



The Great Food Fight: An Investigation into Food Waste at LSE



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1. Overview



1.1: Team Profile



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1.2: Executive Summary

The London School of Economics and Political Science (LSE) has made a strong commitment to sustainability via the LSE Sustainability Strategic Plan, part of its 2030 Strategy. Although the plan encompasses a broad and diverse set of aims, the specific strategy proposed to reduce food waste remains rather vague and extends no further than a commitment to the traditional "reduce, reuse, recycle" hierarchy.

This report seeks to critically analyse the different types of food waste initiatives that are currently in place, discuss which aspects are working well, and highlight areas for improvement. The nature of the research involved speaking to key stakeholders in LSE such as relevant student societies and LSE staff, as well as surveying current students, and analysing waste collection data from 2013-2020. Overall, LSE does exhibit some effort to reduce food waste, but execution of the current initiatives can be improved upon greatly.

This report identifies and explores four areas of improvement:

1. The first is to engage in establishing external partnerships with companies, brands and non-profit organisations to alleviate the food waste problem at LSE. By incorporating new products and services into LSE operations, LSE will be able to actively engage in the wider food waste network.
2. Secondly, there needs to be a stronger concerted effort to strengthen protocols on campus and in residential halls. Implementing proper procedures will maintain a high standard of quality in carrying out the food waste initiatives and ensure continuity into the future.
3. Thirdly, there is merit to introducing portioning at canteen-style restaurants on account of the huge amount of leftovers that get thrown out in restaurants on campus. By introducing tiered portion sizes and reducing the amount of carbohydrates at select student eateries, LSE Catering will be able to appeal to current student demands for a more affordable and sustainable food offering on campus.
4. Raising awareness is the final recommendation, which includes solutions such as creating an online event series, as well as unifying and improving LSE's overall marketing strategies. This is all in an effort to send out a clearer and more direct message on the university's action plan to tackle food waste and to promote methods of student involvement.

Given the urgency of the food waste issue, we propose that these recommendations get implemented as soon as possible. Although COVID-19 has presented some challenges to both this project and sustainability at LSE, the changes made to campus operations presents a unique opportunity to trial and iterate proposed solutions. Upon their implementation, these four areas of improvement will form a stronger foundation for reducing food, increasing awareness, and greater overall sustainability.



2. Introduction



2.1: Mission

In October 2020, LSE revealed its Sustainability Strategic Plan, a key part of the institution's 2030 strategy. In an effort to build upon the plan and to more actively engage students in the overall process, the LSE Students' Union (LSESU) Sustainable Futures Society created two student-led projects to investigate the broad themes of sustainability and waste at LSE. These projects centre around food waste and plastic waste. By investigating the present state of food waste at LSE, this report seeks to build upon existing initiatives and propose new solutions to reduce the amount of food that is thrown away on campus and in halls of residence.

2.2: Scope

Food waste comprises two key components: pre-consumer waste and post-consumer waste. Pre-consumer waste is any waste that is discarded prior to reaching the final customer, this includes food that has been oversupplied, spoiled, dropped or contaminated. Post-consumer waste is any waste discarded by consumers after the food has been made, sold or served. The majority of solutions outlined will focus on the need to reduce post-consumer waste, since the majority of food waste that is generated at LSE is inextricably linked to the actions of the student body. It is worth noting that in an effort to change current consumer actions, several solutions will take place in the pre-consumer space.

2.3: Approach

Recognising its intrinsic value to the project, the food waste hierarchy created by the Waste and Resources Action Programme (WRAP) provided an invaluable way to identify the value of current and proposed food waste initiatives. Where possible, solutions were created to aid the transition of current initiatives from a lower position in the hierarchy to a higher one.

Another fundamental aspect to the approach taken was the LSE Sustainability Strategic Plan. The six core elements of the plan are education, research, engagement and leadership, our school, investment, and collaboration. With each solution posed, a connection to the plan was identified in order to ensure that all recommendations made are in line with the school's overarching vision of sustainability.

2.4: Methodology

This is a mixed methods project that combines quantitative and qualitative research methods, stemming from primary and secondary sources. Please see appendix 9.2. for a full breakdown of all methods used.

The initial stages of the project were spent analysing the pre-existing documents on food waste and sustainability produced by the various bodies within LSE, such as Sustainable LSE and LSE Catering. Then, a period of secondary data analysis revealed the flaws of the basic waste collection data produced on behalf of LSE. Given this lack of relevant quantitative data, the project pivoted in favour of more qualitative methods.

The most valuable of these methods proved to be interviews with a series of key stakeholders, based on the list of current food waste initiatives (see appendix 8.5.). Discussions about these initiatives quickly revealed some serious shortcomings and areas of improvement to be made. Where possible, the team would actually go onto campus and test out the current initiatives to gain a first hand perspective. Time was then spent devising potential strategies to improve the current initiatives, hinging on further interviews, research, and a survey. As the project continued, gaps in current procedures and initiatives continued to reveal themselves. This opened up space for brainstorming on suitable solutions to fill these gaps, supported by further research and the survey.

A survey was chosen as a method with which to test the idea that there is a lack of student engagement and knowledge around food waste, an idea that the interviews consistently alluded to. Survey results did in fact support this and as such, shaped a solution centred on raising food waste awareness at LSE (see section 6). Giving students an opportunity to state their issues with current catering facilities and sustainability at LSE more broadly also offered an insight into further solutions and areas of improvement, such as pricing.

2.5: COVID-19

The COVID-19 pandemic has inevitably created some short and mid-term challenges in advancing LSE's sustainability agenda. Safety measures to ensure the wellbeing of students and staff on campus have been implemented such as opening only select food establishments, using disposable containers instead of reusable ones, and limiting the number of students allowed in certain spaces on campus.

These measures have impacted the food waste data being collected. The data shows there has been a sudden drop in, and in some cases disappearance of, food waste around campus. This is a result of the inevitable reduction in the amount and frequency of students visiting campus this year. This implies that the data collected after March 2020 is an anomaly, when compared to usual waste produced at LSE, and is therefore treated as such. It is possible to see that where this reduction has occurred on campus, food waste has been, to a certain extent, redistributed to halls of residence, where students based in London are now spending much more of their time.

Although COVID-19 has been the focus of conversations in 2020, the pandemic has strengthened the longer term sustainability commitments of LSE. Such a commitment to sustainability will only be heightened when costs are also taken into consideration. With profit margins becoming ever tighter and revenue having been significantly reduced, LSE Catering and LSE in general will naturally have to find ways to recoup lost revenue. Sustainability in its many forms presents a unique opportunity to do so. Many of the strategies raised in this report enable LSE to simultaneously combat both financial and sustainability issues.

Finally, there is a small positive to be gained from COVID-19. The significant impact on normal campus proceedings and the lower demand for LSE Catering's services presents an optimum environment to run trials of the proposed solutions. Such abnormal circumstances allow for further iteration and eventually perfection, in time for when (semi-)normal campus operations resume.



3. External Partnerships



Collaboration: The LSE Sustainability Strategic Plan acknowledges the importance of both internal and external collaboration in the university's journey to sustainability. This section of the report specifically focuses on the role of external collaborations with companies, brands, and non-profits in helping to alleviate food waste at LSE. The following section is divided based on the two key external collaborations that have been identified as most relevant and useful to the food waste problems facing LSE.

3.1: Too Good To Go

Problem

At the end of service campus restaurants attempt to identify what can be preserved in order to make items such as soup the following day. In the case of food unable to be preserved for the next day, stakeholder interviews revealed that such items must be thrown away. Within LSE Catering's cafés, much of this waste can be donated to LSE FoodCycle for redistribution (please see section 4.1. for more details on this partnership). In the case of the campus restaurants, however, this produces unnecessary food waste, as well as a financial loss from not selling this cooked food. These issues are both exacerbated within the current COVID-19 context, due to unpredictable demand and tighter profit margins as a result.

Solution

Too Good To Go (2G2G) is a British food waste app that sells “magic bags” of food at the end of service at a discount rate to app users. It is currently utilised by a total of 16 UK universities. The introduction of 2G2G to restaurants on campus presents an innovative way to recoup lost revenue and to alleviate hot food waste on campus. 2G2G is an appropriate choice of app for many reasons, most important being its strong pre-existing brand recognition amongst LSE students. Survey data reveals that 64.6% of respondents either use the app or are aware of the app and its mission.

Trial

An initial trial period for the app has been arranged for Lent Term 2021 at the Fourth Floor Restaurant (OLD). Given the potential security risks of such a location, this location will be “hidden” on the app, with access given to LSE staff and students exclusively, via a unique code. This small scale trial will allow LSE Catering to iron out any issues that are faced when using the app, iterating the process over time.

Post-Trial Adoption

Once the trial is complete, an assessment of the app at LSE will take place and, if deemed successful, 2G2G will launch at The Garrick following its reopening in 2021. The Garrick is likely to be more successful than the Fourth Floor Restaurant because it is accessible to the general public. Further roll out can be considered for the Denning Learning Café in the LSESU, but will require new and independent negotiation with the LSESU.

3.2: Food and Beverage Brands

Problem

LSE Catering has already made promising steps towards the adoption of more sustainability focused and socially conscious pre-packaged food and beverage brands. Such brands include Flawsome, Innocent and Lemon-Aid. While praise should be given for the adoption of such brands, it is important to recognise that LSE Catering need not stop there. Despite their virtues, such brands are not necessarily the most optimal choice for LSE. For example, Innocent may adopt an incredibly socially conscious image, but this does not stop the drinks being made in Rotterdam and served in plastic bottles. There appears to be a lack of support for more local brands and for brands that help to eradicate pre-consumer food waste, through the use of “wonky” fruit and vegetables.

Solution

The adoption of more local, food waste conscious brands is the next step in the development of the product range available to buy at LSE. The adoption of the following three brands would show a clear progression in LSE’s food and beverage offering, in terms of a greater consciousness of food waste:

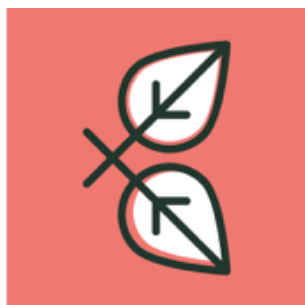


All three brands are based in London, sourced and made in the UK, and use imperfect fruit and vegetables within their products. In addition, both Dash and Square Root offer their product in cans, a far more sustainable and viable packaging material than plastic and glass in terms of rates of recycling. Rubies in the Rubble offers a food waste conscious alternative to the condiments served across LSE. In terms of packaging and other factors, it is an overall more sustainable choice to the generic-brand condiments currently bought and used by LSE Catering.

The practicalities of this solution can involve an on campus tasting event of each different drinks brand in order to determine most popular flavours. In line with the event series mentioned in section 6.1., the owners of the above brands can be contacted in regards to arrange a potential campus event. Once the product list is decided, drinks brands can be offered initially at a subsidised price on campus to encourage uptake, including the currently offered Flawsome beverages.



4. Protocol



Collaboration: This section of the report recognises the valuable internal partnerships that LSE already has established. Food waste relies on collaboration, but in order for collaboration to be successful, protocol must be in place so that all stakeholders know what is going on and what their role is. This section of the report recognises the value of these internal partnerships and proposes strategies to strengthen them, via the introduction of more formal protocol.



Our School: In order for LSE to become a hub of environmental good practice in higher education, measurable data needs to be both in existence and accurate. The overarching aim of this section is to establish protocol in order to improve the amount and quality of food waste data. With this data, LSE will be able to quantify its food waste efforts and analyse the effectiveness of the initiatives in place.

4.1: LSE FoodCycle

Problem

LSE FoodCycle is a student-led initiative that works closely with LSE Catering to collect food items from cafés on campus and distribute them to homeless individuals around the Lincoln's Inn/ LSE area. Donated food items normally consist of sandwiches, pastries, and packaged snacks such as crisps. There are many different problems with this partnership in its current form that are preventing a more optimal system for alleviating food waste and for redistribution. Through interviewing the main stakeholders of this partnership, it became evident that many of the partnership's problems hinge on poor communication. Specific problems centre on:

- Supply of donated food appears to vary significantly
- Lack of documentation to track the amount, type and source of donations
- Implications of an annual change in society leadership
- Informality of the volunteering process

Another important problem to consider is the space within which LSE FoodCycle currently operates. Many societies at LSE seek to redistribute food to the homeless, but there appears to be a real disconnect between them all. In addition, by focusing redistribution efforts around the LSE campus, LSE FoodCycle is limiting itself and its distribution channels by “competing” with other charitable bodies in the area such as Hare Krishna.

Solution

The overarching solution to many of the aforementioned problems focus on a need to formalise the operations of LSE FoodCycle and to educate LSE Catering staff about the partnership.

It is essential to instigate a clear zone of jurisdiction for this partnership. Previously having been somewhat of a free for all due to lack of communication, the only consistent collection point is Café 54 (NAB). By officially introducing the partnership to all campus cafés operated by LSE Catering, supply will increase significantly. All staff will be made aware of the partnership and a small reminder card will be placed behind the counter of every café in order for LSE FoodCycle volunteers to have a point of reference when collecting donations.

In an additional effort to increase supply, LSE FoodCycle will become the first port of call for all other societies wishing to undertake this type of volunteering. Working with LSE Volunteering and the Faith Centre, LSE FoodCycle will educate societies on the best practises surrounding food redistribution and assist in the execution of the volunteering. This in turn will allow for more harmony amongst the LSESU and its societies by bridging the gap between the various societies currently attempting to feed the homeless.

When volunteers go to collect donations, they will be entrusted with documenting the exact amount and type of donations received from each café visited. This collection will occur every day at approximately half an hour before each café's closing time. Given the staggered closing times and thus, broader range of volunteering time slots, more students will be able to volunteer, in theory.

4.1: LSE FoodCycle (Continued)

This aforementioned documentation will be communicated with the President of LSE FoodCycle. The President will then be in charge of collating and transferring this data onto a spreadsheet, in order to track supply over time and to identify any potential trends. This spreadsheet will be shared with the LSE Catering's Head of Sustainability who will also be able to utilise this data in the form of quantifying the success of this partnership.

Once collected, students will begin to give this food out to the homeless populations they encounter. Rather than limiting redistribution to the Lincoln's Inn/ LSE area, student volunteers should be encouraged to begin their walk home and distribute food along the way. In doing so, LSE FoodCycle will limit overlap with the work of Hare Krishna and help feed more homeless people in London.

The process for recruiting volunteers is currently centred around a WhatsApp group chat which has created problems related to volunteer reliability. Throughout Lent Term 2021, the society will work with LSE Volunteering to devise a short volunteering agreement for volunteers to sign, as well as an overarching volunteering policy. This, combined with a new booking system, will enable LSE FoodCycle to legitimise its operations and encourage accountability. As well as this, the society will be able to advertise the volunteering via LSE Volunteering and thus capture a wider audience.

All elements of this solution need to be formally documented in order for consistency of operations each academic year, regardless of committee membership changes. This document can serve as a manual for the committee each year so that the same mistakes are not made each year and the society's efforts can continue to grow.

4.2: LSE Events

Problem

LSE Catering is often in charge of catering many, if not most, of the events held on campus. LSE Catering already claims to make supply of event catering meet demand as much as possible, but perfect balance at this stage is often unlikely. Unique to this style of catering, food must be eaten the same day as the event due to food hygiene standards. Logistically, this food is also ineligible for redistribution via LSE FoodCycle or Too Good To Go.

Presently, LSE Catering allows event organisers to take any remaining food away at the end of an event, but does not allow them to take the food on its reusable service trays. Qualitative accounts also reveal that staff working at the event often eat the food available, though this is not necessarily always the case, nor part of official protocol. In addition, every so often, the trays of food are taken to the pubs on campus at the end of the event for customers to consume free of charge. While it may often be the case that all of the food eventually is consumed, meaning no food is disposed of, it is not always the case.

Solution

Given the short term deadlines for this food, as many protocols as possible should be formalised in order to ensure all food at every catered event is consumed. Any communication between LSE Catering and the event organiser(s) should include reminders about the ability to take any remaining food away with them after the event. Part of this reminder should be in regards to bringing appropriate containers in order to transport this food.

If any food remains after this, staff should be more openly encouraged to take food with them after their shift has ended. The ability to bring a reusable container to a shift will soon become standard procedure and so, constant reminders are less necessary here.

Finally, it is essential to ensure that any food remaining after this second stage is able to always reach a pub on campus. Rather than only implementing this if and when staff remember to do so, the decision to transport these trays to the pubs should now become standard practise. Staff working at the event should drop off these trays to the pub as they leave campus after their shift.

Any food that remains after all three of these stages should be put into a designated food waste bin on campus by a member of staff at the pub, to be sent for anaerobic digestion (AD).

These various stages should combine to guarantee that no food from catered events goes to waste. By being made into formal policy and guidelines for staff to follow during each event, responsibility is clear with no room for confusion.

4.3: Catered Accommodation

Problem

Food waste procedures at residential halls are not standardised. Even when standardisation is, in theory, supposed to have occurred, it is often the case that disparities emerge in practice. This inconsistency can be attributed to three main factors:

- Whether or not the hall is catered
- The borough in which the hall is located
- The actions taken by the halls and relevant LSE stakeholders

Bankside House appears to be leading the way in both data accuracy and food waste procedures, even if many of these procedures appear to have been short lived trials, such as industrial weighing scales. The credible data measuring that has taken place at Bankside House suggests about 3kg of food waste per resident per month (see appendix 8.5.), though this is likely an underestimation for reasons outlined below. However more advanced it may be, the case study of Bankside House nonetheless has some key areas in need of improvement.

Currently, the food waste protocol is almost exclusively focused on the canteen which provides only one meal per day to residents. As such, food waste protocol does not presently cover the actions taken by residents for the other meals prepared and consumed per day. This issue is exacerbated by COVID-19 given the ability of residents to now take canteen food away to eat in their own rooms, producing even more food waste outside of the canteen than normal. It was the belief of LSE that each kitchen contained a small designated food waste “caddy,” but in reality this was not the case for every kitchen. In the two refuse rooms per floor (totalling 14) only mixed recycling and general waste “wheelie bins” are present, representing a lack of procedure for correct food waste disposal within these student kitchens.

Solution

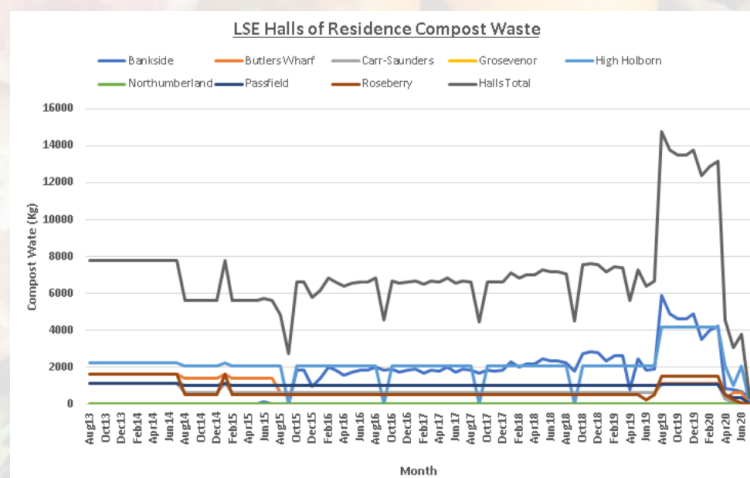
Using Bankside House as an initial trial location, a designated food waste wheelie bin will be introduced into every refuse room. This hall of residence houses the largest number of LSE students and thus, will allow for the biggest amount of theoretical change to take place. Each bin will be accompanied by a poster explaining how to properly dispose of food waste. These bins will be emptied at the same time as the other bins in the refuse room i.e. frequently. Such frequency and the presence of a fixed lid on the bin will alleviate concerns aired by LSE staff that a large amount of food waste could attract rodents. If successful, this trial can represent a case study for other, smaller halls of residence in adopting new food waste procedures.

4.4: Data Collection in Halls of Residence

Problem

When analysing LSE waste data between 2013-2020, nearly all halls of residence report the same amount of compost data across consecutive months, not deviating a single kilogram. For instance, figure 1 shows how halls such as High Holborn alternate between dips and constant levels of 4.7kg per student from 2015 to 2019. Any disparities that relate to cross-borough differences in food waste collection procedures are not highlighted in the data. To include halls that are unable to have the food waste collected in the data is misleading at best. The data for halls such as Carr-Saunders, Butler's Wharf, and Rosebery Hall appear to be too synchronous which raises questions on the integrity of the data collected.

Figure 1:




Bankside House is the only exception, where month-to-month variations are observed. This has led to the conclusion that other halls are not recording the exact amounts of food waste emitted at the same frequency as Bankside House. Although Bankside House provides useful insights on the total amount of food waste collected, there is no breakdown, or even informal accounts, on the types of food disposed of, such as meat, vegetables, carbohydrates, fruits etc. Nor is this data able to highlight the different sources of waste e.g. the canteen versus student kitchens. As a result, this data reveals little of the different halls' effectiveness in limiting food wastage.

Solution

In order to gauge the true extent of the food waste problem at LSE, the correct amount of food waste data needs to be known. Halls of residence must adopt more stringent protocol around food waste measurement. If it is the task of an external waste collection actor to measure the waste, LSE must communicate the need for food waste to be measured properly. More routine and frequent measurement is absolutely necessary, as modelled by Bankside House. Such a solution is in line with LSE's ambition to be a hub of environmental good practice in higher education. More importantly, further iterations of the food waste reduction process require the university to know its exact waste production in order to analyse the success of initiatives already in place and over time. As well as the ambitions of the overall institution, individual halls should have a vested interest in learning how much food waste they currently produce, especially if it is a catered hall.

A collage of various food waste items including bread, meat, and vegetables.

5. Portioning

A collage of food waste items including lettuce, tomatoes, and bread.

Engagement and Leadership: In order for LSE to work with the local community to promote sustainable practices and policies, it must first ensure that it is executing sustainable practices internally. The solutions regarding portioning in this section are some of the most straightforward and easily implementable strategies in the entire report. They represent an opportunity for LSE to make swift and easy changes that have real impact to food waste levels on campus.



5.1: Tiered Portion Sizes

Problem

A consistent complaint that emerged when interviewing stakeholders from LSE Catering and LSE Sustainability was that much of the food waste currently found in campus bins can be attributed to leftovers. Reasons for the production of such waste can be attributed to a variety of factors such as a lack of education on the importance of not wasting food or simply disliking the food. In addition, the reasons for wastage can vary based on the type of food being served; for example, a pre-packaged sandwich versus a hot canteen meal.

Interviews with LSE Catering and Sustainable LSE revealed that the Fourth Floor Restaurant is a key culprit of portion-related food waste. Qualitative evidence implies that this is a direct result of the excessive portion sizes and canteen style service on offer in this restaurant. All food waste from the restaurant is currently collected together with waste from several other campus sites at the Gorgers Alley waste station. Over two thirds of all food waste occurring on campus is at this waste site. Furthermore, until July 2016 food waste stemming from this restaurant specifically (named Brunch Bowl at the time) was measured directly and fluctuated between 5 to 10 metric tons per month (see appendix 8.5.).

This discovery also shed light on another problem related to pricing. Such a large portion size comes with an appropriately sized price tag (an average of £5.35 per serving). Despite value for money being hugely subjective, survey results revealed that many students deem the price per portion on campus as simply too high. In fact, 56.1% of survey respondents said they never or rarely (a few times per term) ate on campus, with the most common explanatory factor being cost (see appendix 8.3.). With students being LSE Catering's largest source of potential revenue, the need to attract as many students as possible to eat on campus is essential.

Solution

The introduction of a tiered portion system will seek to reconcile these two issues within the context of the two restaurants on campus. Ensuring uniformity and transparency in serving procedures is an easy and essential way to resolve this food waste problem. Although tiered portion sizing can be perceived as confusing it is hoped that, with clear communication around the topic, this issue can be resolved. In order to avoid any potential confusion, the tiering will be initially limited to two sizes, one smaller than the current option and a large option somewhat resembling the current size.

Logistically speaking, this solution will take the form of making the smaller portion universally equal to one serving spoon of protein plus one serving spoon of carbohydrate, while a larger portion consists of two spoons of each, for example. Sizing will be clearly communicated by the server asking "regular or large?" and through point of sale literature. This solution will enable customers to pick a more appropriately sized meal for their needs which will reduce the likelihood of food waste from portion sizes that are too large. Another benefit of this solution is that it will allow LSE Catering to appeal to students who currently find pricing too high by offering a smaller plate of food that is accompanied by a smaller price tag.

5.2: Carbohydrates

Problem

When looking at the Fourth Floor Restaurant specifically, qualitative evidence revealed that much of the waste produced can be attributed to carbohydrates. Servings of rice, noodles, and such like, are directly contributing to the current volume of food waste being produced in this food outlet. Given the incredibly low cost price of such items, it is understandable that generous amounts are able to be given. But such generosity is lost when the portion size becomes impossible to finish and as such, a source of consistent food waste.

Solution

There is a clear need to unilaterally reduce the size of carbohydrates being issued in this restaurant on campus. This problem is present regardless of the aforementioned solution around tiered portion sizing, assuming that the larger size will equate to the current portion size on offer. As such, both solutions are able to work in tandem with each other. This second approach to portion sizing presents another easily implementable solution to reducing food waste in the Fourth Floor Restaurant specifically.

Yet again, its effectiveness hinges on both transparency and education. As such, portion sizing will be clearly identifiable at the time of ordering through both verbal and written point-of-sale communication. An additional add-on solution could also involve making carbohydrates unlimited or refillable to allow the minority of customers who do not produce leftovers to continue to find the same value for money at the Fourth Floor Restaurant.



6. Raising Awareness



Education: A fundamental aspect of the LSE Sustainability Strategic Plan is education. Emphasis has been placed on the formal and informal curriculum, with little attention given to the idea of integrating sustainable practises into the lives of students. In this section, the merits of more passive techniques for raising awareness will be highlighted. The solutions presented aim to engage and educate students who do not have an active interest in sustainability, rather than the already highly engaged minority.



6.1: General Food Waste

Problem

As has already been alluded to, not all LSE students have an active interest or knowledge in sustainability, let alone food waste as a specific issue. However, this does not mean that food waste and sustainability are not important issues, nor that students should not be made to even passively engage with them.

Currently, many of the opportunities for students to involve themselves with food waste activities rely on an individual taking a certain degree of initiative as well as them already having a pre-existing interest that is large enough to take this initiative. This is demonstrated by the 62.2% of survey respondents who had not previously volunteered for a food redistribution charity, despite almost half wanting to, but were unaware of available opportunities.

Solution

The creation of an online event series that directly appeals to this type of student aims to increase indirect engagement with the topics of sustainability and food waste. The most important element to this solution is to recognise the audience being appealed to and in this case it is the segment of the student body not engaged with sustainability. The purpose of these events should not be to simply relay the virtues of eliminating food waste, but rather to connect it with something that LSE students already care about. For example, an interview with a successful sustainable start-up founder, such as Too Good To Go. Such an event would allow students interested in the following topics to want to attend: entrepreneurship, start-ups, venture capital, and international business expansion. It is inevitable that the topic of food waste and sustainability would be addressed in the course of the event, but it does not need to form the basis of the event.

Another solution hinges on the implementation of some kind of temporary art installation. Taking inspiration from the recent ice sculpture installation for LSE's Green Week 2020, as well as an installation at Goldsmiths University in September 2020 using carrots, the success of large scale and unusual art installations is clear. The most important element of such a solution's success is the ability to intrigue all passing audiences and as such, should again, not be obvious and intimidating in its connection to sustainability. The most optimum idea would be one that has high potential to go "viral" amongst the LSE community and beyond. It is also essential for the installation to be manned by people able to relay knowledge about food waste and the piece of art to passers-by. The actual art installation could be designed by an LSE student, as part of some kind of competition.

6.2: LSE Initiatives

Problem

The initial stages of this project were spent collecting information on all the food waste initiatives LSE currently has in place. Unsurprisingly, these initiatives were not neatly located in one easily accessible location and as such, required an entire team's effort to search out and collate.

While LSE has a whole host of initiatives related to food waste in place, awareness of them is incredibly low. Only 63.4% of survey respondents knew there were designated food waste bins on campus and 14.6% knew about the discounted price of hot food after 3pm on Fridays. Asking for ideas and comments at the end of the survey proved that the simple act of initially asking students to tick which initiatives they had heard about had served to educate them massively on what already existed.

With the exception of activities such as Foodari and AD, the success of many LSE food waste initiatives is directly correlated with student engagement and awareness. Given the low rates of awareness and engagement currently being exhibited, it is plausible to suggest that none of these consumer-facing initiatives are near to reaching their full potential. As this project seeks to implement further initiatives that hinge on student involvement, optimising student engagement is absolutely essential.

Solution

It is essential for these customer-facing initiatives to be actively promoted in order to increase uptake. The core of such a solution centres on the dire need to have a clearly signposted webpage devoted to collecting these opportunities into one space for all to access. A suitable location could be within the Sustainable LSE website or the LSESU Environmental Hub.

However, a web page will only cater to those actively seeking out such information. With this in mind, it is also essential to promote these initiatives on campus to attract other students. A physical marketing campaign that advertises these initiatives will contribute to an increase in uptake. Rather than risk complicating the message with food waste statistics and information, a series of posters will be produced that quite simply state what the initiative is. For example, one poster could state "Did you know, LSE ID card holders get 50% off hot food after 3pm on Fridays?". This straight to the point messaging campaign will allow students to engage in food waste without necessarily being consciously interested or aware of the topic, through the guise of discounts. It is hoped that this solution, combined with the other proposed solutions to help raise awareness, and the LSE Sustainability Strategic Plan, will eventually educate these students about food waste.

A digital marketing strategy is also essential for capturing the attention of students, especially those that are not based in London. By relaying information in a clear and engaging way through social media, collaboration with societies, Student Hub, and the various email chains used at LSE, the messages being conveyed should become somewhat unavoidable.

6.3: Halls of Residence

Problem

The lack of standardisation across halls of residence is also reflected in food waste awareness. If one hall of residence or kitchen benefits from an educational poster and food waste caddy, but another does not, the level of food waste education across the university will be highly uneven.

Every country has a unique system of waste disposal, often even differing between local authorities. There is an underlying assumption within the LSE halls of residence that students know how to dispose of food waste properly. Properly, in this instance, implies being in line with the rules of the borough of London in which they reside. The inability to correctly separate waste was a pain point raised within both survey results and interviews, at both a student and institutional level.

When considering the notion of “black boxing” in relation to food waste, it becomes clear that the current systems within LSE halls of residence are allowing students to become sheltered from the reality of food waste. Black boxing is in reference to the idea that limiting consumer interaction with an entire supply chain, in this case food, will reduce the likelihood of questions being raised about the overarching process. This can most notably be seen in the process of allowing students to simply load their trays of food onto a trolley ready to be emptied and then cleaned by staff. Rather than requiring students to engage with their own waste by making them scrape their own trays as is common in many canteens, such as the Fourth Floor Restaurant, students have less incentive to consider what happens to this waste after loading their tray.

Solution

Given the international composition of the LSE student body, education on the British system of waste separation is essential. Any assumption of this knowledge is creating a risk for improper waste disposal. It is only by teaching students what can be recycled, put in the food waste bin, or sent to landfill, that the halls of residence can expect uptake of waste separation efforts to be successful. Such education should take the form of posters next to each bin with insights into what can be placed in each bin. Education on this topic can also be dispersed by the hall itself via email correspondence, the student leadership teams and workshops.

Another element of food waste alleviation involves the food being cooked by the students in their own kitchens and how best to preserve these cooked meals and ingredients. Posters on the notice board of every kitchen with guidance on the topic will provide a reference point for students who are new to cooking, and food procurement and management.

In an effort to combat black boxing, halls of residence should make students scrape the waste from their own plates into a bin, rather than simply place their tray on a trolley. This is a way for students to subconsciously engage with the topic of food waste in a personal way. Such engagement can also be quantified per hall to reveal the total each individual is contributing to, and also has the potential to be made into some kind of inter-hall competition. Also, it is likely that the extra effort of having to physically scrape the waste will simply encourage students to finish the entirety of their meals, removing this stage of the post-meal process.



7. Conclusion



7.1: Concluding Remarks

LSE aims to become a beacon of successful sustainability for other higher education institutions to look towards. Before this is possible, LSE needs to improve upon their food waste reduction plan. This report has identified four areas to achieve this: establishing external partnerships, improving protocols, introducing tiered portion serving sizes, and raising awareness. Some of these areas aim to improve on the existing food waste initiatives already in place while others are new areas for LSE to venture into. Combined, these solutions offer a more integrated and diversified plan to reduce food waste at LSE.

It is clear that LSE is strongly committed to achieving the aims of its Sustainability Strategic Plan, but more needs to be done to ensure proper execution of the institution's vision as it relates to food waste. It is hoped that this report sheds light on these areas of improvement, gaps in the current LSE Sustainability Strategic Plan, and builds a foundation for future student-led research groups to uncover and explore more solutions.

7.2: Acknowledgements

On behalf of the Great Food Fight team, we would like to take a moment to give our sincerest thanks to all the people who helped to make this report a reality.

This report could not have happened without the unwavering commitment and ambition of the LSESU Sustainable Futures Society, the knowledge and passion of the current LSESU Environment and Ethics Officer Ellie Cottrell, and the guidance and expertise provided by 180 Degrees Consulting.

In addition, we give special thanks to each and every person who participated in an interview for the advancement of the project and of reducing food waste at LSE. Each person displayed such enthusiasm, commitment and willingness to help that, without them, this project would not be so strongly aligned to the values of students and staff and the goals that are already being pursued across the LSE campus and beyond.

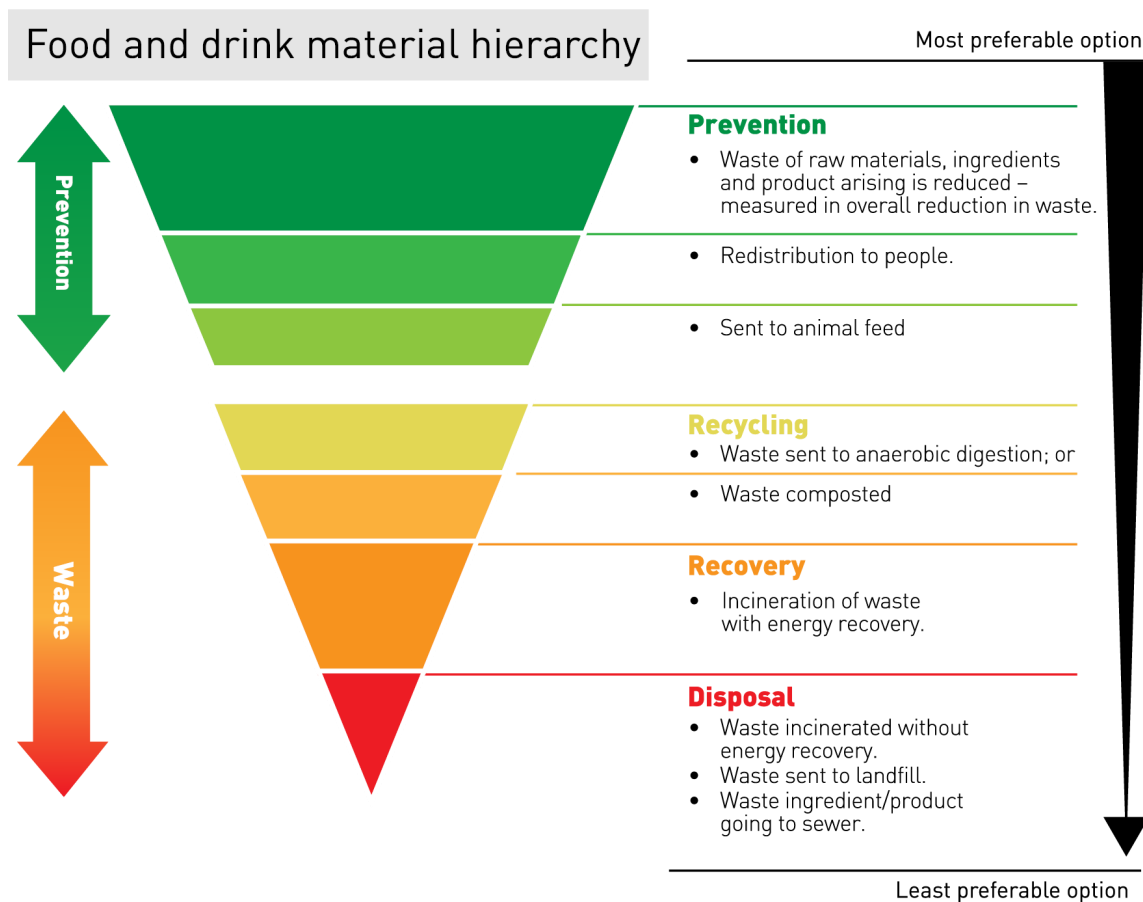
Finally, we look forward to liaising with Sustainable LSE, LSE Management, and the Estates Division in the near future to ensure that our solutions are heard and implemented in the coming months.



8. Appendices



8.1: Food Waste Hierarchy



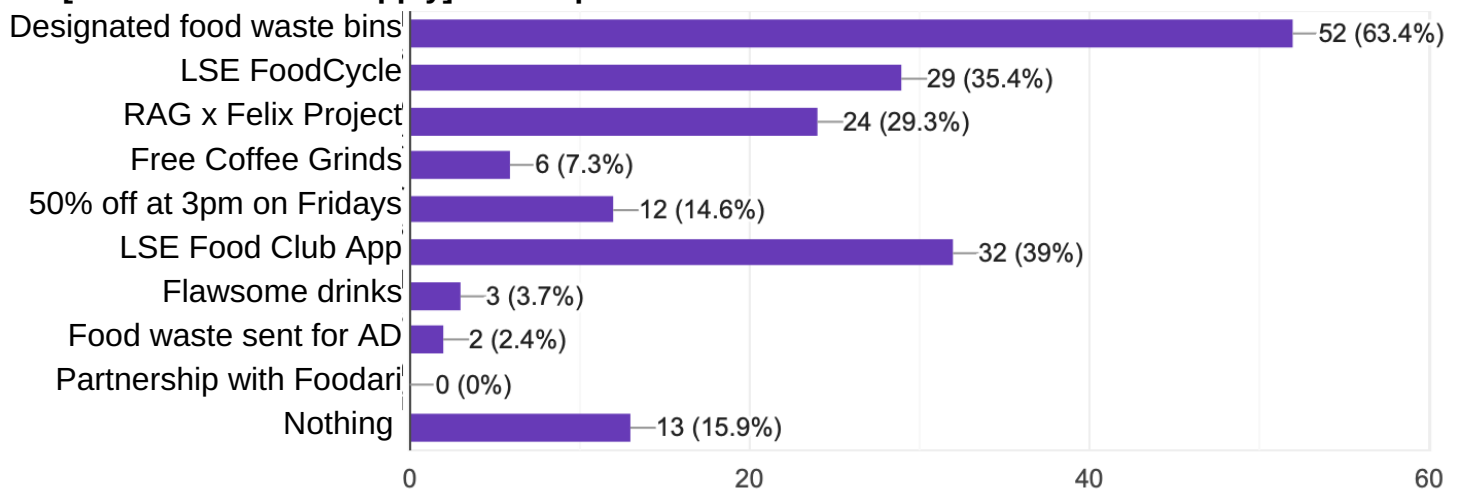
Source: WRAP website

8.2: Breakdown of Methodology

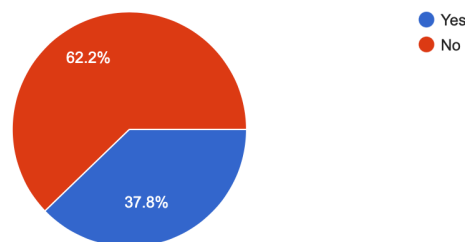
Primary	Quantitative	Survey of 82 LSE students
	Qualitative	9 stakeholder interviews
		Testing existing food waste initiatives
Secondary	Quantitative	LSE monthly waste reports for campus and halls of residence
		Data on LSE Food Club app
	Qualitative	Review of all LSE literature on food waste and sustainability

8.3: Survey Results

1. Which of the following LSE food waste initiatives are you aware of/engaged with? [Please tick all that apply] - 82 responses



2. Have you ever volunteered for a food redistribution charity? [Either via LSE or externally] - 82 responses

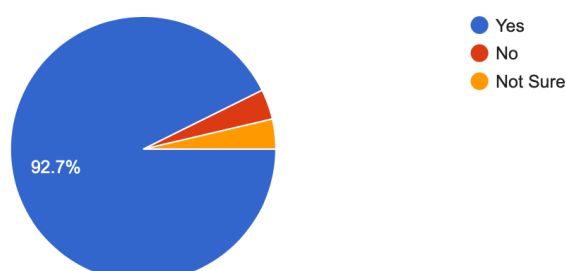


3. If your answer was 'No' for the previous question, please explain why? - 42 responses

Responses have been grouped together and listed in order of frequency:

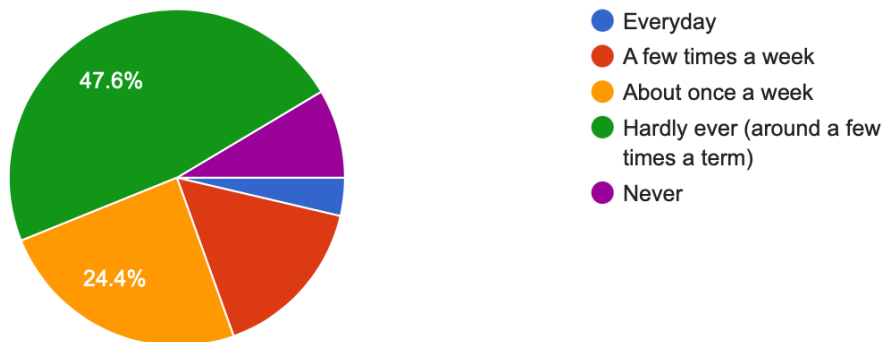
1. Lack of awareness (18)
2. Not been proactive enough (7)
3. Not enough time (7)
4. Not interested/ never thought to (5)
5. FoodCycle is not active in its recruitment (2)
6. No incentive to (2)
7. Already doing other kinds of charity work (2)
8. Care about other issues more (2)
9. COVID-19 (1)

4. Do you consider food waste an important issue for LSE as an institution to tackle? - 82 responses



8.3: Survey Results

5. How often do you buy food and/or drinks from a catering facility on campus? E.g. Cafe 54, Shaw Cafe, The Garrick - 82 responses

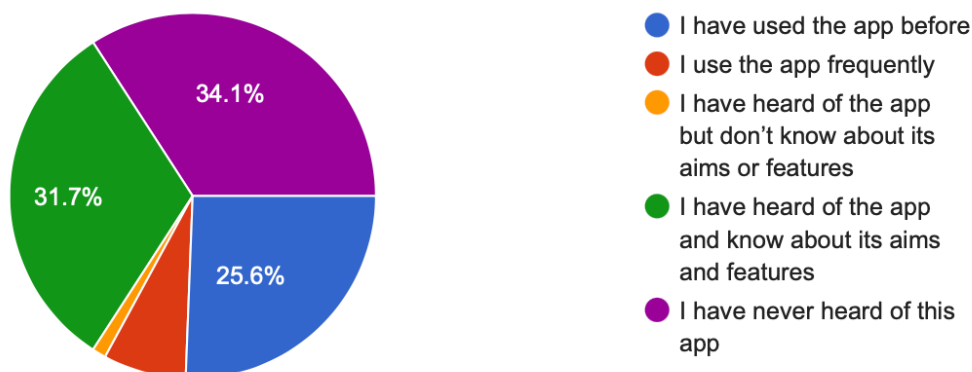


6. What would encourage you to purchase more food and/or drinks from a campus catering facility? [If you selected the option “everyday,” why do you choose to buy from campus catering facilities over external alternatives?] - 82 responses

Responses have been grouped together and listed in order of frequency:

1. Lower price/ cheaper (38)
2. No COVID-19 (8)
3. Greater choice/selection (11)
4. Sustainable packaging and procedures (7)
5. Better quality food// more nutritious (7)
6. More seating available (3)
7. Charitable donations (2)
8. Convenience (1)
9. Online menu (1)
10. A more social setting (1)

7. What is your association with the app “Too Good To Go”? [please select the most relevant answer to you] - 82 responses



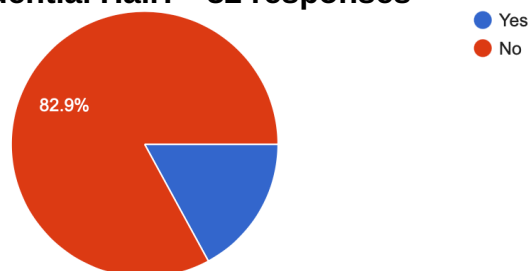
8.3: Survey Results

8. Do you have any ideas on how you would like LSE to improve its tackling of food waste?- 82 responses

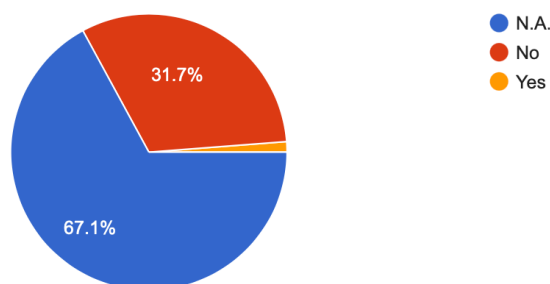
Responses have been grouped together and listed in order of frequency:

1. No (23)
2. More awareness (advertising) (17)
3. Donate surplus food to charity/ redistribute to the homeless (13)
4. Compost it (6)
5. Cut prices after a certain time everyday (5)
6. Too Good To Go (5)
7. Flexible Portions (5)
8. Ban single use plastic packaging (4)
9. More food waste bins (on campus and in halls) (4)
10. Communication and collaboration between LSE and LSESU (3)
11. Match supply and demand better (3)
12. Open the water fountains (2)
13. Coffee cup recycling stations (1)
14. Eating areas that encourage people to enjoy eating (1)
15. More desirable food (1)
16. Educate students on preserving their food better (1)
17. Educate students on how to use kitchen food waste bins (1)
18. More volunteering opportunities (1)
19. Replace pre-packaged food items with "pick your own" style bars like Shaw Café (1)

9. Do you live in an LSE Residential Hall? - 82 responses



10. Are you aware of any food waste initiatives in your residential hall? - 82 responses

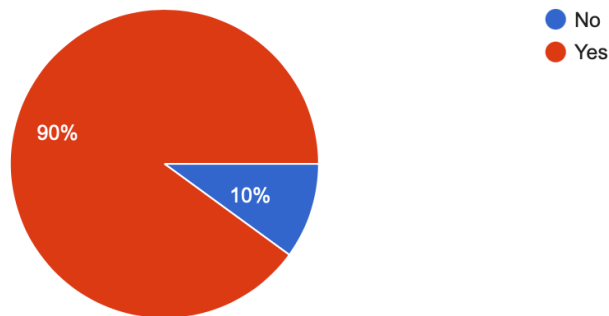


11. If your answer to the previous question was 'Yes', please provide a brief description. - 1 response

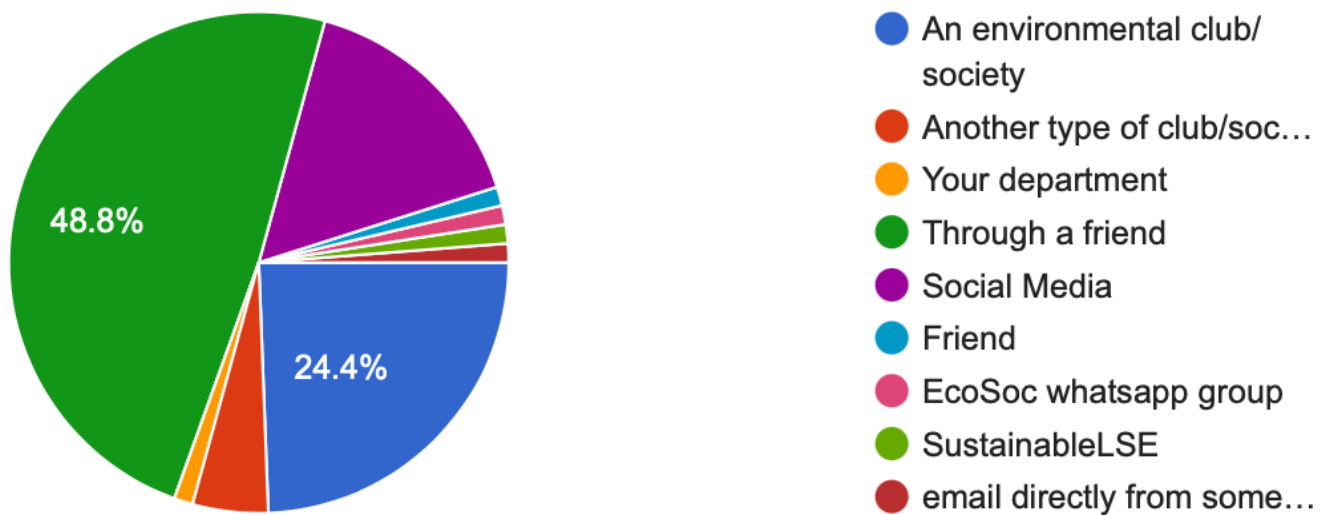
Compost bins in kitchens

8.3: Survey Results

12. If you answered 'No' in the previous multiple-choice question, would you be interested in specific food waste initiatives at your residential hall? - 30 responses



113. How did you hear about this survey? - 82 responses



8.5: Interview Summaries

President of LSE FoodCycle

- Collects food everyday at 4pm from Café 54 (NAB) upon receiving a text from a member of LSE Catering. Based on supply of food received he believes that it is only Café 54 contributing, rather than all cafés on campus dropping off their donations there for collection.
- Food that is given to them tends to consist of sandwiches, pastries, packaged snack items.
- They then go around the campus and nearby area to distribute these items to homeless people.
- Volunteers are composed of society members as well as the occasional post on Career Hub to attract the wider student community. At weekends they tend to rely on the efforts of ICL students. Volunteers are collated and organised via a WhatsApp chat.
- COVID-19 has all but stopped their operations in the usual form.

Head of Sustainability at LSE Catering

- LSE FoodCycle: success of the partnership depends hugely on the committee in place each year. Different units shut at different times which creates confusion. Although the CRB and The Garrick were supposed to start taking food to Cafe 54, they have not this term because of COVID-19.
- LSE Events: Leftover food is offered back to the person who booked the event to take away. They are not, however, allowed to take the trays with them. If they say no, it is taken over to the George pub for customers to eat.
- 2G2G: Appears to be 2G2G vs FoodCycle. A partnership would depend largely on the details of the contract needing to be signed. Concerned about having new partnerships with companies because it means giving them access to the campus which could be risky during COVID time Logistical problem of say the 4th Floor Cafe and 6th floor cafe i.e. safety.
- Food Club App: Sometimes apps are a bit of an issue in the past and is aware of some of the shortcomings of the app.
- New Brands: TUCO contract: a big collective of brands that have been approved by this body. Popular with universities to ensure standards and safety. Strict regulations on safety, hygiene and supply chains that support local farmers.
- Portioning: Tends to be carbs that get thrown out. Has some reservations about a token system because students might try to game the token system. Education and awareness here is vital.
- Coffee Grounds: They are available anytime and are stored in paper bags as the grounds are quite dry. Uptake has been quite slow. Currently do have a poster to advertise.

Sales Specialist at Too Good To Go

- Safety: Arrange to portion and then relocate food to a more accessible areal. Other universities have opted for a “Hidden Store” on the app for the more inaccessible buildings. This essentially operates as a code that can be distributed to students and staff only and inputted into the app to reveal the LSE locations.
- Contract: No contract needs to be signed between the app and LSE. There is a short list of terms and conditions just about correct use of the app etc, nothing unusual or sneaky.
- Cost: £39 per year per outlet Commission taken from each sale of a mystery bag £1.09 per bag <£4.40 25% of sale for bags >£4.40. A set about of mystery bags are on the app each day (decided by LSE). Price of mystery bag is set at approximately a ratio of 1:3.

8.5: Interview Summaries

Sustainable Projects Officer at LSE

Head of Sustainability at LSE

Residences Sustainability Officer at LSE

- LSE FoodCycle: They mentioned that one of the pain points is that because students in charge of the foodcycle come and go, documentation is spotty so they recommend improving on this to understand what types of food are being recorded etc.
- Elena mentioned that a few years back, she and her team went through random rubbish bins on campus and found that most of the bins contained a lot of half eaten food. Peels from fruit and veggies are also contributors to food waste and she wondered if it's possible to simply serve and prep food with the peels? However Charles thinks it might not be feasible for several types of fruits and veggies. The way food is prep is very important as the moment blood from meat touches food, they are thrown into the bins.
- Each hall has its own strategy and really depends on whether they are catered or not so there's not really a unified strategy. Some halls are not LSE managed and have different infrastructure so this impacts the way food waste strategies get implemented.

Residences Sustainability Officer at LSE

- Food Waste Bins: Worried about the cost, manpower of emptying out the bins and attracting pests.
- Posters: A food waste poster was supposed to be pasted on the walls of halls. We informed him that for Bankside at least, this had not happened.
- Each hall has its own sustainability board with varying levels of effectiveness in educating residents on initiatives.
- There are particular areas where posters are allowed to be placed so we have to be mindful of that. He suggested we 'test' the market and are clear about the message being conveyed to avoid potential confusion.

Head of Outreach at LSESU Raising and Giving (RAG)

- Volunteering: Advertised in the RAG social media channels, not via LSE Volunteering. Have done volunteering days twice this term and aim for the same in Lent Term. 1st: a trial run of the process using committee members. 2nd: volunteers registered interest by completing a Google form. 2 volunteers at a time are given Deliveroo-style cube backpacks and head to the 2 nearby partners (Waitrose and an EAT-style chain) to collect food for redistribution. The supply side amounted to 1-1.5 bags worth of goods per pair. The Felix Project provided a map (via an app) with routes to follow included locations where there is a known homeless population that ended at a partnered organisation where all remaining items could be dropped off if anything remained (e.g. homeless shelters).
- Holding an online RAG Conference in February 2021. A week of speaker events and workshops featuring each of their charity partnerships. Will either be a ticket price of £3 or voluntary donations to attend.
- The Felix Project: Last year it had been the local charity partnership and became a key partnership this year. Whether the partnership is continued next year is dependent on next year's committee. The charity has a dual focus on food waste/sustainability and homelessness.

8.5: Interview Summaries

Assistant Professor in Environment at LSE

- Wider educational awareness is something Julia Conquers has great merit in improving the consciousness of food waste on campus. However, Julia stresses the need to not just educate on how to dispose of waste but on what impact this has.
- The idea of black boxing that centres around the hiding of whole processes and supply chains from the consumer in order to aid simplicity, among other reasons.
- As a general rule she thinks that if implementation is relatively easy, she says “why not?” to the solutions proposed.

Manager at LSE Volunteer Centre

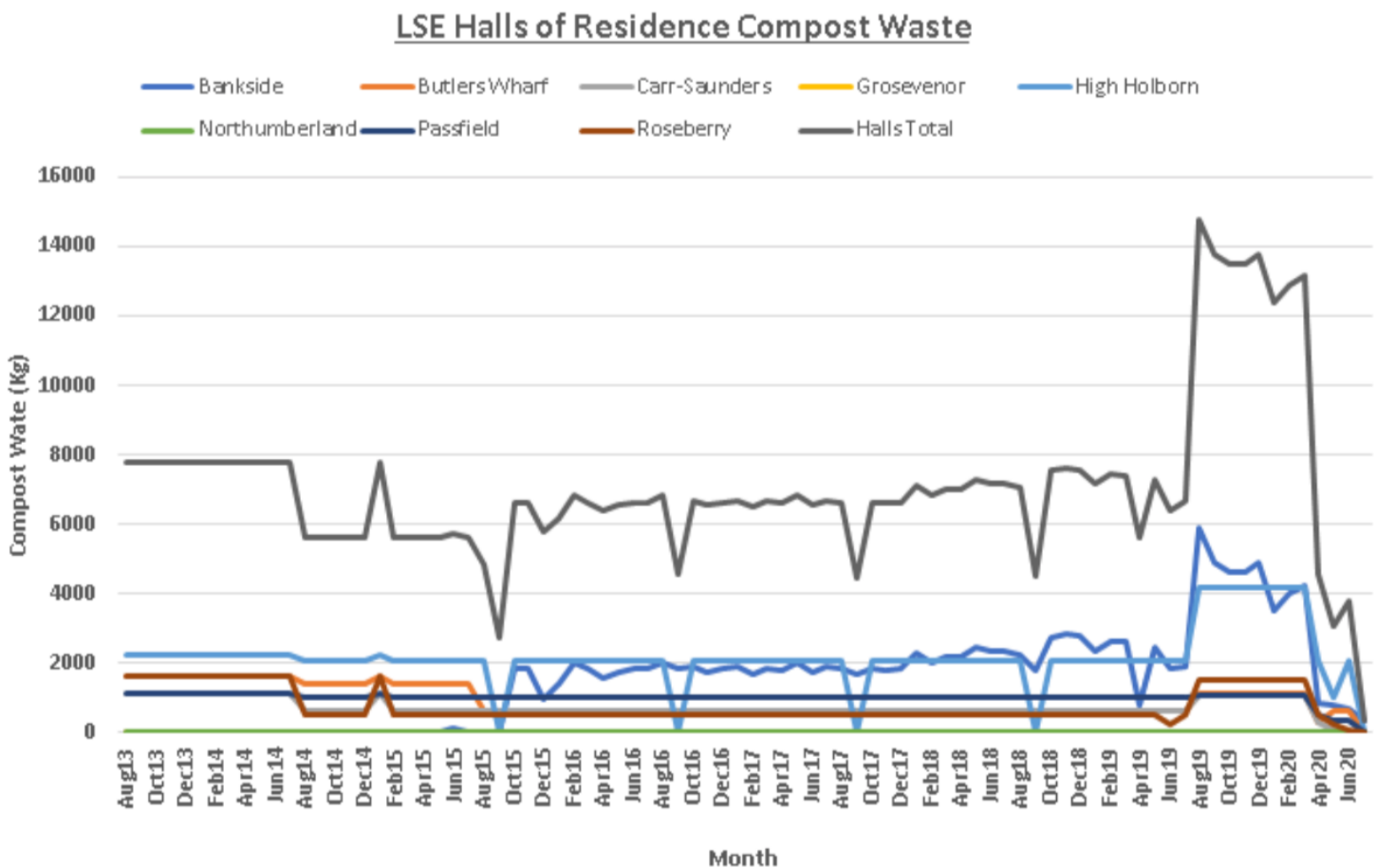
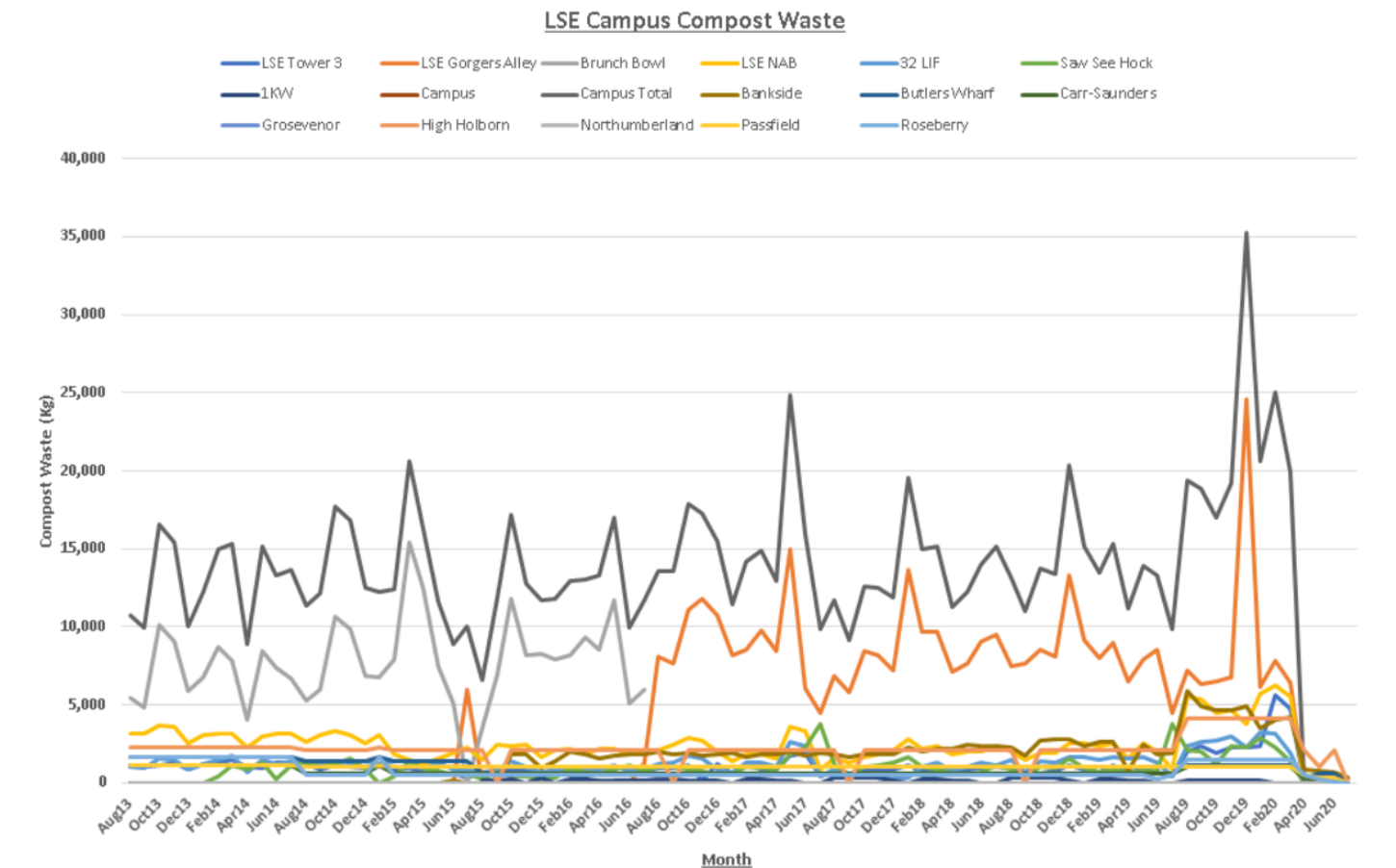
- Each year countless societies endeavour to give food to the homeless. For some, like FoodCycle, it is their bread and butter, while for others they do it randomly with little knowledge regarding correct execution. This creates many potential problems regarding health and safety, food hygiene, etc.
- LSE currently lacks a source of information regarding correct execution of food redistribution. FoodCycle could be this go-to partner for societies at LSE wanting to give food out.
- To advertise volunteering opportunities simply post on Careers Hub and once legitimacy has been gained, LSE Volunteering can also begin to promote.
- In order to formalise operations, he suggests creating some formal volunteering guidelines and protocol for volunteers to sign which highlight their exact roles and responsibilities.
- LSESU x LSE have launched a project to investigate homelessness.

Secretary of LSE FoodCycle.

- Many of the same pain points that Toby Barnes highlighted.
- WhatsApp: the society has outgrown this method of communication as it is highly informal. Have had many problems with volunteers not completing their roles properly.
- Very little outreach and social media advertising this term.
- A huge intake of members this year (~70). Incredibly frustrating as supply is simply not there.
- In the past, they had gone to every café on campus and were forced to explain the FoodCycle partnership every time to the new members of staff which took up a lot of time that could have been spent giving food to the homeless. Lack of awareness by staff about the partnership.

8.6: Findings from LSE Waste Data

Line Graphs of LSE Campus and Halls Compost Data from August 2013 to June 2020



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Data

1. Sustainable LSE - General Waste Collection Data for Halls of Residence and Campus - 2013-2020

Images

Images cited in order of appearance

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