# Lancaster Market Traders: Sustainability Audit 2019


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# Contents



## Disclaimer:

The content of this audit is original and created solely to inform LESS Lancaster and its partner organisations of the findings of the survey of Lancaster's market traders. The information was gathered in confidence, with traders' consent, and individual market traders have not been named in this document. Recommendations here are based solely on the information collected, as well as research from valid sources. They are not absolute, and circumstantial considerations should be made before following recommendations.

## Key Points

1. Single-use plastic has become an increasing concern in modern day, highlighted by Lancaster City Council's new Plastic Policy.

2. Decisions regarding food consumption, production and distribution have a critical environmental impact

3. Two markets in Lancaster, the Charter Market and seasonal Midsummer Market, were surveyed, and their plastic and food use were analysed.

4. Most market traders have been changing their practices to be more sustainable over recent years.

5. The vast majority of traders have noticed that Lancaster customers have become more environmentally conscious over recent years.

6. The average Charter Market trader used almost 10x as much single-use plastic compared with the average Midsummer Market trader.

7. Key reasons for plastic use included the pricing of alternatives, the feasibility of paper-based products in rainy weather and a limited range of sustainable plastic alternatives.

8. Midsummer Market traders also were shown to consistently demonstrate more sustainable practices regarding the sourcing and wastage of food.

9. To maximise traders' ability to transition to more sustainable practices, management is crucial to put the necessary infrastructure in place.

10. Traders can reduce their plastic footprint through using return schemes, buying plastic alternatives in bulk and signposting customers to the most sustainable options.

11. Improving transparency of the origin of food will allow customers to have confidence in traders and make informed purchasing decisions.

12. Discount schemes, deposit schemes, and loyalty schemes could have huge impact on customers' plastic use.

13. There is significant opportunity for collaborating and skill-sharing between market traders to promote sustainable practice whilst boosting business.

# Introduction

## The Problem with Plastic

Plastics are one of the most significant inventions of our time. Durable, insulating, malleable, cheap and waterproof, they have revolutionised the way in which we live our lives. As a result, it has been mass-produced and therefore there are vast quantities littered across the globe. It is estimated that between 1.5-4% of all plastic produced ends up in oceans, amounting to 5-13 million tonnes of plastic going into our oceans each year.

In the oceans, plastics can biodegrade to microparticles which can be ingested by marine life and therefore end up in the human food chain. Plastic particles have the ability to draw chemical particles towards them, many of which are carcinogenic. Scientists are now struggling to find marine species without any plastics present in their bodies[1]. Plastics additionally carry a significant carbon footprint, with their production and incineration giving rise to 400 million tonnes of $CO_2$ each year. Recycling 1 million tonnes of plastic saves the equivalent emissions as taking 1 million cars off the road for a year[2]. Single-use plastics are a key culprit in plastic pollution, accounting for over 50% of all beach litter[3]. Packaging is by far the biggest contributor to plastic waste in the EU (Fig 1.), with over 13bn plastic bottles alone being produced per year[4].

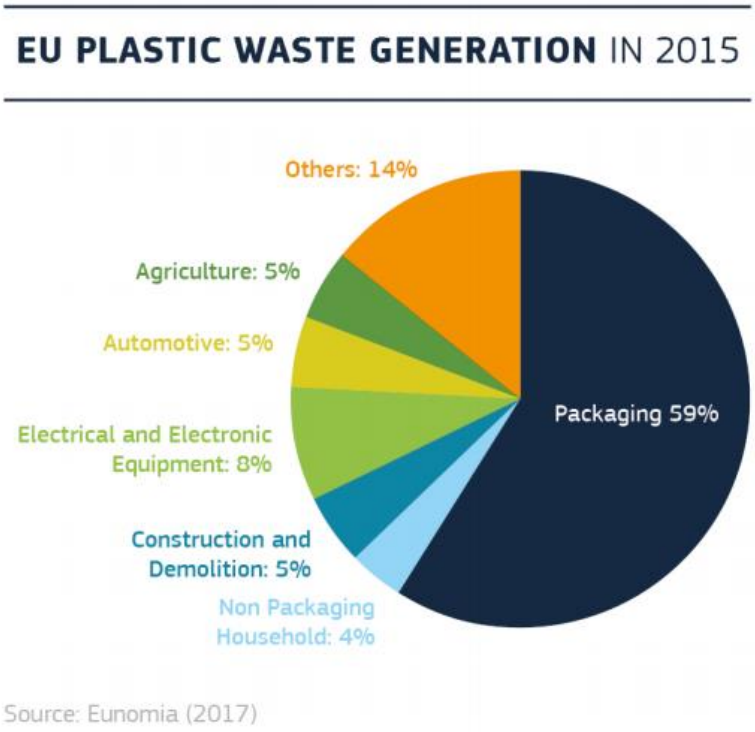



Figure 1. EU waste generation by sector

[1] Marine Conservation Society (2012) Microplastics in Personal Care Products.
[2] An EU Strategy for Plastics in a Circular Economy
[3] Directive of the European Parliament and of the council on the reduction of the impact of certain plastic products on the environment
[4] UK Environmental Audit Committee: Plastic Bottles – Turning Back the Plastic Tide

## Legislation

The EU Directive on Waste in a Circular Economy (2013) estimates that an additional 600 million tons of plastic could be recycled or reused annually. It was determined that a series of measures to reduce plastic waste could cause 170,000 jobs to be created by 2035, with 600mil tons of greenhouse emissions being prevented 2015-2035. One of the key methods of achieving this involves reducing administrative burdens for small enterprises to make it easier to process waste, simplifying measures to regulate processes so that small scale processes can function more efficiently. Additionally, the revised EU Waste Legislation (2018) sets targets to recycle 50% of all plastic packaging by 2025. All directly applicable EU legislation is set to be automatically adopted into UK legislation following the UK's impending exit from the European Union, in accordance with the Repeal Bill, and therefore remains relevant to UK businesses[5].

Lancaster City Council have also unanimously voted to introduce a new Plastic Policy, committing £30,000 towards ideas which can reduce plastic bottle and cup use. These ideas include specific bins for bottles, bottle refilling stations, using vegware at council-run outlets and working with stakeholders to gain an insight into their ideas on plastic reduction. This audit aims to do the same. There is, however, as yet no statement into methods of reducing other kinds of plastic. This project focusses on all plastic use.

## Importance of businesses in sustainability

Businesses play a key role in reducing global environmental impact, from the fossil fuel industry to local market traders. Many consumers are expressing that there are insufficient options available to them in order to consume sustainably. An EU-wide study found that 95% of consumers believe that taking action to address single-use plastic marine litter is both 'necessary and urgent'. Businesses are following suit, with 80% of brands sharing this opinion[6]. It is therefore a matter of business interest as well as environmental interest to consider reducing single-use plastics on a commercial level.

It has been demonstrated that supply-demand relationships are not unilateral. Businesses can influence demand, and consumers can play a role in influencing supply. Businesses can therefore play a role in influencing, as well as responding to, changing consumer mentalities to improve sustainability. This was demonstrated with a marketing strategy at Booths recommended by Mike Berners-Lee, whereby more sustainable products, such as seasonal fruits and vegetables, were promoted and displayed more attractively than their less sustainable counterparts. This indirectly influenced customer's spending habits and led to more sustainable consumption both by customers and the supermarket. Market traders, although on a smaller scale, can also have a role in influencing the spending habits of customers.

86% of all marine litter can be placed into the following 10 categories, many of which are used by market traders on a daily basis (highlighted in red, Fig. 2)[7]:

[5] Legislating for the United Kingdom's withdrawal from the European Union
[6] UK 'Tackling Plastic Waste' Research
[7] Directive of the European Parliament and of the council on the reduction of the impact of certain plastic products on the environment

Figure 2: Top 10 most common plastics found on beaches. Plastics highlighted in red are commonly used in Lancaster markets

## Importance of food in sustainability

Along with plastics, the food we eat has a tremendous impact on our carbon footprint, as well as the ethics of our consumption. The amount of meat we eat, the way our food is produced, where our food comes from, all has an environmental impact. Drawdown, a collective rating of environmental solutions produced by over 100 researchers, found that 4 of the 10 most effective methods to combat climate change are centred around food choices[8].

Food sellers at Lancaster's markets can play a part in this by changing the way they source their food, promoting more sustainable options and informing customers on the history of their food. According to current trends, environmental food production is becoming an increasingly important consideration for UK consumers, with the number of vegans doubling over the past two years[9] and with over 25% of family evening meals being meat-free in a 2018 study[10].

## Purpose of audit

This audit primarily seeks to look into different ways that Lancaster's market traders can reduce their use of single-use plastics so that they can be in accordance with Lancaster City Council's new plastic policy without negatively impacting their business. LESS Lancaster has therefore commissioned this audit in order to find the best ways to support traders in this transition.

The audit also seeks to look into other methods to reduce traders' environmental impacts. This includes food miles (the distance food must travel before reaching location of sale), transport methods, food waste and environmental footprint. This feeds into Sustainable Food City (SFC)'s

[8] Drawdown (2018): The most comprehensive plan ever proposed to reverse global warming
[9] Food & You (2018): Ipsos Mori on behalf of The Vegan Society
[10] Kantar World Panel (2018) Why 2018 is the year Brits went Vegan

wider aims of reducing the environmental impact of Lancaster whilst building the local food economy.

## Research Methods

This survey was carried out through interviewing market traders at the Midsummer Market, Charter Market and Harvest Market. With the exception of the Harvest Market (which was a written survey), all data was collected orally and face-to-face in order to get the best possible insight of market traders' thoughts on sustainable trading. The same questions were asked to each trader, however interviews were only semi-structured in order to not miss any inputs not covered by the questions. Questions covered topics such as customer mentalities, plastics used and the reasoning behind the decision to use this plastic, availability of plastic alternatives, food sourcing and food waste. All traders interviewed gave consent to be interviewed and for this information to be used in the audit only.

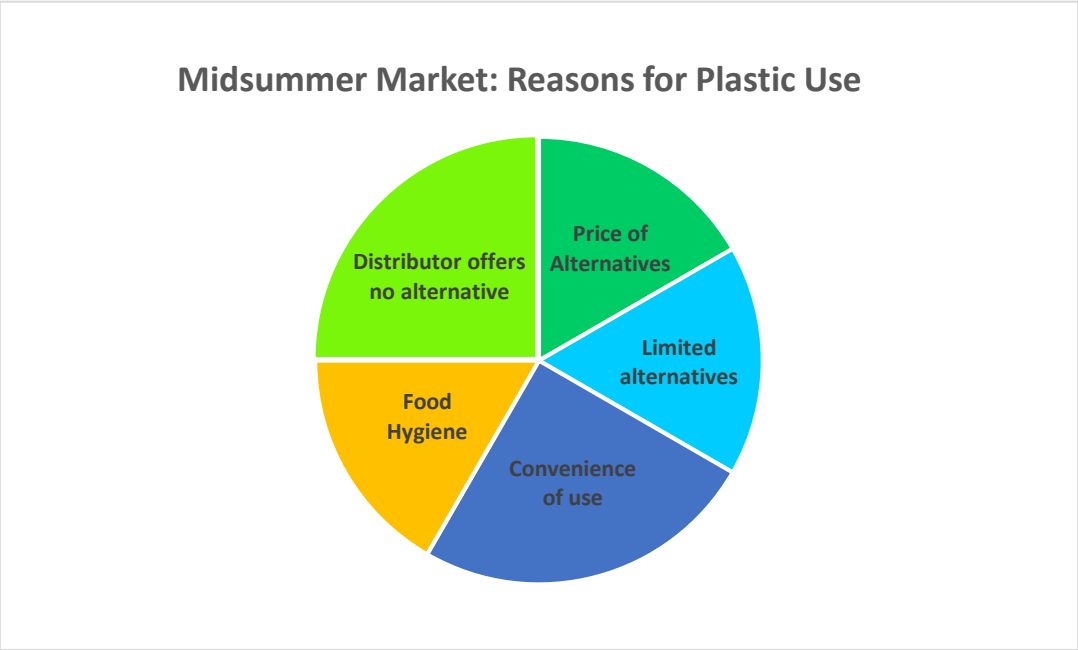
Plastic use was measured in units as opposed to mass in order to make quantities easier to visualise and quantify. Food miles was defined as the distance from food producer to market trader as the crow flies, as this was easier for traders to accurately pinpoint. Food sourcing was rated in line with Lancaster's 'Resilient Food' framework.

## Findings: Single-Use Plastics

### Midsummer Market

Every trader interviewed expressed a concern for plastics use, and several noted that they had noticed an increase in consumer awareness over recent years. One street food seller noted that the number of vegan meals sold has doubled over the past two years. The Midsummer Market used significantly less plastic on average than the Charter Market, with 70% of traders using less than 24 single use plastic items per month. Plastic cutlery was the main contributor to single use plastics here, however only 2/10 sellers used them – significantly increasing the overall market-wide plastic consumption. Following this, plastic film was the second biggest contributor, however again this contributed from only 2/10 traders.

Many traders had already made steps to reduce their plastic use, switching to biodegradable plastic or cardboard alternatives. Although there was no defining reason for using plastics, the overall consensus from traders was that a great deal of the factors behind sustainable switches were out of their hands, with many citing their distributors' packaging, food hygiene and availability of alternatives as their main obstacle to transitioning to a plastic-free way of living. Perhaps surprisingly, price was not a key factor for many traders, and most were prepared to pay more for alternatives that were readily available and convenient for use. Some traders did raise concerns about passing on cost to customers.



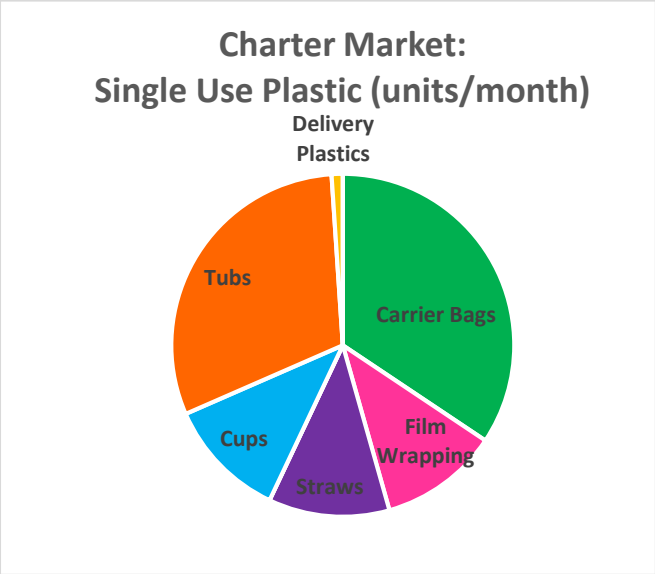

## Charter Market

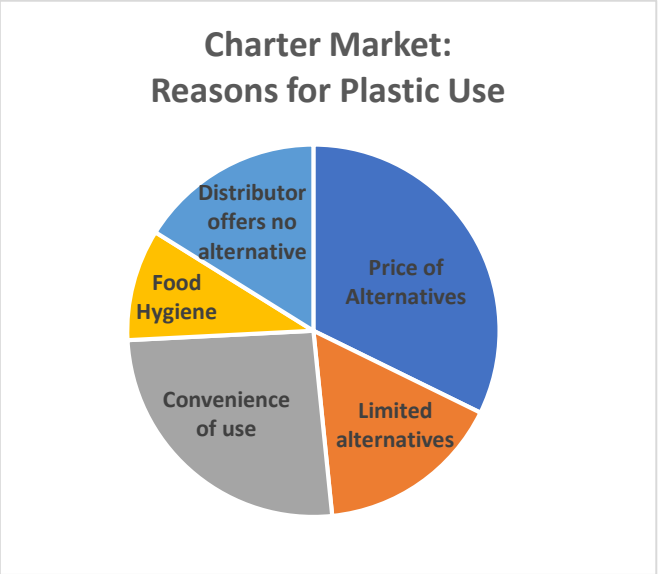
The Charter Market overall expressed an interest in reducing plastics, but to a slightly lesser extent. As with the Midsummer Market, many mentioned noticeable increases in sustainable consumer behaviour, with fewer asking for a bag, more bringing their own takeaway containers and vegetarian/vegan options gaining popularity. This was reflected with traders making steps to reduce plastic use. These measures included: only giving carrier bags when prompted/only using plastic bags in rainy conditions, switching (in some cases) to biodegradable alternatives, and ensuring that all plastic used is recyclable.

A clear trend emerged throughout the market: carrier bags were a key problem for traders. The average charter market trader used over 200 carrier bags per month, despite the aforementioned measures to prevent this. This accounts for 34% of the market's single use plastics. It was also noticed that consumer mentalities are changing, with more bringing their own bags and refusing carrier bags particularly in the last 2-3 years, and therefore this figure would likely have been higher had this survey been undertaken in 2015.

Price was overall a much more important factor for Charter Market traders compared with Midsummer Market traders. Proportionately, twice as many charter traders cited price as a key factor in their plastic choices (28% compared to 14% of Midsummer Market traders). Practicality was also proportionately more important to Charter market traders (28% compared to 21%), Many had considered alternatives, including paper bags, charging for carrier bags and only using plastic bags in rainy weather, however price and practicality had often prevented these measures being implemented on a large scale. Many cited Lancaster's rainy weather and having

perishable/wet products as a reason to use plastic tubs or bags, and there was concern about increasing costs with such intense competition, particularly between food traders.




Despite similar trends and reasonings, the scale of plastic use vastly differed between markets. 7 of the 19 Charter Market stalls produced more plastic per month than all of the Midsummer Market stalls combined. The average Charter Market trader produced 9.9x more plastic than the average Midsummer trader, and in contrast to the Midsummer Market, plastic usage is more consistent amongst the Charter Market. There are many possible reasons to explain this. Firstly, many of the Charter Market traders operate more regularly than Midsummer Market traders (many of which did 2-3 markets per week or were not regular traders at all). Secondly, the customers at the Midsummer Market are typically more environmentally conscious and therefore traders adapt their practices to appeal to their customer base. Some Charter Market traders reported unsustainable behaviours including insisting on plastic tubs for finger food (which is typically just served with a napkin) or requesting a plastic bag for one small item. This was not mentioned at the Midsummer Market.

# Findings: Food Sourcing and Waste

## Methods

As the sustainability of food sourcing and waste is less easily to quantify, a scale has been developed in order to rate traders' food sustainability. This focusses on the sourcing of food and wastage, before giving an overall rating incorporating organic practices, availability of vegetarian and vegan foods and traders' knowledge of food sources. These were formed in line with, where possible, SFC's Resilient Food framework. The criteria for these scales are outlined below:

| **Food waste scale:** | |
|---|---|
| 1 | Large volume of food waste, disposed of (>10kg per day) |
| 2 | Moderate food waste, disposed of (<10kg per day) |
| 3 | Some food waste, donated/composted |
| 4 | Minimal food waste, repurposed |
| 5 | No food waste |

| Food sourcing: | |
|---|---|
| 1 | Air-freighted internationally |
| 2 | Shipped over 100 miles, not air-freighted |
| 3 | Shipped from national wholesaler <100 miles away |
| 4 | Shipped from site of production within 20 miles |
| 5 | Produced on-site |

| Overall rating: | |
|---|---|
| 1 | Air freighted items, large amounts of food waste<br>No consideration to seasonality, unsure of sourcing |
| 2 | Some food waste, sometimes repurposed<br>Food sourced internationally, often out-of-season |
| 3 | Some food waste, most of which donated/composted<br>Food sourced outside 20 miles, |
| 4 | 2 of 3 from (5)<br>Non-organic food used. Grown and sourced seasonally |
| 5 | Little-to-no waste donated or repurposed.<br>Food locally sourced using organic practices.<br>Vegetarian/vegan options available |

## Overall Trends

Food produced on-site (eg. family farms) were perhaps unsurprisingly the most sustainable. These products also tended to be compostable and as a result any waste could be repurposed. The most unsustainably sourced foods tended to be perishable items such as fruits or vegetables which required airfreighting when out of season in the UK.

| | Food waste | Food sourcing | Overall |
|---|---|---|---|
| **Average Midsummer** | 4.44 | 3.94 | 4.11 |
| **Average Charter** | 3.77 | 2.42 | 2.69 |
| **Average Overall** | 4.06 | 3.08 | 3.31 |

The Midsummer Market scored higher in all categories. The Charter Market had a fairly similar food waste rating, however significantly lower rating for food sourcing. This is primarily because their foods had a longer supply chain and therefore many traders were not aware of where their food was sourced from beyond their wholesaler.

Some traders were collaborating to source foods, sourcing raw materials from other traders at the market in order to produce their goods. This was encouraging to see, however if the supply chain beyond this is unclear there is no environmental benefit to these collaborations. Of course, there are still numerous social benefits which should not be ignored.

Almost all food traders offered vegetarian or vegan options and have noted that these have been well-received. For many, these options were only introduced recently as a response to changing consumer habits. Whether their food was organic was overall less of a concern, with some traders sceptical of the Soil Association's credibility and the environmental viability of

organic food. For many, it was a purely economic issue and, despite wanting to use organic produce, the increased price of organic foods was not considered viable for their business. Typically, the only traders who used organic foods either produced their goods themselves or had close ties with producers.

## Steps Forward

Although these results show a high volume of plastic use, there are some positives to take from this. First of all, there are only a few key factors which are preventing sustainable plastic use. This means that once these few factors are minimised, plastic use should decrease significantly.

The first of these is the price of plastic alternatives. The majority of traders had considered alternatives, yet one of the key obstacles for them was price. The cheapest prices found for alternatives to the most commonly used plastics are listed in the table* below:

| | | Price per unit (pence) | |
|---|---|---|---|
| Plastic Alternative | Manufacturer | >1000 units | Plastic Equivalent |
| Paper bag (no handle) | Big Brown Carrier Co | 0.975 | 0.625 |
| Paper bag (handle) | Nisbets | 4.156 | 0.625 |
| Compostable cup (pint) | CupsDirect | 6.89 | 3.3 |
| Compostable lid | Catering24 | 2.45 | 0.492 |
| Cardboard tub | CoBiz | 7.61 | 8.396 |
| Tin foil tub (+ cardboard lid) | MyPackaging | 3.298 | 8.396 |
| Wooden cutlery (fork) | Catering24 | 2.143 | 0.798 |
| Compostable cutlery (fork) | Catering24 | 2.186 | 0.798 |

*Prices in table are direct from company websites. Contacting the seller directly may result in better prices. Bulk discounts are offered, with free delivery typically for orders over £100. Plastic equivalent is the cheapest price found when purchased in bulk (>1000)

Although alternatives are generally more expensive than their plastic counterparts, in many cases the difference is lower than may be expected. Plastic tubs are cheaper than both cardboard and foil containers and therefore this is a fairly easy switch that some food vendors can take

Taking into account the mean plastic usage of all market traders, the average cost to switch to alternatives is shown in the table below:

| | Average quantity used | Price Difference | Cost p/m £ |
|---|---|---|---|
| Paper bag (no handle) | 203.17 | 0.35 | -£ 0.71 |
| Paper bag (handle) | 203.17 | 3.531 | -£ 7.17 |
| Plastic Cup | 67.24 | 3.59 | -£ 2.41 |
| Cardboard Tub | 179.65 | -0.786 | £ 1.41 |
| Foil Tub | 179.65 | -5.098 | £ 9.16 |
| Wooden Cutlery | 20.68 | 1.345 | -£ 0.28 |
| Compostable Cutlery | 20.68 | 1.388 | -£ 0.29 |

Although this is only an estimate of monthly price increase (and traders who are particularly reliant on certain products will have increased costs), it is demonstrated that costs are relatively small, with many switches costing less than £1 per month. Replacing plastic tubs with alternatives can also result in profiting with over £9 per month. The economic benefit of having a sustainable image may outweigh this cost for many traders, making these switches logical from an environmental as well as economic perspective.

The second of these is the availability of convenient plastic alternatives. For many traders, convenience was a key factor and they were keen to ensure that any plastic replacements did not compromise on practicality. For example, they were less enthusiastic in general about paper/cardboard replacements which were not waterproof. As Lancaster is frequently rainy, market traders did not wish to give out bags or containers which would potentially damage their products. For some, the range of plastic alternatives available was so limited that they would not have the desired aesthetic if they switched. One key example of this was having their products on view through any packaging. With a limited supply of compostable film, many traders did not want to compromise on their product advertising by switching to an opaque alternative such as paper.

This obstacle is less easy to overcome. Extensive research into alternatives has been carried out and this has been compiled into a resource is available for all traders. As awareness surrounding plastic use increases, more alternatives will almost certainly become available at lower prices. In the meantime, compromises can be made. For example, using a paper bag with film window to display products instead of an entirely film bag could greatly reduce plastic consumption (assuming that customers are aware of how to dispose of the product). Contacting packaging suppliers and letting them know about the products you wish to see on the market could speed up this transition period until a wider range of plastic alternatives is available.

The third is the lack of awareness of the history of food products. The majority of traders who used wholesalers were not aware of the sourcing of food prior to it arriving at the wholesaler. Contacting the wholesaler to request more information will increase this awareness whilst also notifying the wholesaler that product origins are a priority for clients. It will also empower traders to be transparent with customers, allowing customers to have more trust in traders and make informed purchasing decisions.

Although consumer mentalities are changing towards a more sustainable outlook, there are steps that traders can take to improve this mentality. Although nudge tactics can't save the world, they can be highly effective in small scale scenarios such as these. Placing a friendly sign reminding people to bring their own bag or only offering plastic containers upon request can be a highly effective means to reduce overall plastic consumption. Letting customers know that products are recyclable and encouraging them to recycle their goods is key to this. This also promotes the sustainable nature of the business, potentially drawing in more environmentally conscious consumer groups.

Consumer incentive schemes, where customers are rewarded for reducing their single-use plastic consumption, have been shown to be highly effective elsewhere. Deposit schemes, where customers pay a slightly higher initial price which is then refunded when the plastic is returned, have been highly successful across the globe. Following implementation of a plastic bottle return scheme in 2003, Germany now successfully recycles/reuses 98.5% of its

refillable bottles[11]. The logic is simple: giving plastic a monetary value makes people less likely to throw it away or waste it. Ways that this could be implemented at the market include:

- Loyalty schemes: when a certain number of reusable containers are returned, the customer receives a free drink/meal
- Discount schemes: 10p/20p discount on meals/drinks when own containers are brought.
- Signage advertising possibility to bring own container for refilling
- Selling own reusable containers eg. coffee cups, which can be refilled for a discounted price.
- Charging customers 5p per single-use plastic bag, whilst offering a reusable alternative for £2-3.

Support from Lancaster City Council and market management would help these schemes to thrive. Offering financial benefits/reduced leases to traders enrolled on deposit/discount schemes would help to reduce financial risk on individual traders, whilst making a coherent message for customers. These schemes also have the potential to increase brand visibility, if bags/refillable containers advertise the brand's logo. As many items are bought and consumed in the City Centre and therefore increasing the availability of recycling bins for customers to dispose of plastic and paper waste could avoid unnecessary processing of products to landfill. Improving public awareness surrounding what can and cannot be recycled in Lancaster could also improve recycling rates of market waste.

## Opportunity for collaboration

Market-Wide Recycling Scheme

One possible option for traders (particularly those who are regularly selling in Lancaster) is the introduction of a recycling collaboration. This would primarily involve a deposit scheme whereby customers receive a free product upon returning enough containers to market stalls. All traders enrolled in the scheme would accept containers from any of the participating stalls and stamp a loyalty card. Customers could additionally gain stamps through bringing their own container to be filled. Once a customer has gained enough stamps, they have the option to swap their card for a free meal/drink at any of the stalls enrolled on the scheme. This scheme would benefit traders, customers and sustainability through:

- Providing additional incentive for customers to purchase food at market stalls rather than fast-food outlets
- Encourage customers to return containers rather than disposing of them in litter bins. Traders would then be able to reuse containers or dispose of them correctly
- Saving money through reusing containers, reducing packaging costs.

This scheme could also simply involve traders agreeing to recycle others' waste, allowing customers to hand back waste to any stall. This would ensure that waste is correctly disposed of.

[11] The Guardian (2018): Has Germany hit the jackpot of recycling? The jury's still out.

Shared storage areas for bulk purchasing

Switching to plastic alternatives is only viable when these are purchased in bulk, however many of Lancaster's traders have limited storage space. When asked, many noted that they worked using only a van or their home as storage space. As a result, purchasing thousands of containers would not be possible, nor would it be practical considering many traders would take months to go through such quantities. As a result, a shared storage space would make this possible, allowing traders to make group orders and reduce individual unit cost. Lancaster City Council has access to empty spaces which could repurposed for storage. In doing so, the financial burden of switching to plastic alternatives could be greatly reduced.

Improving food waste networks to make the most of food waste

Lancaster has been recognised as a Bronze Sustainable Food City and has a great deal of networks and infrastructure in place to reduce food waste. This includes gleaning programmes, Lancaster's Food Club, Lancaster People's Café, Claver Hill food project and Single Step store. Market collaboration with these existing projects could make efforts to reduce waste far more effective.

Currently, many traders are composting food waste, sharing with friends or donating to the homeless in Lancaster. Some are throwing away unsold food. Collaborating with Lancaster's Food Club would help to channel waste and ensure that it is put to the best possible use. The Food Club also aims to educate members about sustainable purchasing and cooking styles; many food vendors could share their expertise here.

Skills sharing

The Midsummer Market scored consistently higher than the Charter Market in every category. From this finding, there is significant opportunity to share skills and experiences to allow the Charter Market to operate more sustainably. Although there are clear differences between the two markets in terms of customer base and scale, many of the lessons are transferrable and may provide 'quick wins' for traders who are scored less highly. There is the potential for LESS Lancaster to host workshops to facilitate these collaborations.

# Conclusions

This audit has found many key trends throughout Lancaster's markets. It is likely that similar trends are observed in comparable cities and therefore the lessons gained from this audit can be applied to a wider range of scenarios.

Overall, the key reasons for plastic use relate to the need to keep products as convenient and reasonably priced as possible. In a competitive environment, this is non-negotiable for many traders. Any plastic alternatives will therefore need to have minimal cost and function as well as any plastic product. Although this provides challenges, it is possible to introduce collaboration schemes, nudge tactics and bulk purchase alternatives in order to have significant changes.

The sustainability of food sourcing and usage varied greatly across markets, though it was found that with increased knowledge of sourcing (usually through having a shorter supply chain), more sustainable decision making can take place. Utilising Lancaster's existing networks can provide channels to make the most of food which would otherwise go to waste.