GREATER LONDON AUTHORITY

Camden

SOMERS TOWN NEIGHBOURHOOD FORUM

Somers Town Future Neighbourhoods 2030

Lifeafterhummus
Community Benefit Society

The case for creating Ultra-Low and Local Circular Food Waste Zones in Camden and beyond

SCAN ME

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58-62 Phoenix Rd, Somers Town, London NW1 1ES

Contents

Lifeafterhummus Community Benefit Society

Social Supermarket, Re-Use Centre and Redistribution Network

Creating value from waste and using waste as a vehicle to support people

58-62 Phoenix Road, Somers Town, London NW1 1ES

www.lifeafterhummus.com | @lifeafterhummus

We collect surplus food from 45 stores every week

Wholesalers

Supermarkets

Kentish Town VegBox

Pre-loved Clothing Donations

- Plus Shoes & Accessories
- Children's Books & Toys
- Kitchen and Homeware
- Stationery and more
- Deceased Loved One's Items

Volunteers provide circa 585 hours per month at a value of £7,780 in-kind support

2 Members of Staff

11

Hostels

REDISTRIBUTION NETWORK

1

Faith Group

1

Camden Library

1

Surplus Food Cart

1

Afterschool Club

2

Camden Nurseries

1

Secondary School

INSPIRED by the local availability of waste, the Need, Community Spirit and the City of Milan

FOOD WASTE COLLECTED:

- 1000kg+ per week
- 5 tonnes per month
- 12,500 Carbon Emmission avoided per month
- Value: £15,000 per month (WRAP)

Additionally redistributing pre-loved items

Space £138sqm / Rent £10,500 per annum

Core costs: Circa £6,250 per month

We are not a commissioned/ core funded service

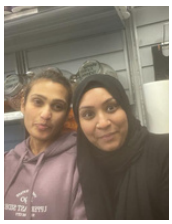
Providing Social Prescriptions, Community Support and Employability

80

Powered by volunteers, young people and **Local Residents who volunteer 1.5hrs every week** and have access to a **weekly surplus 'SHOP' worth £40**







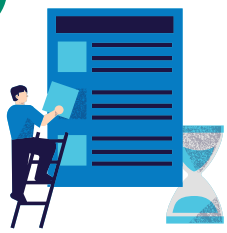



IMPORTANCE OF REGULAR VOLUNTEERING SHIFTS
for residents who are members of the social supermarket

1

Access to community:
Embeds community ownership, cohesion, development goals and reduces social isolation

2



Promotes routine and structure:
Important for adults who have been unemployed for 6+ months and provides experience for young people who often complete their DofE

3

Improves overall well-being:
Voluntary work reduces depressive symptoms, increases life satisfaction and well-being and can be related to lower levels of mortality

4

CREATE LESS WASTE

Community empowerment:
Learning waste prevention, Active behaviour change, Climate change resilience

5

Builds confidence, communication skills, experience and counts as looking for work by DWP if it's likely to help find employment

Several residents also report eating a more balanced diet due to increased intake of readily available surplus fruits and vegetables. Including trying more 'new to them' produce.

Mixed methods of transport:

Volunteers use their cars to collect the heavier loads - they cannot park in loading bays which often causes limitations. 35% of all collections are carbon emissions avoided. This rises to 65% carbon emissions avoided on redistribution as this is done predominantly on foot pulling hand carts or by bicycle trailer/ cargo bike.





We also use the services of Uber, Pedalme and Addison Lee when needed.





2024: Increase our social impact and social value Moving to a financially sustainable model

Regent's Place Community Fund (unrestricted) and Camden Giving's Equality Fund (unrestricted) and other generous donors, supporters and corporate volunteer day fees covering our core costs.

Somers Town Future Neighbourhoods 2030 Phase 2 Funding, GLA:

Invite and host workshop through the Camden Food Mission based on recommendations from this report with Camden Officers from multiple departments to include: Environmental Health, Sustainability, Air Quality & Energy, Green Spaces, Housing - Neighbourhoods, Innovation and improvements, Community Partnerships, Participations, Partnerships and Communications, Environment Services, Supporting People, Adults and Health and Children's Prevention, Family Help and Safeguarding.
Extend invite to GLA Senior Policy and Programmes Officer/s, Feeding Britain, ReLondon, Veolia, NLWA, Healthwatch Camden, VAC, Camden Giving, Cooperation Town, Refugee Community Kitchen, Food For All and IFAN. And members of the Camden Ciimate Alliance.

Somers Town Future Neighbourhoods 2030 Phase 3 Funding, GLA:

- Increase Surplus Food collection and redistribution within 1.2mile radius, expanding level of support
- Local commercial composting trial and feasibility to scale up: Install the Oklin GG02 composter to reduce existing non-edible food waste at our centre by 85% and bio-packaging at a rate of 4kg per day. Showcase to local businesses in Somers Town and explore redistribution of finished product.
- Work with Camden Officers to create the 'Camden Food Waste credit' and reward scheme to valorise surplus food redistribution and waste reduction in absense of mandatory reporting of food waste
- Resident and stakeholder engagement on STFN Phase 3 projects

Hire 2 extra staff

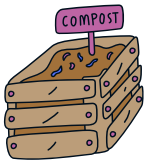
E-cargo bike rider

Continue to offer **Corporate volunteering days** @£350 per session

Stocking **Honest Grind Coffee** Integrated Youth Support Service Initiative

Partner with more local businesses and contract caterers

Recruit more local residents to join our social supermarket and volunteer



Install commmercial 4L per day composter

ReLondon and Camden Council Funding:
'Waste Cafe' trial at 5PS library:
Soft launch of food made from 'waste'
Weekly free early evening meal offer
with social prescriptions and outreach from Communities Partnerships, Sustainability, Air Quality & Energy and VCS partners

Supply to Local growing groups

Collect more Surplus Food within 1.2 mile radius to redistribute to more VCS partners and local households

NLWA and Camden Council Funding:
Refurbish the kitchen at our centre for waste cafe preparation and re-launch community cooking classes

Power to Change Funding:
Optimise and switch our CRM to Salesforce and Social Impact monitoring to HACT to better understand our **Social and Environmental Value**

salesforce ⇄ HACT

Executive Summary

Hyper-local food waste zones present a major opportunity to reduce hunger and carbon emissions

This report demonstrates the potential in just one small corner of London - Somers Town in Camden. **Through smart coordination powered by plentiful local volunteers, unwanted food could be turned into thousands of meals without leaving this small neighbourhood.**

Need: Unnecessary carbon, unacceptable hunger

- We found that 109 local businesses reported 4400 litres of edible food waste each week, causing unnecessary carbon emissions in its disposal.
- At least half of the 30+ local VCS organisations that provide a food service say their users report insufficient food and hunger often or very often.
- The majority also report users choose between eating and heating, find hunger impacts their ability to study or work, and experience poor nutrition often or very often.

Opportunity: Reduced emissions, healthier people

- By saving edible food from disposal our conservative estimate shows at least 47 tons of CO2 emissions could be avoided each year.
- Redistributing this food would provide Somers Town residents with 45,000 -113,000 additional meals every year (worth £65,000-£164,000).

How: Hyper-local surplus food coordination

A local food waste coordination service, with paid coordinators and clean transport, would be able to achieve this food redistribution to realise the carbon and health opportunity identified in this report. Dozens of local businesses and VCS organisations are already keen to take part:

- 58% of 109 Somers Town food businesses surveyed indicated they would be very likely or interested in signing up to a food donation scheme.
- Three-quarters of business survey respondents creating food waste need collection only once a week or less.
- The majority of food-providing VCS organisations require more food and transport. With roughly half also needing more storage for food.

Given that our survey represents a small percentage of VCS organisations and businesses in Camden, **it is possible the opportunity is many times larger than our estimates included in this report**.

Implementation: We will host workshops through the Camden Food Mission to explore options based on the four recommendations from this report inviting Camden Officers from multiple departments to include: Environmental Health, Sustainability, Air Quality & Energy, Green Spaces, Housing - Neighbourhoods, Innovation and improvements, Community Partnerships, Participations, Partnerships and Communications, Environment Services, Supporting People, Adults and Health and Children's Prevention, Family Help and Safeguarding.
Extending our invite to GLA Senior Policy and Programmes Officer/s, Feeding Britain, ReLondon, Veolia, NLWA, Healthwatch Camden, VAC, Camden Giving, Cooperation Town, Refugee Community Kitchen, Food For All and IFAN. And members of the Camden Ciimate Alliance.

You can register your interest to attend these workshops here:
https://forms.gle/6wH7F8zbQkWnCKtz7

As a member of IFAN - the Independent Food Aid Network, Camden Council's Tackling Poverty Network and the Camden Food Partnership **we believe in a collaborative approach to achieving a cash first approach** through inclusive community food activities to maximise dignity and integrate help to reduce future need. Poverty does not only deprive people of material things, it also is a deeply isolating experience. That is why it is so important that holistic support services are available alongside cash, advice, social prescriptions and employability support.

The purpose of the project outlined in this report is to help inform the transition to an ultra-low and local circular food waste zone in Somers Town, Camden. Surveys were administered to local businesses and Voluntary & Community Sector (VCS) organisations to meet three main goals:

1. **To understand why senior staff at businesses choose to donate surplus food.**
2. **To begin building a picture of the types of food waste being produced by businesses in Somers Town.**
3. **To ascertain whether VCS organisations in Somers Town are able to meet the demand for food services and to understand how a circular food waste zone can aid them.**

The data indicate that senior staff from businesses who have donated in the past have stronger intentions to donate food. In addition, senior staff with more positive attitudes towards food donation have stronger intentions to donate food.

The 109 businesses surveyed dispose of **at least 4400 litres of donatable food per week** in addition to a significant amount of avoidable food waste.

According to WRAP's(16) redistributed food guidance (weight and meal equivalents) (1meal = 0.420kg = 420g = £1.46). This amount of avoidable food waste is therfore equivalent to **45,000 - 113,000 meals per year*** ***and worth £65,000 - £164,000***

Sample size of 109 Businesses interviewed

Potential surplus food for redistribution to local area based VCS partners: 4400L/week

Yearly equivalent = 45,000 - 113,000 meals

Monthly equivalent = 3,750 - 9,416 meals

Surplus food that could potentially be redistributed from this sample of 109 businesses is ≥ 4400 Litres/ week

Yearly equivalent = 45,000-113,000 meals with a value of £65,700 - £164,000 (30)

Reducing: 917-2293 kg CO2 /week, 47,697-119,242 kg CO2/ year from waste food (26)

In context this would be equivalent to reducing bus journeys by 600,000-1,500,000 km or reducing trips by car by 280,000 -700,000 km per year. (28)(29)

Businesses indicated that there was a variety of frequencies with which they would need food to be collected to donate food before it became unfit for human consumption (Graph 8, pg 24).

***see appendix item 2**

As well as there being a substantial amount of avoidable food waste in Camden, there is demand from VCS organisations for edible food. From our sample, 85% of VCS organisations ran at least one food related service. Of these **38% said they are unable to meet demand for food.**

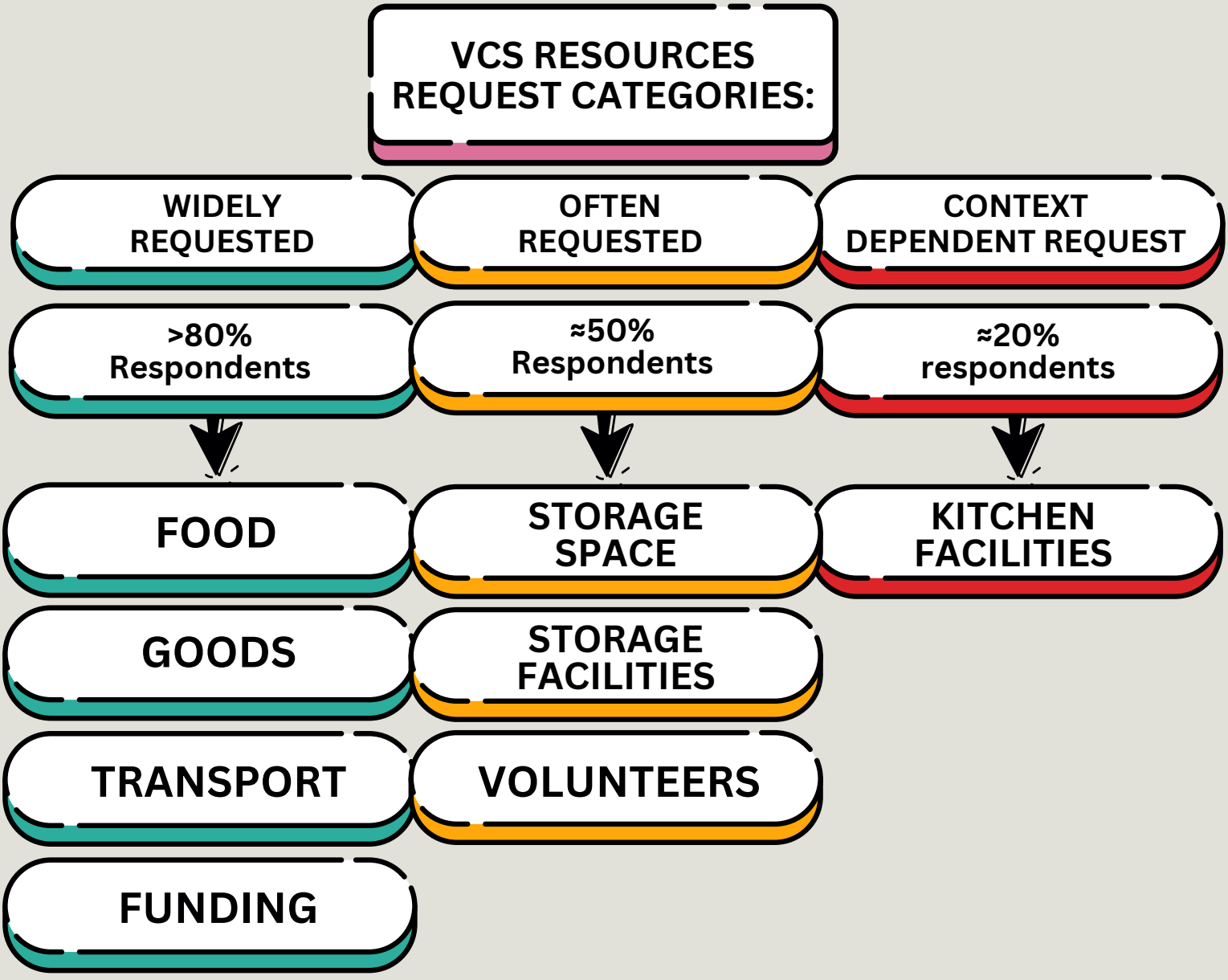
In addition, VCS users face the following **food related challenges often or very often at over 50% of the organisations**:

- Having insufficient food/ experiencing hunger
- Choosing between heating and eating
- Experiencing poor nutrition/ having low food quality
- Having an impacted ability to study/work

VCS organisations indicated demand for wide categories of foodstuffs, with fruit and vegetables being the two most requested categories.

Currently only about 0.5% of London's total food waste and loss is sent for redistribution to people, with most of this redistribution coming from wholesale and retail(4).

The data also suggest that many VCS organisations struggle to meet the demand for food related services and need additional resources.
These resources can be separated into 3 groups;



Four recommendations were produced as a result of findings of this research;

Produce educational and promotional materials to improve senior staff's attitudes towards surplus food donation, focusing on the positive environmental and social outcomes. Where possible target non-donors with this material specifically. Provide a list of area-based VCS partners in need in food donations.

Facilitate regular local food collections from businesses similar to the City of Milan's Urban Food Policy Pact, Neighbourly, Fareshare Go local food redistribution schemes and the existing Lifeafterhummus food redistribution model.

Trial alternative methods of processing unavoidable food waste such as local composting: reduce carbon emmissions from transportation, recover organic resources to restore soil fertility locally, introduce localised commercial composting options to businesses with a focus on those that place food waste in general waste.

Track progress - Implement an annual food waste survey for businesses in order to track how much food waste is produced, how this food waste is being managed, raise overall awareness and influence policy.

This evidence in this report paints a picture whereby local businesses are sending thousands of meals to landfill every year while over 80 % of VCS organisations are seeking more food donations.

It follows that Somers Town can pioneer a local approach to managing food waste at businesses which can simultaneously reduce carbon emissions and bolster emergency food support for the most vulnerable members of our community.

Camden Food Mission:
By 2030, everyone eats well every day with nutritious, affordable, sustainable food.

Creating Ultra-Low and Local Circular Food Waste Zones

Camden has circa 3,710 businesses registered as food premises with Environmental Health. Assuming these businesses dispose of edible food at the same rate as our sample, **1,600,000 - 3,800,000 meals per year** could be donated to those in need,(16) **avoiding 1,600,000 - 4,100,000 kg of carbon emissions per year** coming from food waste(26). In context this would be equivalent to reducing bus journeys by 21,000,000 - 51,000,000 km in London, or reducing trips by diesel car by 9,500,000 - 24,000,000 km in a year.(28)(29) There is potential to engage existing VCS partners as redistributors with support (see table 5), TRAs and to create strategically placed additional redistribution hubs.

Key ingredients for creating ultra-low and local circular food waste zones:

GLA
Feeding Britain
ReLondon

Healthwatch Camden
VAC
IFAN

Coorperation Town
Refugee Community Kitchen
Food For All

share expertise

user design

Corporate Strategy and Policy Design and Strategy Supporting Communities:
Endorse and implement trial within remit of the Camden Food Mission

Environmental Health:
(1) Engage businesses registered as food premises to donate surplus food
(2) Support VCS partners with food compliance
(3) Issue annual food waste survey

Community Partnerships:
Support VCS partners to
(1) Connect with localised surplus food
(2) Build capacity
(3) Explore sustainable financial model and funding opportunities

Sustainability, Air Quality & Energy:
(1) Support with social impact and social value data capture, monitoring and reporting
(2) Engage businesses through existing CCA membership to join redistribution network

Participations, Partnerships and Communications:
Strategy to spotlight and feature intiative in resident and commercial communications

Environment Services:
Monitor waste from businesses to identify
(1) Need for dedicated food waste bins
(2) Non avoidable food waste for local composting opportunities
(3) Avoidable food waste for redistribution

Green Spaces:
Explore and trial alternative local composting schemes in collaboration

Housing - Neighbourhoods, Innovation and Improvements:
Scope redistribution model with TRAs and interest in accessing local compost for community growing and gardening

Supporting People, Adults and Health and Children's Prevention, Family Help and Safeguarding:
Identify possible connections for creating greater community support

The report reads as follows. Section 1 is the background which gives further context on food waste and food waste management in London. Section 2 outlines the methods used to carry out the project. Section 3 lays out the findings of the investigation and Section 4 details our recommendations based on the findings. Section 5 acknowledges the caveats of this study and section 6 gives concluding remarks. An MSc dissertation was produced alongside this report which can be found here (31).

1. Background

This report outlines a collaborative research project carried out by a community benefit society, Lifeafterhummus and an MSc Social Policy and Social Research student at UCL. This partnership was facilitated by the Community Research Initiative at UCL with funding from the GLA Phase 2 Somers Town Future Neighbourhood project. The aim of this project is to help inform the local authority on how to reduce the environmental impacts of food waste in Somers Town through transitioning to an ultra-low circular food waste zone.

The climate crisis is one of the defining challenges of our time, with it being associated with ecological, social and economic problems. The main driving force behind rising global temperatures is the release of greenhouse gases due to human activity. In light of these issues and the role that cities have to play, the mayor of London has set the goal for London to be a carbon neutral city by 2050. The type of food we eat, how we produce said food and how we dispose of it has a great impact on GHG emissions. Roughly 8% of GHG emissions are released as a result of food waste(1). This informs UN sustainable development goal 12.3 to "halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains" by 2030(2). In order to reduce the impacts of food waste, food waste has to be managed in a responsible way. Implementing effective food waste management is an opportunity to create green jobs, cleaner air and a cleaner London.

One framework which has been deployed to reduce the environmental impacts of human activity is that of the circular economy. In a Circular Economy products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting(3). ReLondon suggests that three pillars of action can make a circular economy for food possible in London(4):

1. Increase the sourcing and production of food grown using argo-ecological practices and grown locally where possible

2. Increase the prevalence of healthy and sustainable food items and menus

3. Eliminate avoidable food waste wherever possible and recycle unavoidable food waste back into productive uses

The research outlined in this report focuses on how pillar 3 can be further pursued in Somers Town through the introduction of an ultra-low circular food waste zone. The project was carried out by Lifeafterhummus (a community benefit society operating within Somers Town) in association with a masters student from University College London. Surveys were administered to businesses and VCS organisations in and around Somers Town to learn about food waste and the possibilities for sustainable food waste management in the area.

1.1 Methods of managing food waste

The food waste hierarchy is a functional tool which can help guide policy makers when deciding how to deal with food waste(5). The hierarchy demonstrates different methods of managing food waste with level 1 being the most preferential and level 5 being the least. The food waste hierarchy has been adopted by the Mayor of London's office and they have outlined how the actions outlined in the pyramid below should be encouraged in order to increase the proportions of food disposed of in line with the higher levels of the hierarchy.

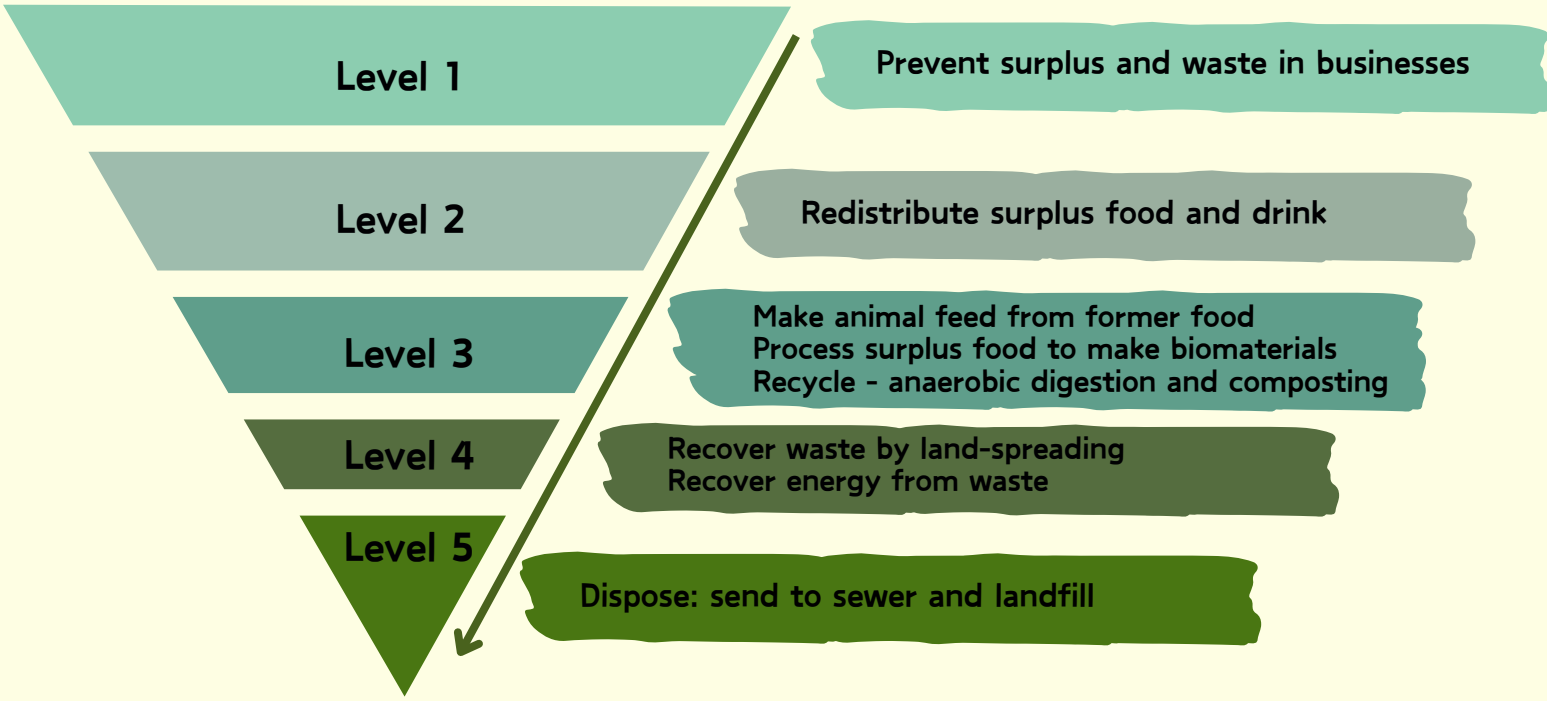


Table1: Actions which align with the food waste hierarchy

The goal of the ultra-low circular food waste zone proposed by this project would be to move food waste in Somers Town from the lower levels of the food waste hierarchy to higher levels to reduce the environmental impacts of food in the London borough of Camden.

1.2 The impact of food on London's emissions

In 2021 London's food loss was estimated at 1,456,000 tonnes(4). While the greatest proportion of this food loss occurs within homes, roughly 6% of this food loss occurs in food service settings which equates to roughly 14% of food in the food service sector being lost. This demonstrates the potential for the reduction of food waste in the sector and the opportunity to introduce policies which can significantly reduce London's food services' carbon footprint.

Potential for redistribution:

Circa 6% of food loss occurs in food service settings

Circa 14% of food in the food service sector is being lost

By 2026 the Mayor of London has set the target that no biodegradable or recyclable waste will be sent to landfill(6), however the food waste hierarchy demonstrates that simply avoiding landfill is not enough if the borough is looking to manage its food waste as effectively as possible.

Currently only about 0.5% of London's total food waste and loss is sent for redistribution to people, with most of this redistribution coming from wholesale and retail(4). In addition a large proportion of London's food waste which avoids landfill is anaerobically digested outside of London, including food waste collected in Camden through the North London Waste Authority. This reflects the norm in London where the majority of food waste which is separated from general waste is treated through anaerobic digestion outside of London's boundaries, with less than 7% of food waste being composed(4).

Whilst anaerobic digestion is certainly better than sending food to landfill there are opportunities to increase the amount of food donated to people (level 2) as well trialling alternative methods for treating food waste such as local commercial composting.

1.3 The aims and scope of this project

This project had three main goals;

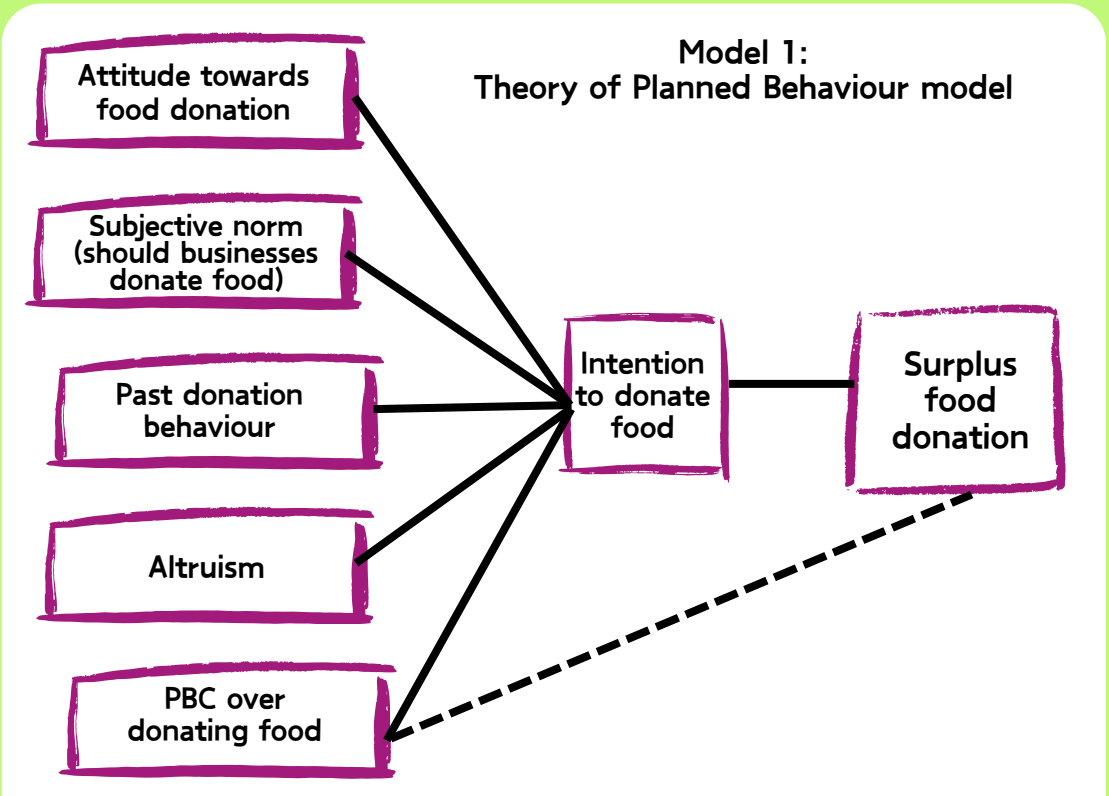
(1) To understand why senior staff at businesses choose to donate surplus food.

(2) To begin building a picture of the types of food waste being produced by businesses in Somers Town.

(3) To ascertain whether VCS organisations in Somers Town are able to meet the demand for food services and to understand how a ultra-low circular waste zone can aid them.

A model based on the Theory of Planned Behaviour (TPB) was deployed to help address goal 1. TPB is used to predict behaviour in individuals. It stipulates that behaviours are driven by the intention to carry out said behaviours. These intentions are informed through three main mechanisms; attitudes towards the given behaviour; subjective norms (i.e. how an individual believes other people will perceive the behaviour); and perceived behavioural control (PBC) which outlines the degree of ease with which an individual believes they can carry out the behaviour. PBC also has a direct influence on behaviour.

The behaviour that was focussed on in this project was surplus food donation. Altruism and past donation behaviour were added as predictors since previous research indicates that these variables may be useful predictors for behavioural intentions. The model used in this project is outlined below.



2.0 Methods

2.1 Research design

Two surveys were administered to two different samples. Both surveys were co-designed by a masters student at UCL, the operations manager at Lifeafterhummus and a Lifeafterhummus volunteer with experience engaging businesses on environmental issues. One survey was administered to VCS organisations in and around Somers Town to ascertain the needs of these organisations and how these needs could be addressed by an ultra-low circular food waste zone. The other survey was administered to businesses in the same area to examine their motivations for donating food and other goods, as well as the amount of food currently donated in addition to the amount of current food waste.

Representatives from the participating organisations were interviewed by researchers recruited by Lifeafterhummus, with their answers being coded according to the surveys. An opportunity sampling method was deployed whereby researchers would contact businesses in the area and conduct surveys with businesses willing to participate.

The data were analysed by a Msc Social Policy and Social Research student at UCL. Descriptive statistics were derived from the data. In addition, a factor analysis and a series of OLS regressions were deployed. For more detail on the statistical methods deployed please see the accompanying dissertation **here** (31).

2.2 Sample

2.2a Business Sample

In total 109 businesses were surveyed. Business demographics were collected including the size of the business in annual takings (Graph 1), the type of business (table 2) and the position of the individual responding to the survey (table 3).

Graph 1: Business size in annual takings

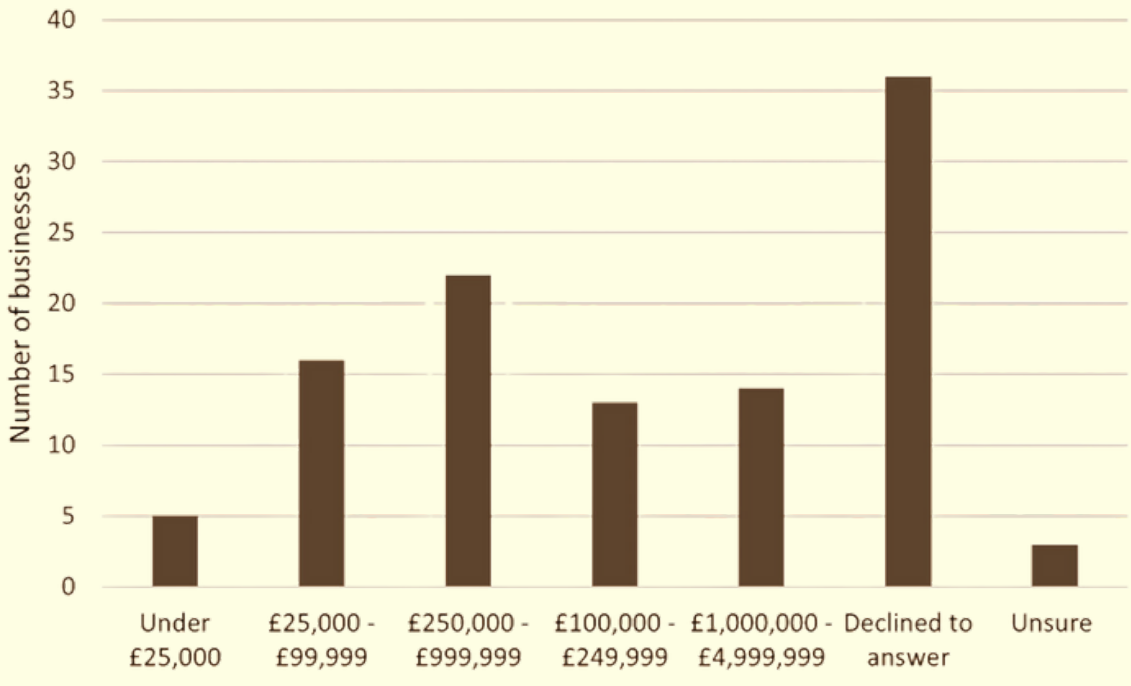


Table 2: Type of business

Type of business	Frequency	Percentage
Restaurant / cafe	57	52.3
Pub / bar / nightclub	20	18.3
Market trader	9	8.26
Corner shop/Local shop	7	6.42
Retail including food products	3	2.75
Takeaway / Sandwich shop	3	2.75
Supermarket	2	1.83
Contract caterer	1	0.92
Bar / Cafe	1	0.92
Bakery	1	0.92
Food Stall	1	0.92
Food store with takeaway	1	0.92
Retail/Coffee shop	1	0.92
Family Business	1	0.92
Cinema	1	0.92
Total	109	100

Table 3: Position of respondent

Position in business	Frequency	Percentage
Staff	42	38.5
Manager	25	22.9
Owner	7	6.42
General Manager	7	6.42
Assistant Manager	6	5.5
Supervisor	6	5.5
Director	4	3.67
Head Chef	3	2.75
Shift Leader	3	2.75
Duty Manager	2	1.83
Head of Cafes and retail	1	0.917
Managing Director	1	0.917
Store Manager	1	0.917
Cofounder	1	0.917
Total	109	100

2.2b VCS Sample

In total 34 VCS organisations were surveyed. Data about these organisations in terms of annual turnover, legal classification, core purpose and demographics served were gathered.The sample included a broad range of organisation sizes with the median organisation having a turnover of £453,434 last year. Graph 2 represents the legal classifications of VCS organisations, it indicated that the majority of the sample were registered charities.

Graph 2: Legal classifications of VCS organisations

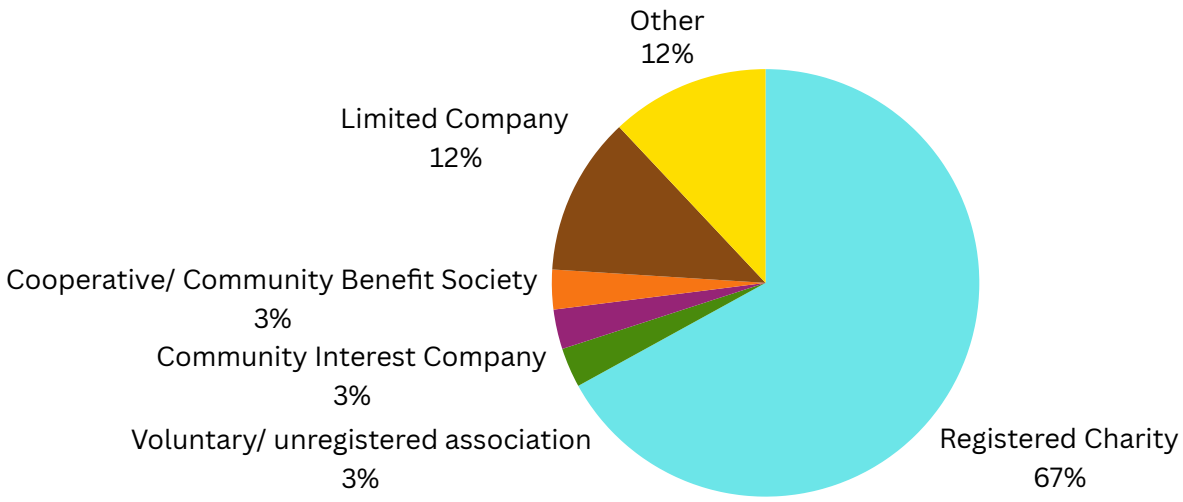


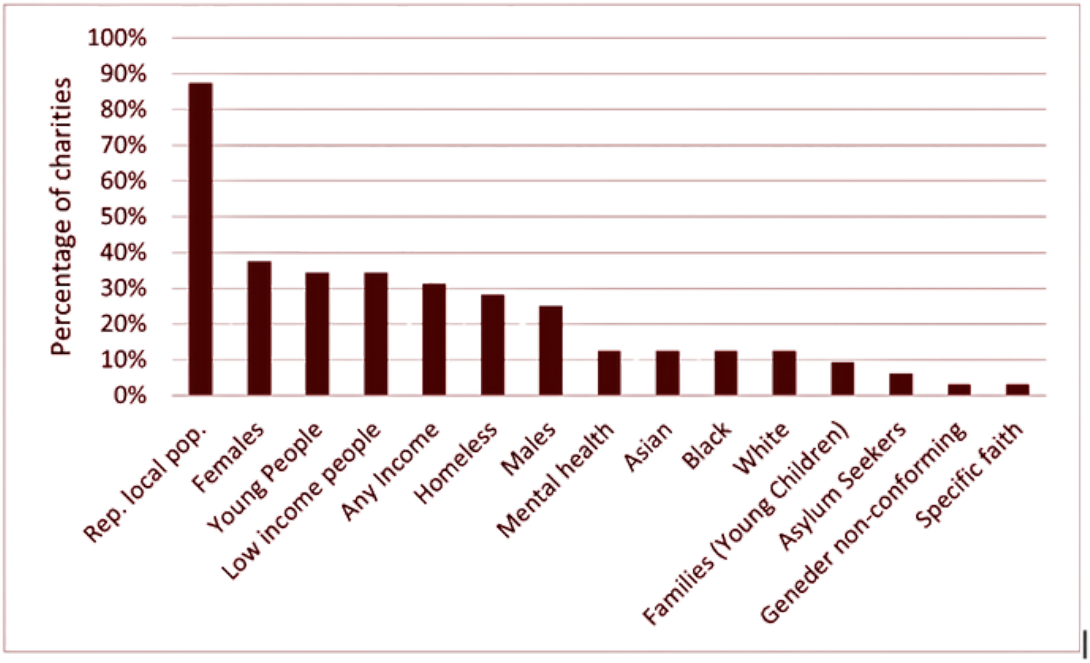
Table 4 outlines the purpose of VCS organisations as stated by representatives from the organisations. The most common purpose was to provide accomodation/housing (26%). Only 1 organisation said its core purpose involved food. Despite this, all but 5 of the organisations said they ran food related services. This highlights the link between poor access to food and other issues faced by organisation users.

Table 4 : Stated purpose of VCS organisations

Purpose	N. of orgs.	Percentage
Provision of accommodation/housing	9	26%
Provision of recreation/community spaces or facilities	7	21%
Education/training/research	3	9%
Prevention or relief of poverty	2	6%
Childcare	2	6%
Advancement of Arts, culture, heritage or science	1	3%
Mental health, women support groups, employment	1	3%
Provision of emergency accommodation	1	3%
Advocacy and support for women	1	3%
Advancement of religion	1	3%
Support, care or services for people living with a disability	1	3%
Support group for older people	1	3%
Information and advocacy for Ukrainian refugee families and housing assistance.	1	3%
Youth Action Charity	1	3%
Food Aid	1	3%
Improvement of the environment and community on the Estate	1	3%
Total	34	100%

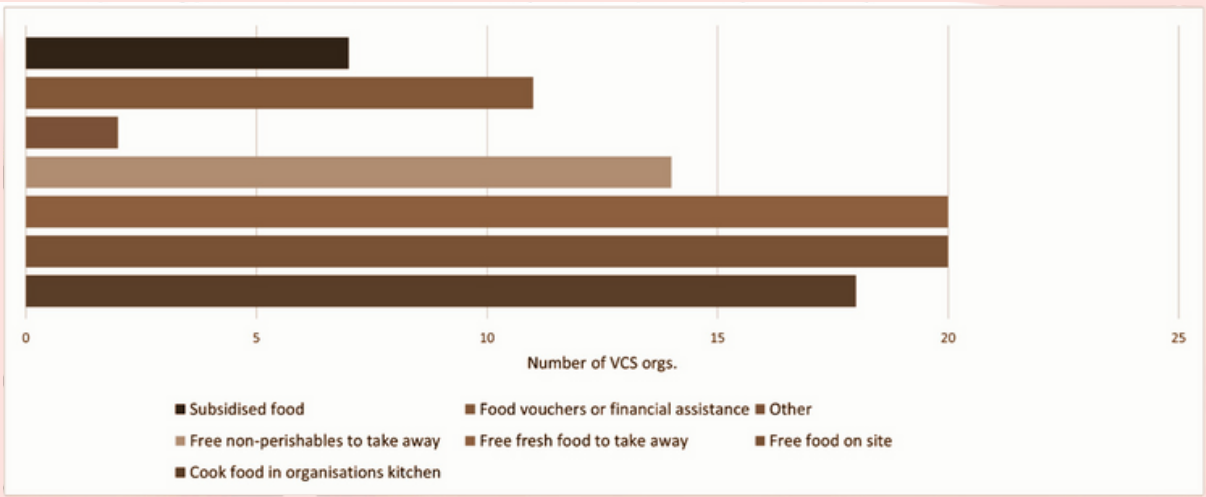
Graph 3 outlines the demographics served by VCS organisations. The largest proportion is "Representative of the local population" (88%). Rather than interpreting this as VCS organisations having a user base which is directly representative of the local population, this should be interpreted as them not targeting any specific demographic.

Graph 3: Demographics served by VCS organisations

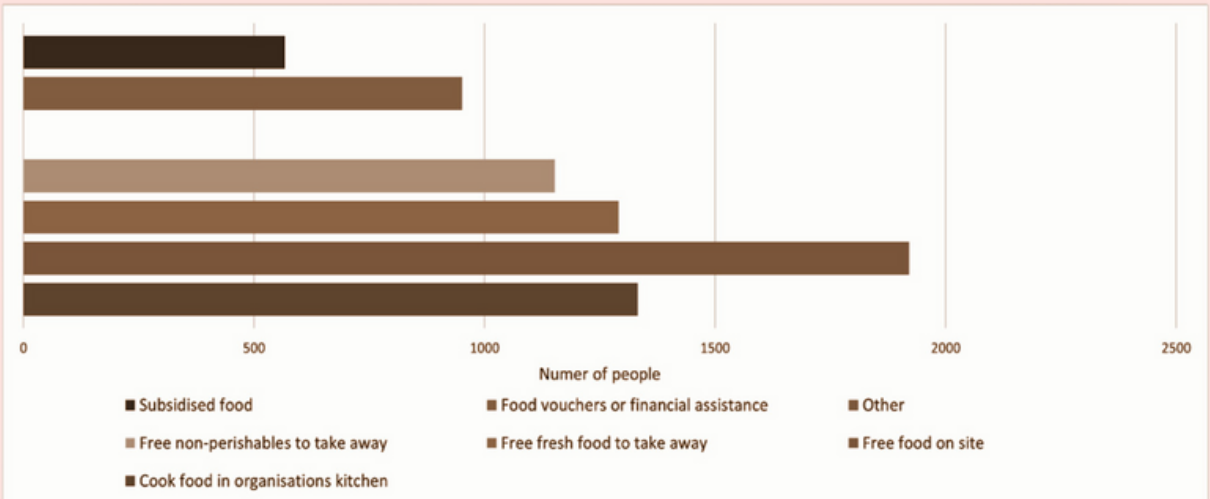


Graphs 4 & 5 show the number of VCS organisations which provide a given food related service, and the number of people this service supports per week respectively.

Graph 4: Types of food related service (total sample 34 organisations)



Graph 5: Number of people supported by food related service per week *(34 organisations)*



2.3 Factor analysis and OLS regressions

The data gathered from the business survey were used in a factor analysis and a series of OLS regression models. Factor analysis examines how variables are related to one another in order to look at an underlying construct. For example factor analysis was used to examine how questions which aimed to measure attitude towards food donation were related to each other. This was used to check that the attitude items all measured the underlying construct of attitude towards food donation and to create an attitude towards food donation score which was used in further analysis.

OLS regressions allow us to take data from the survey and test whether or not predictor variables influence an outcome variable and to what extent. In this case we used 3 OLS regression models. The first model was used to examine whether attitude towards food donation, subjective norms and PBC can be used to predict intention to donate food. The second model was the same as the first model, but with altruism added as a predictor. The third model was the same as the second model, but with past behaviour added as an additional predictor.

3.0 Results

3.1 Why do managers choose to donate food?

The models indicated that senior staff of businesses which had donated food in the past had stronger intentions to donate in the future. Those with more favourable attitudes towards surplus food distribution also had stronger intentions to donate.

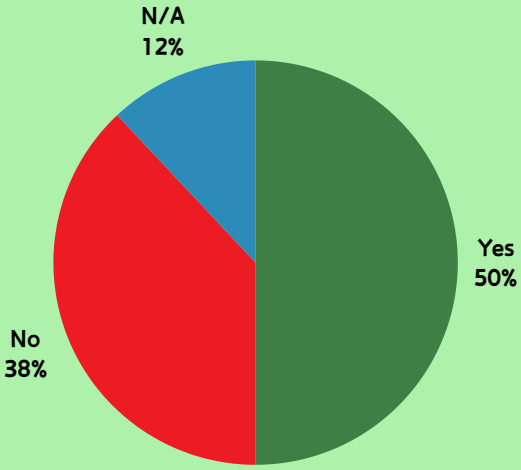
These findings suggest that policies with the goal of increasing the donation of surplus food should have a particular focus on first time donors since those who have donated in the past have stronger intentions to donate in the future. Policy should focus on making donation as easy as possible for these groups in particular - this may be better informed by future research into the barriers to donation for non-donor organisations.

Since senior staff with positive attitudes towards food donation have stronger intentions to donate food, it is important to foster these positive attitudes among senior staff at businesses. The attitude questions in the survey asked if senior staff thought food donation was good for society, the environment and positive in general. The findings imply that developing educational and promotional materials about the positive impact of food donation for the environment and society could be effective in promoting such attitudes and boosting the donation of surplus food. Again, this opens up avenues for future research such as what environmental and social impacts of food donation people are motivated by

3.2a Demand for extra food among VCS organisations

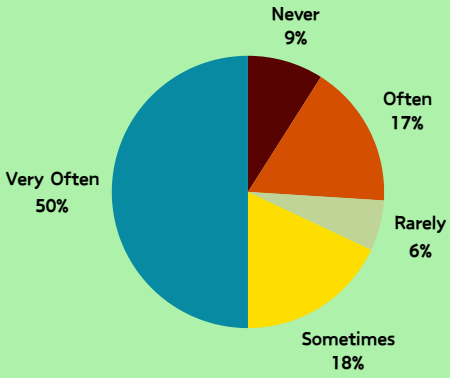
From our sample of VCS organisations 38.24% said that they fell short of the demand for food related services (Graph 6). Graph Cluster 1 outlines how often VCS users face different food related challenges.

Graph 6: Can you meet the demand for food related services

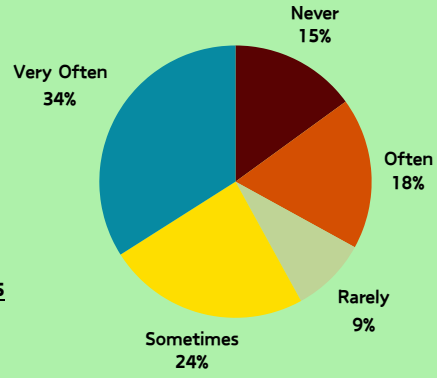


Graph Cluster 1: Food related challenges faced by VCS users

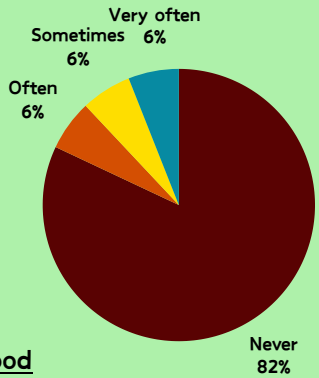
Experience insufficient food and hunger



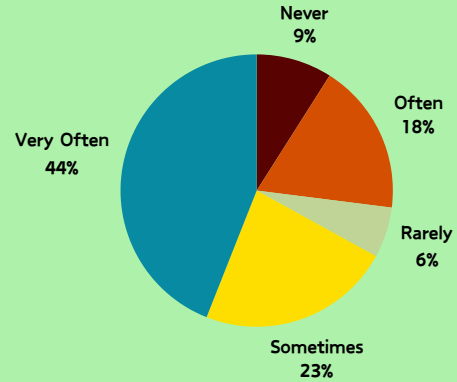
Choose between eating and other essentials (e.g. heating)



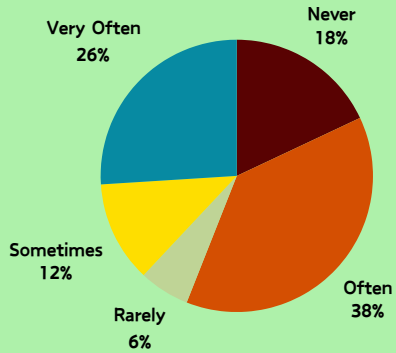
Other food related challenges



Experience poor nutrition / low quality food



Impacted ability to study or work



These charts show that over half of VCS organisations stated their users faced named challenges either often or very often. This supports the case for better access to food for the vulnerable people served by VCS organisations in Somers Town. Food redistribution cannot solve the problem of food insecurity however it can help temporarily alleviate some of the greater impacts.

3.2b What do VCS organisations need from an ultra-low circular waste zone?

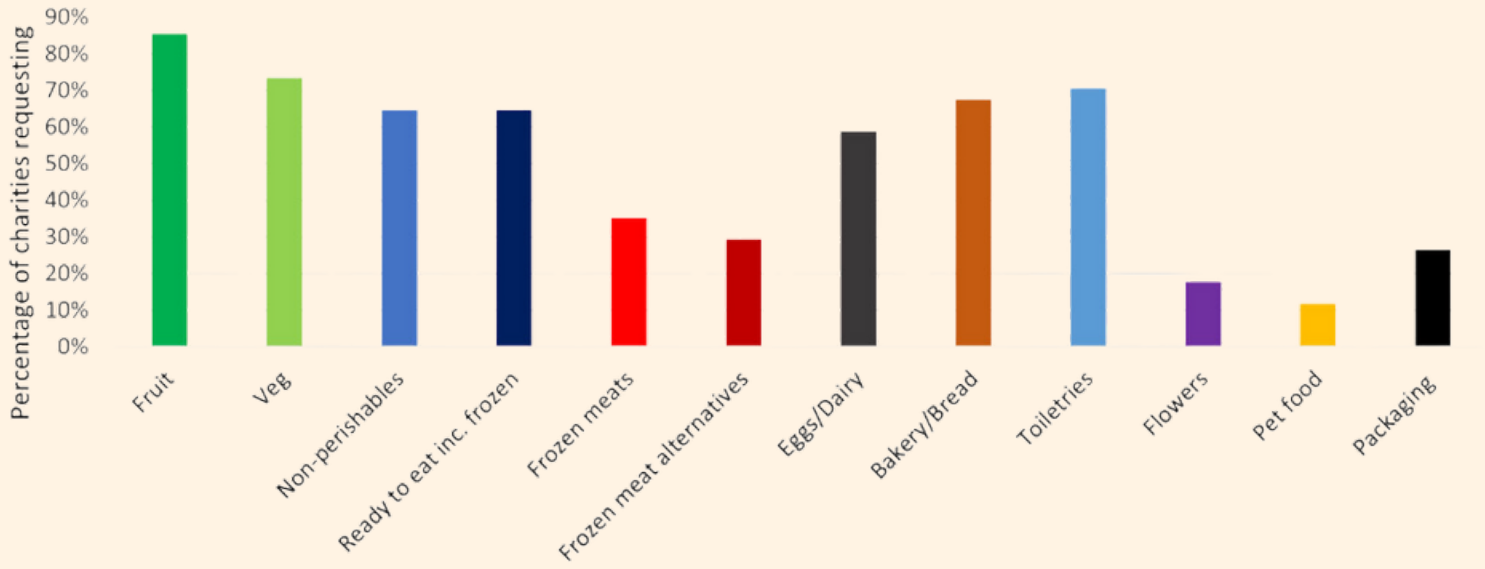
VCS organisations were asked what additional support they would need from an ultra-low circular waste zone. They could indicate whether a given service was needed to support food related services, goods related services or both. From the data we were able to identify 3 groups of resources which were needed.

Table 5 : Resources requested by VCS organisations

Request Category	Frequency of request	Resource needed
Widely requested	**Over 80% of respondents**	**Food** **Goods** **Transport** **Funding**
Often requested	**Roughly 50% of respondents**	**Storage space** **Storage facilities** **Volunteers**
Context dependent request	**Roughy 20% of respondents**	**Kitchen facilities**

VCS organisations also indicated what types of food they would need. Graph 7 gives a detailed breakdown of the food requested by VCS organisations.

Graph 7: Foods requested by VCS organisations



Our findings indicate that all of the resources in table 5 are required by VCS organisations and that a low waste zone should be designed to prioritise increasing the provision of items which are requested more frequently. In addition VCS organisations requested a range of food categories, with fruit and vegetables being the most frequently requested

3.3 The profile of food waste in Somers Town

It has to be noted here that previous research has shown that people generally underestimate the amount of food waste they produce(7), so the figures outlined here should be treated as conservative estimates.

Many of the businesses in the sample estimated that they produced a small amount of food waste, however this was not the case for all businesses. In total the 109 businesses estimated that they produced a combined 33,938 litres of food waste per week. The make up of this food waste has been listed below such that the first item constitutes the largest proportion of food waste and the item at the bottom constitutes the lowest proportion:

Table 6: List of types of food waste

	Type of food	Type of food waste
1	Inedible fresh food (e.g. plate scraps, vegetable peelings etc.)	**Unavoidable**
2	Edible fresh food within use-by date	**Donatable**
3	Stock past the use-by date	**Avoidable**
4	Fresh food past the use-by date by over 3 days	**Avoidable**
5	Fresh food past the use-by date by 1-3 days	**Avoidable**
6	Imperfect/ damaged but edible stock within use-by date	**Donatable**
7	Edible stock past the best before date	**Avoidable**
8	Edible stock within use-by date	**Donatable**
9	Edible stock within the best before date	**Donatable**
10	Stock ordered by mistake	***negligible amount of waste**

The main takeaways about food waste;

1. The largest proportion of food waste by far is unavoidable food waste. This is an encouraging sign with over half of respondents estimating this made up at least 60% of their food waste.

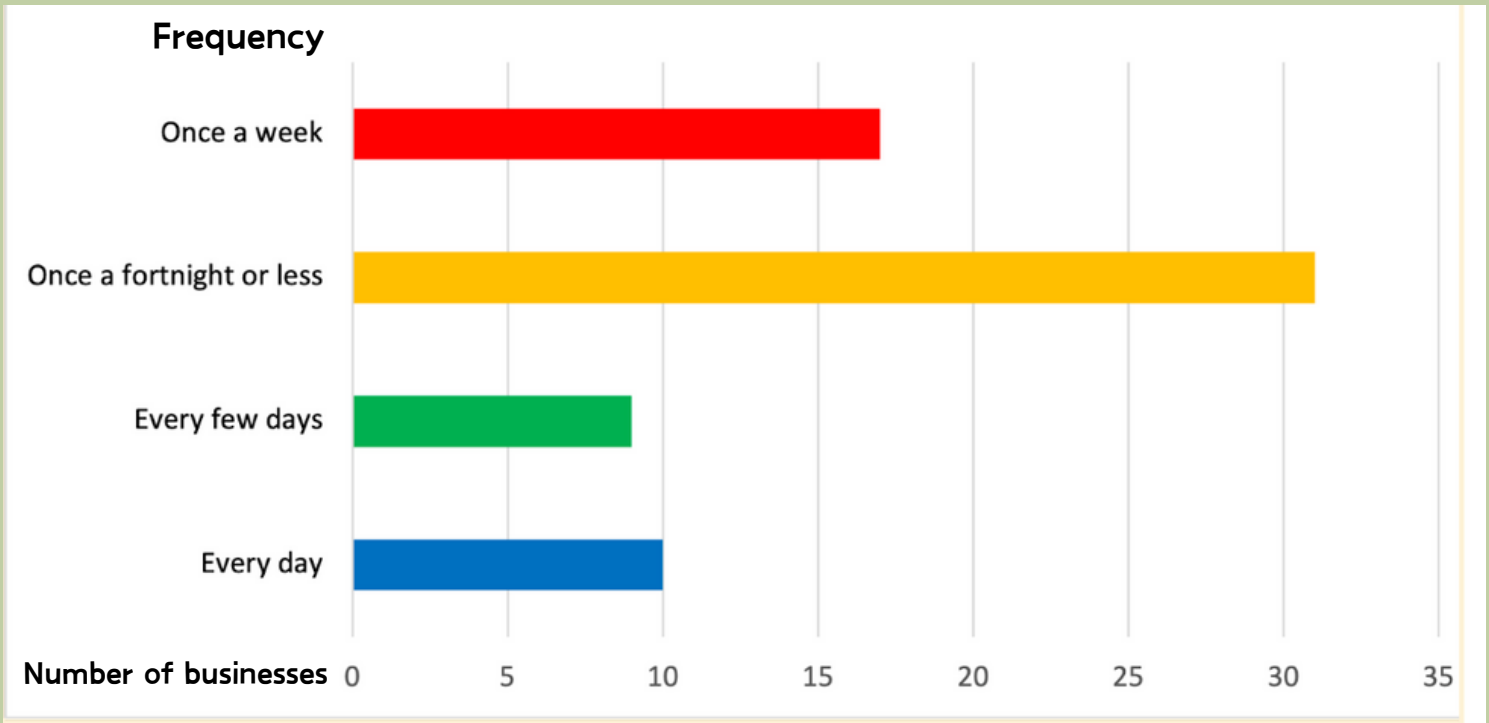
2. A significant volume of edible, donatable food is currently being wasted. We would conservatively estimate that from these 109 businesses at least 4400 litres (approx 13% of food waste) of donatable food are being wasted per week (see appendix for calculation). Rather than all businesses wasting roughly 40 litres per week, we found that some businesses waste a large volume of edible food, while others waste close to none.

3. Businesses are producing a significant amount of avoidable food waste which could be donated if it were collected earlier.

While there are encouraging signs that the majority of food waste being produced by businesses is unavoidable, our findings highlight the need for the local authority to facilitate more donations from food businesses. Currently 51% of businesses strongly disagree with the statement "The local authority currently supports my business to donate food to people", with 55% indicating that they would like the local authority to support them donating food to people.

In terms of addressing point 3, when asked, 19% of businesses indicated that they would be very likely to sign up to a scheme that would pick up food at a time that suited them, with a further 39% indicating that they may be interested in signing up. The graph below demonstrates how often businesses would require food to be collected.

Graph 8: How often businesses would need food to be collected



**Many businesses declined to answer this question - this chart is based on data from 67 businesses*

This demonstrates a broad distribution of needs from businesses. It also indicates that there would be work to be done everyday, presenting the opportunity to create green jobs for distributors and administrators.

The majority of food waste which is treated separately to general waste is anaerobically digested by the North London Waste Authority, with a smaller proportion being composted. Currently anaerobic digestion is favoured over composting because it can be used to generate energy which offsets emissions produced by burning fossil fuels. However, as the UK transitions to renewable sources of energy this offsetting benefit of anaerobic digestion will diminish. It may therefore be prudent to begin trialling alternative methods of managing unavoidable food waste.

4.0 Recommendations

Based on the evidence from our research we have come up with four recommendations on how to transition Somers Town to an ultra-low and local circular food waste zone:

01

Produce educational and promotional materials to improve senior staff's attitudes towards surplus food donation, focusing on the positive environmental and social outcomes. Where possible target non-donors with this material specifically. Provide a list of area-based VCS partners in need in food donations.

02

Facilitate regular local food collections from businesses similar to the City of Milan's Urban Food Policy Pact, Neighbourly and Fareshare Go local food redistribution schemes and the existing Lifeafterhummus food redistribution model.

03

Trial alternative methods of processing unavoidable food waste such as local composting: Reduce carbon emmissions from transportation, Recover organic resources to restore soil fertility locally, Introduce localised commercial composting options to businesses with a focus on those that place food waste in general waste.

04

Track progress - Implement an annual food waste survey for businesses in order to track how much food waste is produced, how this food waste is being managed, raise overall awareness and inform policy.

Recommendation 1: Produce educational materials to improve attitudes towards surplus food donation among senior staff

Produce educational and promotional materials to improve senior staff's attitudes towards surplus food donation, focusing on the positive environmental and social outcomes. Where possible target non-donors with this material specifically. Provide a list of area-based VCS partners in need in food donations.

The London food strategy states that businesses should donate more food(8) and that local authorities should work to support programmes to increase food donations such as Love Food Hate Waste. Our research demonstrated that senior staff with more positive attitudes towards food donation in terms of its impact on the environment, society and as a positive act in general have stronger intentions to donate food in the future. Improving these attitudes can be done through educational & promotional campaigns around food donation. Donating food can reduce emissions in a myriad of ways. For example Food Connect(9) redistributes food using zero emissions vehicles including e-cargo bikes and e-vans. In addition, food waste accumulates embodied emissions such that food wasted further along in the supply chain has a greater environmental impact. Communicating the emissions saved by donating food as well as the further emissions saved through using zero-emissions modes of redistribution may improve public perceptions of the environmental impacts of surplus food redistribution.

Research has shown that it can be helpful for charitable causes to describe the impacts of donations in promotional materials(10). It may be useful to incorporate examples of the work that local VCS organisations in Camden do and how having access to a greater volume of surplus food can aid them in helping people beyond feeding them as indicated by table 4 (pg.18). Incorporating examples of the work that surplus food donation helps facilitate may also work to improve attitudes in terms of the good surplus food donation can do for society.

Recommendation 2: Facilitate regular food collections from businesses

Facilitate regular local food collections from businesses similar to the City of Milan's Urban Food Policy Pact, Neighbourly and Fareshare Go local food redistribution schemes and the existing Lifeafterhummus food redistribution model.

Our findings indicate that the majority of businesses want help from the local authority to donate more food. This may be possible through a project similar to Food Connect whereby zero emissions vehicles are used to make collections from local businesses, with this food being redistributed to local VCS organisations.

Models for such a system already exist both within and outside of Camden. For example Lifeafterhummus collects and redistributes 5 tonnes of surplus food every month on foot, by bicycle, e-cargo bicycle and by car from 45 stores weekly shared to 11 hostels, 1 faith group, 2 VCS partners and 80 local families who attend their centre powered by 50 local volunteers. Additionally, neighbourly(11) already has redistribution experts who manage the connection of surplus products from businesses to third sector partners. Neighbourly also measures impacts, giving reports to business - a service which 54% of our business sample would be interested in. Neighbourly also highlights the availability of funding through grants of up to £1m for businesses with fewer than 1000 employees.

The Milan food waste project(12) also offers a model of scalable food waste hubs which has won the earthshot prize.

The data indicates that this extra food can be supplied by businesses and that the demand exists among VCS organisations. An ultra-low circular food waste zone may present the opportunity to provide other resources to VCS organisations in line with their needs in table 5 (pg. 22).

Recommendation 3: Trial alternative methods of processing unavoidable food waste such as local composting

Trial alternative methods of processing unavoidable food waste such as local composting: Reduce carbon emmissions from transportation, Recover organic resources to restore soil fertility locally, Introduce localised commercial composting options to businesses with a focus on those that place food waste in general waste.

Our research indicates that the majority of food being wasted cannot be donated for people to eat. Most of this unavoidable food waste is being anaerobically digested. While this is currently the most preferable option, as London moves towards more renewable energy sources this method of disposal will diminish in value(13). One alternative method may be composting locally. Composting produces fewer emissions than anaerobic digestion, with **local** composting having the potential to also reduce or completely remove the emissions associated with transporting waste. Compost produced locally may be used for community growing projects, allotments, or other public spaces. Alternatively compost can be sold providing an additional revenue stream to the local authority.

Recommendation 4: Track progress with an annual food waste survey

Track progress - Implement an annual food waste survey for businesses in order to track how much food waste is produced, how this food waste is being managed, raise overall awareness and inform policy.

The findings of this project can be built upon further with the creation of an annual food waste survey. This would offer multiple benefits. First of all it would allow for more accurate monitoring of how businesses in Camden deal with food waste. This data could be used to evaluate the effectiveness of any policy designed to influence how businesses deal with food waste. An annual food waste survey can also be used to monitor trends concerning attitudes towards food donation/other forms of managing food waste in Camden.

Furthermore the council holds the contact information for each businesses in the borough of Camden that is registered as a food premises through Environmental Health. Camden has circa 3,710 recorded food premise registrations.

5.0 Caveats

5.1 Measuring outcome behaviour

Many studies using TPB as a framework don't include a measure of the outcome behaviour(14) (in this case surplus food donation). Instead, the assumption that a stronger intention to donate leads to more food being donated is made based on previous research.

5.2 Business sample

Over half of the businesses surveyed were restaurants/cafes. Other types of small businesses in Camden may differ so the findings should be applied to those businesses cautiously. The profile of this sample means that the findings should not be applied to businesses outside of the Somers Town area without replicating the research first.

5.3 Estimating food waste

Measures of food waste & donation relied on estimates making them more susceptible to social desirability bias(15), likely resulting in overestimations concerning the amount of food donated and underestimations concerning the amount of food wasted.

In order to calculate the number of meals, cost and carbon emissions associated with food waste we needed to convert the volume of food into an estimated mass of food. This is unlikely to be accurate - so a conservative estimate was taken. The number of meals should be viewed as a ball park figure rather than an absolute number of meals being wasted.

5.4 VCS sample

The VCS sample only consisted of 34 observations. This is a small sample size meaning that any findings should be carefully considered before being applied more broadly. The exact figures and percentages for VCS organisations are unlikely to be an accurate representation of VCS organisations in Camden. However, the general direction of the findings is likely to have validity in that a large number of VCS organisations struggle to meet demand for food related services and the users of these services often face the challenges highlighted in section 3.2a.

6.0 Conclusion

This report outlines the findings from a joint research project between Lifeafterhummus Community Benefit Society & a UCL masters student. Our findings indicate that businesses in Somers Town do not deal with food waste in the most environmentally sustainable way. Currently a significant amount of donatable and avoidable food waste are being disposed of rather than being fed to people. This partnered with the clear demand among VCS organisations for additional food provides the opportunity to reduce food waste, reduce emissions, support VCS organisations and create green jobs through the implementation of an ultra-low and local circular food waste zone. Based on our research we would recommend incorporating the following features into an ultra-low and local circular food waste zone:

1. Educational and promotional materials
2. Regular food collections from businesses using zero-emissions vehicles
3. Trialling new methods of processing unavoidable food waste
4. Tracking progress through an annual food waste survey

The significant impact of food waste on climate change provides the opportunity for new ways of managing food waste in line with the circular economy. As a borough with a high density of food service businesses Camden is uniquely situated to pioneer innovative solutions to the issues caused by food waste such as through the recommendations made by this report.

"It is absolutely amazing that these services you've discussed could be an option for a new TRA such as ours that wants to bring our diverse community together and want to support residents in need."

- Forde Mutton and Castle Tenants and Residents Association Representative

Appendix

Appendix item 1: Calculation for amount of donatable food

For each category of food waste respondents estimated what amount of said category made up their total food waste. E.g. “Indelible fresh food makes up 10-20% of our food waste”. This was combined with the estimated amount of total food waste to estimate the volume of a given type of food waste. For the above example we would take the lowest estimate in a category (i.e. 10%) and apply that to the volume of food the business threw away. The estimate was calculated in this way for each food category to come up with a total volume of waste for each category. These categories were assigned the label donatable, avoidable or unavoidable based on table 6 (pg.23).

Appendix item 2: Calculation for converting food waste to meals & value

The same benchmark as WRAP was used to estimate number of meals (1 meal = 420g = £1.46). Therefore the volume of food recorded by our survey (in litres) was converted to weight (kg). There is no perfect way to do this so a range with a low and high estimate was utilised.

The low estimate assumes that a 120L waste bin can fit 5 bin bags weighing 2kg each such that the following is assumed:

120L = 10kg. Therefore 12L = 1kg of food waste.

The high estimate assumes that a 120L waste bin can fit 5 bin bags weighing 5kg each such that the following is assumed:

120L = 25Kg. Therefore 4.8L = 1kg of food waste.

It is worth reiterating that this is not likely to give an accurate estimate - instead it should be used to help contextualise the fact that a large quantity of edible food is currently being waste.

Appendix item 3: Calculation for converting food waste to CO2 emissions

According to United Nation's Food & Agriculture Organisation, "The 1.3 gigatons of edible food wasted releases 3.3 gigatons equivalent of carbon dioxide (CO2), meaning that for every 1kg of food waste, just over 2.5kg of CO2 is emitted. And when food ends up in landfill, it generates methane, a GHG 25 times more potent than CO2"(26). Hence, 1kg food waste= 2.5 kg of CO2 emissions.

Appendix item 4: CO2 reduction due to green transport options

Primarily, for London bus CO2 emissions, it is estimated that single-deck buses emit approximately 90g, double-decks emit approximately 80g and articulated buses emit approximately 60g of carbon dioxide per passenger-kilometre (17). However, the capacity of different types of busses are different, average London bus CO2 emissions can be 79g/ passenger-kilometer according to the based on utility rate(27). The average petrol car produced the equivalent of 164 grams of CO_2e per km in 2023, while diesel cars averaged roughly 170 grams of CO_2e per km. Both vehicle types had higher emissions per kilometre than the average battery electric vehicle (BEV) (28). Therefore, on average, petrol cars and diesel cars had a similar carbon footprint, at roughly 170 g CO_2e per km (29).

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~ I am not defined by my scars but my incredible ability to heal,
Lemn Sissay

~ No one can be a human being unless you have empathy for others,
Benjamin Zephaniah

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Farrah Rainfly, Operations Manager, Lifeafterhummus Community Benefit Society