisation, batch cooking, freezing leftovers).

feel we are going to eat it

all before it goes stale."

What might help?

The barriers around storing food include capability (knowledge), opportunity (storage space) and motivation (to organise and regularly review food items). Interventions which focus on information sharing, tips around efficient storage, and messages which promote cost-benefits may help with overcoming these challenges.

Information & awareness raising	Tips and ideas for storage and organisation
<text></text>	 Innovative ideas for how best to organise & store food in small spaces - how to maximise space and preserve food for longer Encourage an organisation overhaul by focusing on the potential cost-saving benefits Encouraging people to regularly 'stock check', with a particular focus on items that can get forgotten about (e.g. jars in fridge, back of cupboards) Encourage labelling of leftovers that can get 'lost' in the fridge/freezer <i>"I threw away a bag with 4 red onions in.</i> They had fallen behind a box in the cupboard and were squishy and had an unusual smell." <i>"Small amount of cranberry sauce & roasted garlic mayo found in fridge, out of date.</i>"

4. Eating

As well as lack of knowledge around how best to store and preserve food, there was also a lack of understanding and desire for more information and answers to common queries around using up food.

From participant's food waste diaries, food commonly thrown away included fruit, salad, vegetables, bread, and leftovers from meals.

- People tended to **waste more food** when they were **unsure** of things like realistic shelf life of food, how best to use up food that's about to go off, recipes for cooking with leftovers, which foods can be reheated safely etc.
- Some also suggested there can be **conflicting advice** which is unhelpful.
- Not measuring out portions at meal times also led to more waste.
- Where leftovers are saved, they **aren't always eaten.** This can be due to **safety concerns**, not wanting it the next day, or not having storage space.
- Several participants spoke of **feeling guilty** at throwing food away and often acknowledged it was **avoidable**, however **lifestyle** gets in the way.

"This morning I threw away some bread that I had accidentally left to **go mouldy** in the fridge...It was around **8 slices**, so quite a lot. I won't lie, it **made me wince** that I did it, I don't really like wasting all that much." "End of day clean-up, threw in the food waste bin: 3 teabags, crusts of 4 slices of pizza from takeaway shared with my parents this evening, one of whom hates the crust(!!) and about 1/6th of a packet of fresh spaghetti pasta which was in the fridge for over a month, left from previous cooked meal and unfortunately didn't get used up."

"You hear a lot of conflicting views...how to store/reheat things...with certain foods it really puts me off – pasta, rice...someone at work recently said she reheats pasta all the time, and I didn't think you could."

"My boyfriend often has any left overs the next day for lunch but I sometimes over think it then **gross myself out**. I think it's depending on the food if I eat it the next day or not!"





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What makes it hard?

Participants also mentioned particular circumstances which prompted increased levels of waste.



Children changing their mind about what they will/won't eat. Having a **young baby**, which limits time to make proper meals and can mean food goes out of date before it's eaten.



Dividing time between living at home & staying with a partner, meaning they aren't always in to use up food purchased.



Older participants generally had minimal food waste, however 'catering for guests' was mentioned as a driver of food waste due to buying items they don't usually eat themselves. *"We had a roast dinner tonight. My daughter has decided she no longer likes chicken so we had probably half a breast tonight and some carrots that she would not eat."*

"...I know when I have visitors, food can easily be wasted by picky eaters, although I usually do bubble and squeak or make soup with leftovers."

Eating



"Because I have such a **young baby**, some days I don't eat a lot as I don't have the **time or energy** so I can **forget about food** that is in the fridge and when I do go to eat it, the food has gone past it's consumers date and can't be eaten...Because I have **less time** to do more things, when I can find a quick solution, I will!...

[Since having baby] I've noticed I do just **throw things in the bin** that could be put elsewhere... normally in **such a rush** because she's wanting something that I don't always have that extra couple of minutes to find the recycling bags and put it in there (2). I think, as she gets older that it will become easier so I'd like to think this is **just a phase** and it'll go back to normal soon." "I'm heading to my boyfriends this evening & tomorrow so I had a quick check of my fridge. I have a few strawberries and a half can of sweet corn that I haven't eaten and are far beyond out of date as a result - it's meant I've thrown them away.

Repurposing food

Some participants were proactive in thinking of different ways to repurpose or use up food that's beyond its best, which included eating it in different ways, planting, and feeding to animals.

"Today I had to clear out the food that has sadly died on me before added the new fruit. Unfortunately 2 apples and 1 orange had gotten so soft I couldn't bring myself to eat them.

This was completely avoidable if I just hadn't over brought fruit during our last shop! Very frustrating as I often run out of apples for work but these things happen.

Luckily the bananas are going to be used for **banana bread** so I feel **less guilty** now... The banana bread went down a treat!"



"An avoidable bit of food waste! An **onion has sprouted**, so we have planted it in the hope we'll crop some more later in the season!"



"Bananas were **about to go off** so we made a banana pancake in the morning with oats, first time we had tried this and was actually quite nice!"



Eating

"Stale bread to crunchy pasta bake topping... You can easily freeze them in small batches too for future use - no need to defrost, just stick them on!"









"I am very lucky that if we have left over fruit and veg it doesn't go away it gets fed to the **Guinea pigs**!"

"No problem using up all the food as I freeze or create meals out of leftovers, lettuce etc is fed to my tortoise in the summer."



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Eating

Top tips

There were also a number of tips and ideas shared for quick and easy ways to ensure food is used up. Some of these are particularly helpful for those living alone or in small households, where there can be a higher risk of wastage with large portions.



"A lot of recipes like lasagne or ragu involve a couple of sticks of celery, but you usually have to buy a whole celery which is about 10 sticks. We just **cut the whole thing up...**divide the chopped celery into **sandwich bags which go in the freezer** for the next time we cook one of those meals, massively reducing how much celery we would waste (and how often we would need to buy it!)"

"We got fed up of wasting so much meat and vegetables because we couldn't eat them quick enough. We have started to freeze all our meat and vegetables until we need them. This reduced our waste massively!"

"Sometimes I over anticipate how much pasta I need for me and my partner so I use the *leftover pasta* for lunch the following day and add some *tuna and mayonnaise*." "We use left over meals for lunch the next day or we freeze them to use on a day that we are late home and need a quick and easy option. Left over roast dinner meat we use for sandwiches".



"Putting any meat or vegetables together in the slow cooker, just by adding a bit more of either pasta or potatoes you have a meal for the next day and if it still doesn't get eaten you can blend it and make a soup or freeze it for a base of a Shepard's pie etc."



Some foods are **regularly 'repurposed'** (e.g. bananas) while others are consistently **thrown out** (e.g. apples, salad).

Could the **'banana bread boom'** of lockdown be replicated to get recipes **trending online** for other foods? E.g. <u>salad bag pesto</u>, juicing apples or stewing to use in oats or pancakes.

MEGAN: FOOD WASTE CHALLENGE



Megan* is a young professional who lives alone, works mainly from home and is into her health and fitness. Megan is a Type 1 Diabetic, which has an impact on her diet and lifestyle.

"Because of my health and overall lifestyle, I **prefer to buy fresh ingredients** which obviously do not last as long as ambient or frozen foods...because I live alone, **I find it difficult to use up everything** as most supermarket fresh food items are sold in large quantities. You could tell me to go to a butcher to buy single portions, but because **I am on a low income**, this isn't possible...

I also find my **health conditions very restricting**...there are many occasions where I am far too tired to cook. This can last for a few days at a time with no warning which means **food does unfortunately go to waste**."

CHALLENGE: "So this week I have decided to meal prep! I usually order from HelloFresh, but I think I can save some money & do it myself! The aim is to prep 3 x meals, plus snacks, for 5 days!"

"Although I am really exhausted now, it feels great knowing I can just **relax** for the next few days and not have to cook. I think I will 100% try this again, for <u>6 meals</u> it cost me around £10!

...I am a couple of days into my meal prep and ILOVE IT! It is so nice to not have to think about what I am going to have to eat throughout the day."

PROS: Less washing up, more time to myself, cheaper, less food waste, all my carbs are counted so I don't have to spend time weighing stuff out!

CONS: Same meals for a few days (I am used to it so doesn't bother me), it takes a while to prepare everything to begin with.



MEGAN: FOOD WASTE CHALLENGE

Megan's survey responses indicate that she is **'environmentally proactive'**, and this is reflected in her lifestyle and approach to food.

While Megan's health condition can make this difficult, the challenge she set for herself during this research shows that meal prepping worked well for her to reduce levels of food waste throughout the week, as well as saving money.

After weighing up pros and cons, Megan decided this is something she would do again.



How could this story be used to highlight the benefits of planning/ meal prepping to others?



"With my fruit and veg...even though they have dates on I don't actually throw them away if they say they're out of date, I usually just look at them."

> "I weigh out absolutely everything...because of my illness I have to carbohydrate count everything, so I never overdo it on the pasta and rice...which really does help when it comes to portions and reducing my waste."

Transcription for the video on the previous slide:

"I'm just going to talk you through how I prepare for my weekly food shop. I usually order from HelloFresh, but I thought this week I'm going to meal prep. So what I normally do is write a list of things that I'm going have, I usually stick to the same meals everyday as I'm also type one diabetic, so it just makes things a lot easier for me. So what I'm going to do is go down my list and just check what I already have".

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"So as you can see there's not really much I need to buy as I already have quite a lot of things in. For example, my chicken doesn't go out of date for another five days, so that would be fine for the next few days. I just need to get a couple more bits and then I should be good for the week. So because I already had majority of things in, in order for me to begin my meal prep for the week., I'm just going to do it now. So there's nothing I really need to get. When I go shopping, I usually Shop at either Aldi or Tesco as I believe these are the most cost-effective places. I always get my meat from Tesco's and not Aldi purely because I find in Aldi meat has a really short date on them and I don't really have a big enough freezer to be able to freeze things and so yeah, I always get my meat from Tesco's. All though the packaging is quite horrendous to be honest. I also keep a lot of tinned stuff in my cupboards like tuna and sweet corn, because these have such a long date on them". "As well as things like oats, I always have oats in the cupboard, but I go through these really quickly. With my fruit and veg, to be honest, even though they have dates on I don't actually throw them away if they say that they are out of date, I usually just look at them, if they don't have mould growing on them then obviously, I won't eat them, but if they don't have mould then I will

eat them".

"With my bananas, because again, I buy these every single week, I always, always buy them when they're green, as again they do last longer. And the same with other fruits, if they're a bit firmer when I buy them, they tend to last a bit longer. The other way I am able to manage the amount of food that I waste is by these [kitchen scales]. I weigh out absolutely everything again because of my illness, I have to carbohydrate count everything, so I never overdo it on the pasta or the rice. So yeah, I pretty much by everything, which really does help when it comes to portions and reducing my waste".

What might help?

There is a desire for both 'official' information from trusted sources, and more community-led spaces for sharing ideas which are less corporate facing and 'at a distance' from council organisations.

Information providing clear guidance from a trusted source

- Clear guidance and information on **do's and don'ts** to help tackle conflicting advice (particularly around food **health and safety**)
- Information which addresses **common queries** around **storing and preserving** food, realistic and safe <u>shelf life</u>, suggested **portion sizes** for different foods and **easy ways to measure** (e.g. mug of pasta per person). This could include **specific prompts** that rice/pasta expands significantly when cooked, so you need less than you think!

"You'd need to get **food standard agencies** involved to actually give **legitimate advice**...you wouldn't want to give information and then someone get **food poisoning** from reheating rice." *"Have just measured out exactly the portions for a Vegan Kastu curry. Definitely reduced my leftovers!!!"*

Online community space for sharing tips and ideas

During the online research community, a wide range of **tips and ideas** were suggested. Several participants began **interacting with each other** and commenting on different tips and suggestions etc when they saw something helpful from others.

Could this kind of environment be recreated to **facilitate sharing of tips and ideas between residents**, which are more **community-driven**? "I think it should be like a group that's a branch from the council but not necessarily run by the council."



Camilla* measured her pasta portions as part of the food waste challenge...

"I don't like throwing food away but sometimes if I over anticipate how much food I need for a meal, I may end up throwing some of it away as it's not something I would want to eat cold or I may just not fancy it the next day."

"Last night I had pasta and mince for dinner and **measured 1 mug** of pasta which was the **perfect amount** for my meal. I had **none to waste** and I ate my entire plate!"



IDEA: Facebook group local champions

"So, most communities have online groups - Facebook communities where **residents all chat and discuss**. It would be a good idea to talk to those who run those pages and ask them to **support with delivering the message** regarding food wastage to help **save their fellow residents money**.

It is much more likely that they will listen to these people as they are **familiar**, **local**, **and a voice that is of influence** in the area. Alternatively, council reps could create Facebook groups for residents of Essex or local areas to join which **share tips**, **ideas**, **tricks** etc on how to save money, reduce waste and make the most out of food and items.

> ...What's absolutely paramount for it to hit (in my opinion) would be to make it as **non-advertised** as possible, as access to these groups will be limited if it seems like a **"do this do that"** from the council on a community page."



IDEA: Reduce Waste Cook Book

"What are the most **COMMON foods** that are thrown away? Which food goes out of date the quickest? What food is totally fine to eat past their best before? Are best befores **too strict**?

What **types of dishes** can you do with **left over food** that is about to go off? How can you **preserve food** longer?

It would be really good to have these **questions answered in a cookbook** that aims to look at the **common waste items** and how they can be **turned around**."

5. Disposing

There was a general lack of awareness among participants around who contributes the most to food waste, the scale of the issue, and the ways in which it impacts on the environment.

Myth busting...true or false?

Recycling food waste can produce energy to power homes (T) 100% got this right

Food waste put in a food recycling caddy all ends up in landfill anyway (F) 92% got this right

Food waste has no impact on climate change (F) - 85% got this right Food waste produces greenhouse gas (T)

Only **54% got this right**, suggesting a lack of understanding around how food waste actually impacts on the environment

The majority of food waste in the UK comes from supermarkets (F)

Only **31% got this right**, suggesting most people don't realise how much individual households contribute to food waste

£48.70

= Participants' average estimate for how much food (in £) the average household throws away each month.

[The true answer is £60].

Around 25% of what we put in our general rubbish bins is food waste. Participants were asked to estimate how much ECC would save per year if we didn't put ANY food in general rubbish bin.

Most people (7 participants) estimated £5-7m, followed by £2-4m (5 participants). *[The true estimation is £9.7million].*



Participants tended to underestimate the contribution of individuals towards food waste, and don't necessarily understand the **connection between food waste and climate change**.

What can be done to **enhance understanding** around this issue in order to increase feelings of **personal responsibility** around food waste and the environment?

What is 'food waste'?

There are varying interpretations of 'food waste' which influence how different foods are disposed of.

Inconsistencies in the things people shared and how they talked about waste suggest there is a **limited interpretation** of what is meant and understood by 'food waste'.

E.g. Several participants report **'always using up leftovers'** and not wasting food, but then report **throwing out items** such as bread, fruit and vegetables which have expired.

The **immediate and dominant understanding** of food waste for some appears to be:



How can this be **challenged** to broaden people's understanding?

Participants were asked which of these items they would class as 'food waste', if any:



- These results support the finding that there is a **limited interpretation** of food waste, with fewer people classing things such as bread crusts and expired food as food waste.
- In addition, participants were asked to rank these food items as either avoidable, possibly avoidable or unavoidable waste. **31%** participants ranked 'expired bag of salad' as 'unavoidable waste', while **15%** ranked 'uneaten leftovers' and **38%** 'out of date unopened yoghurt' as unavoidable. These responses may indicate a **lack of feeling of personal responsibility** around food waste.

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DISDOS

Where food waste ends up

Not all food waste is treated equal...while most participants were using food bins at home, not all of their waste ended up there.

Participants were asked to sort a range of images based on how they would dispose of these items – in the general rubbish, recycling, food bin, compost, or repurpose.

Many participants spread their food waste across **both the general rubbish and food bin**. When digging deeper around **decision-making processes**, reasons for this included:

Misinformation	Ease of disposal	Size
Misinformation about what food can	Ease of disposing of	Size of items (e.g.
go in food bin or compost (perception	items quickly (self-	half a loaf of bread)
that parts of food that are inedible or	described by some	which may fill up
'too hard' can't go in food bin).	as 'laziness').	food bin quickly.

Sarah* talking about disposing of a chicken carcass in general rubbish:



"...I was always under the impression that if something can be **broken down by bugs/insects** in a compost bin, then it can be disposed of into a compost bin whereas if something, like chicken bones, cannot be broken down by insects, it must go into the main rubbish bin."

"I didn't know you could put egg shells in food waste."

[Participant response to sorting task:]

Disposi



Transcription for the audio on the previous slide:

"Well I think it's more the size and the fact that it's quite hard and everything I thought ahh surely that can't go on. I would think food waste to be things that you eat".

What might help?

Capability barriers

Opportunity barriers

Motivation barriers

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Off-putting smells, habits, and a lack of planning all play a role in food waste disposal. A campaign to raise awareness and share ideas could also help with this.

There is **significant misinformation** about what food can go in the food bin or compost, which could be solved by an awareness raising campaign aimed at busting common myths.



Those living in flats have limited access to composting, and recycling facilities can be inadequate. Larger families and households also have **frustrations** with the size of food bins. **Improved access** to facilities, including **communal composting** for flats, may help with this.

"Lots of people end up using their black bins....[food bin] needs to be expanded for larger families or somewhere where they have the option to dispose of food waste that could be recycled."

"[Food bin] not collected often enough and this means that food goes rotten and we are dissuaded from using it by the smell in the house and that between 6 of us [house share] it fills up too quickly."

Disposinc

A number of ideas have been suggested for reducing levels of food waste. But for Worst **unavoidable waste**, how can people be encouraged to dispose of this in the best way? General **Clearer information** about available recycling facilities rubbish Further exploration of access/barriers to food recycling facilities (i.e. for flats) Promotional campaign about the benefits of composting Food waste bin Explore opportunities for communal composting "We have decided we would like to do [composting] but not right now. We currently live in a flat so would be impossible but once we move to a house with Composting a garden this will be one of the steps we take to lower our waste even further." Best



IDEA: Community compost bins

"So my idea came about when I realised that in my garden it is set up so that having a compost bin would be **unsightly**, **against tenancy** and probably **more of a mess** than a help.

I think that compost bins are some of the **most useful ways** to dispose of natural waste and of course they're **great for lots of wildlife** and insects and improve the biodiversity of an area. So my idea especially for people limited by their tenancies, limited garden space, living anywhere where this is not a possibility is having **communal compost heaps/bins**.

These could be **located in the local areas** and should have **signs listing what is appropriate** to put into these bins for anyone that's unsure. In our household we found that the green bins weren't collected often enough leading to people to stop using it as it smelt quite quickly and filled up in our house of 6 quicker than we could get rid of it.

A compost heap would significantly improve our food waste situation and actually if this idea was implemented may **encourage good sustainability** efforts and encourage people to **invest in their community** more."



Recommendations

Overview of suggested interventions to support reduction of food waste, based on the COM-B framework.

Summary of key recommendations

Interventions should aim to enhance knowledge, promote tips and resources with a time and cost saving focus, and encourage greater planning ahead. For those with busy lives in particular, advocating 'small steps' and making changes as easy as possible will help to embed longer-term positive behaviours.

Capability

Key capability barriers: Lack of awareness, knowledge and understanding.

Opportunity

Key opportunity barriers: lifestyle factors and lack of time, space, or resources.

Motivation

Key motivation barriers: reducing food waste not 'top of mind' or part of routine, lack of planning, and disruption to plans.

- Awareness raising campaign providing information and answers to common queries to enhance knowledge around food storage, safe shelf life, portion sizes etc, as well as broaden understanding of what is meant by 'food waste'
- Myth busting and awareness raising around the environmental and cost impacts of food waste, and efficient food waste disposal methods
- Providing **tips, ideas and resources** focused on **time and cost saving** and making it easy to reduce food waste (including making the most of **small spaces**, meal ideas, managing large portions of food from supermarket, and support for younger people living alone for the first time to develop **life skills**)
- Online community space which is more resident-led, to facilitate sharing of ideas and promotion of 'success stories'
- Community composting and review of access to food recycling facilities
- Encouraging planning by promoting the time and cost saving benefits and stories from others, including tips and ideas for 'planning for disruption'
- Utilising a range of motivators for different groups as part of campaigns (e.g. future generations, environment and wildlife, cost savings)
- Encouraging involvement of children to take a more active role in reducing food waste in the home



Appendices



IDEA: Ready steady PREP

"MY IDEA: Ready steady PREP is an Essex based company that aims to take away the stress of **meal prepping** for you! Each week, you will reserve 3 or 5 x breakfasts, 3 or 5 x lunches and 3 or 5 x dinners for 1,2,3, or 4 people using a specialist app. There will be Meat, Veggie, Vegan, and Free From options to suit all dietary requirements, as well as full nutritional information for each meal.

There will be many establishments across Essex, where **food will be prepared fresh ready for 2 x collection days per week**. Meals can also be delivered for an additional charge for those who work nights, are unable to travel or have other commitments. Delivery times can be selected prior to ordering. For collections/deliveries on Sundays, all meals must be selected by the previous Thursday so Ready steady PREP can ensure the correct amount of ingredients are purchased. The same will apply for collections/deliveries on Wednesday, where meals must be selected by the previous Monday. The reason there will be two collection/delivery days, is so food is fresh and reduces the chance of food getting thrown away. Each week there will be **different recipes for each day**, so you will not get bored of eating the same each day! Recipes will be approved by top chefs and prepared by qualified cooks.

All meals will be a mixture of hot and cold with instructions on how to heat. They will also be served in **recyclable boxes** with NO plastic cutlery provided. **COST:** For 1 adult eating 3 x meals per day for 5 days per week, this will cost £20. As ingredients can be purchased in bulk, there is no need to over charge. We all know you can do a weekly food shop at Aldi for £20 or less, so why charge more? **THE GOOD BIT:** To encourage people to use the service, the app will track how often a household orders. Every time an order is placed, each household will receive loyalty points. **Loyalty points** will be able to be used towards **energy bills and/or council tax.** This will also allow adults who have busy lives to spend more time with their children, to themselves or finally starting the gym. I've worked out that I spend at least 2.5 hours per day cooking/shopping for food/thinking about what to eat, and I am sure it is similar for others too! Thank you :)"

Timeline of research activity

March	April	May	June	•	July
2022					
23rd March Scoping workshop	 Research design Participant recruitment Procurement of online research platform 	9th-20th May Online research community LIVE (<u>Incling</u>)	9 th June r Virtual focus group	Analysis & reporting Report delivered w/c 20th June	Further dissemination

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