TUCO

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TUCO's Tackling Food Waste

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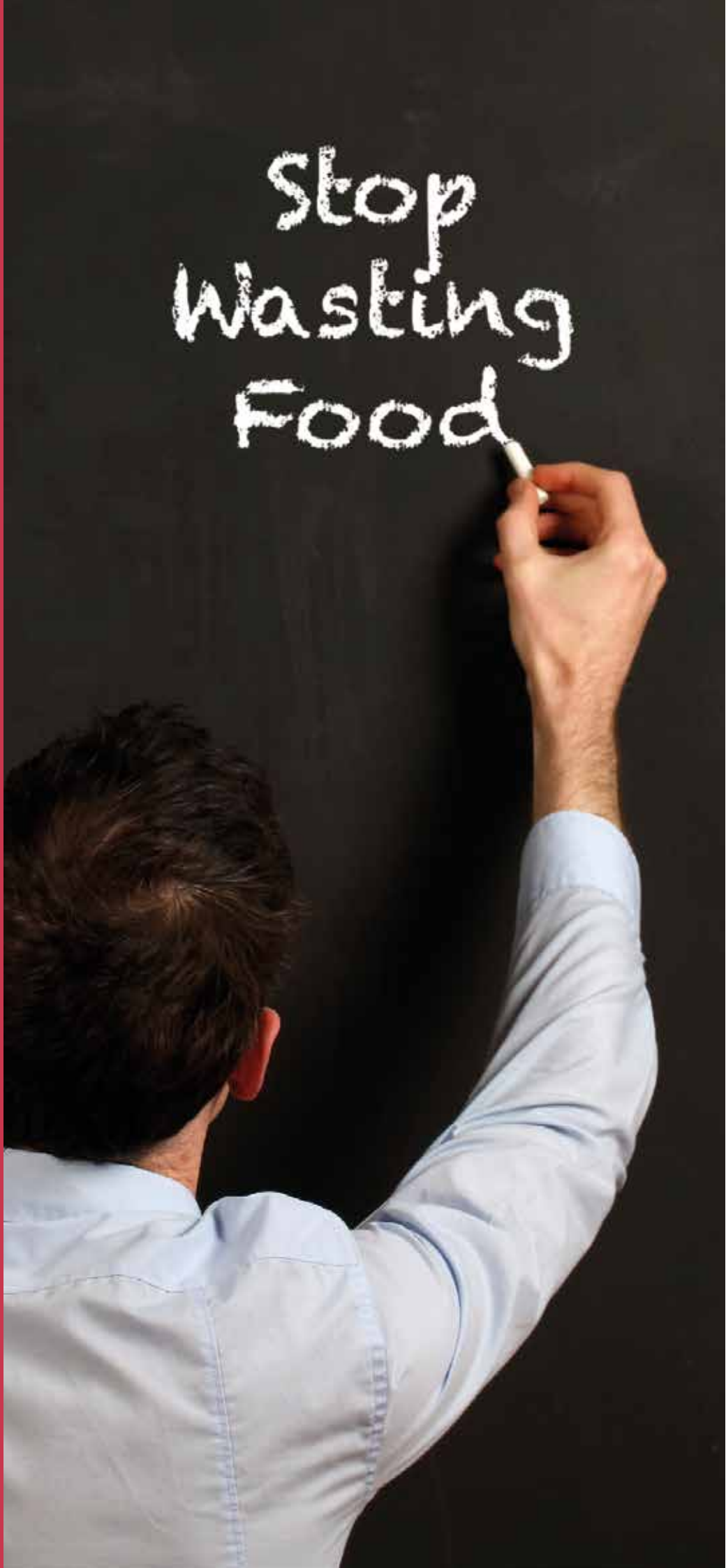

Foreword from TUCO

We face real environmental challenges ahead, not just as an industry but as a global population. The threat of climate change and the implications that directly affect us all – drought, crop shortages, rising food costs – are issues that we cannot ignore and all have a responsibility to address. The foodservice sector, in particular, must accept its historic impact and, most importantly, look forward together to find answers.

As an organisation, we have endeavoured to support our members to be at the very fore of sustainability best practice. From delivering exclusive learning opportunities for members, to expanding our annual conference with an increased focus on improving sustainability on campus, TUCO has implemented best practice initiatives that have led to genuine change within many member organisations.

This commitment to being part of the solution, for members and the Industry at large, has led to this important piece of research. Food waste is one of the biggest problems that the foodservice sector must tackle – we throw away 920,000 tonnes of food every year, of which 75% is avoidable; the numbers there speak for themselves.

A quote springs to mind: "If it can be thought, it can be done, all problems can be overcome." We couldn't agree more – no problem is ever insurmountable – and this white paper outlines five key challenges and simple solutions to tackling each. This comprehensive breakdown has been designed to act as a guide, with top tips and case studies to drive understanding and real-life change implementation.

We hope that you'll find this useful and would love to hear your feedback. If you have any questions or comments please do contact me directly on: mike.haslin@tuco.org

Mike Haslin, COO, TUCO

About TUCO:

The University Caterers Organisation (TUCO) is the leading membership organisation for in-house caterers operating in the Higher and Further Education Sectors, as well as throughout the Public Sector. TUCO is committed to advancing the learning and development of catering teams and continuously works to provide quality standards, advice and information for its members.

With innovation at its heart, TUCO is leading the Sector with its pioneering initiatives that are individually designed to champion the high standards of talent within the Sector and provide its members with a variety of opportunities to develop their operations and enhance the service they provide. From launching a ground-breaking training Academy, to running global study tours and conducting agenda-setting research, TUCO is addressing the issues and challenges which affect the Industry on a daily basis.

About Footprint Intelligence:

Market research exists to guide brands through insight on competitors, markets, products and consumer perceptions of them, the effectiveness of marketing, customers, trends and opportunities.

With the ever-moving and shifting sustainability debate, accurate intelligence, enabling businesses to make informed decisions is vital. Footprint Intelligence is Footprint Media Group's research and analysis division helping companies develop successful strategies in the context of responsible business practice.

About the authors:

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Executive Summary

Setting the scene

Waste has emerged as one of the defining sustainability issues of our modern food system. Up to half the food produced globally is never consumed and in the UK 12m tonnes of food is thrown away annually, most of which is avoidable.

Foodservice and hospitality companies throw away 920,000 tonnes of food waste every year, about 13% of which is generated in the education sector.

Although there is clear agreement among governments, businesses and civil society groups that something needs to be done to cut food waste, there is little consensus on the most effective way to achieve this. Some countries, such as France and Scotland, have pursued regulatory approaches. Others, such as England, have favoured voluntary agreements.

The aim of this report is to reveal the attitudes towards food waste in one particular sector of the foodservice and hospitality market – universities – and to underline some of the challenges facing universities looking to reduce food waste and highlight innovative solutions to these challenges.

Research

The report's findings are based on research carried out exclusively for this report consisting of interviews and focus groups with people – including managers and chefs – working within university catering as well as experts in the field of food waste. The findings are further informed by a survey of TUCO members aimed at understanding attitudes towards food waste along with a poll of university undergraduates.

Findings and recommendations

Food waste ranks as a sustainability issue of high importance among universities and their catering departments and holds its own alongside competing priorities such as energy efficiency and food provenance.

Environmental considerations and regulatory requirements provide the strongest incentive to take action on food waste – more so than cost, demand from customers and voluntary agreements.

The research highlighted five main challenges universities face when attempting to cut food waste. These can be summarised as:

- Front of house and student engagement – overwhelmingly the greatest challenge is in encouraging students to change their behaviour.
- The cost of taking action – financing infrastructure or student engagement campaigns can be prohibitively expensive for universities on tight budgets.
- Data collection and analysis – capturing data on waste is challenging and is often dismissed as too time-consuming or complex.
- Operations and logistics – the diversity of university operations can create logistical barriers to waste reduction initiatives.
- The legislative landscape – there is conjecture about whether regulations or voluntary agreements are most effective at reducing waste and both have their own challenges.

In many cases, universities are overcoming these challenges by implementing their own innovative food waste reduction initiatives. These solutions can be summarised in the form of five takeaway tips:

- COMMUNICATE with the customer about food waste: talk to them, incentivise them and shock them if need be. Be flexible on price and empower staff to vary portion sizes on request.
- MINIMISE the costs of waste to your organisation: map your costs, target the low-hanging fruit and don't let upfront costs obscure longer-term savings.
- ANALYSE where your waste is coming from, using technology where appropriate, and use this data to target your waste hotspots.
- INSPIRE staff to buy in to waste reduction initiatives, introducing a competitive element where appropriate, and engage your waste contractor at an early stage.
- PRESS the government for regulation to create a level playing field, and in the meantime sign up to voluntary agreements such as WRAP's Courtauld 2025. Collaborate with local partners to redistribute surplus food.

The findings in pictures

1 Front of house:

48% don't clear plate

56% portions too big

88% student engagement is hard

"Students moan, moan, moan about our canteen prices being high but pay premium prices for Starbucks coffee"

Shock: Bring bins to front of house

Incentivise: Money off for wasting less

2 Cost:

3% is disposal

97% is labour, energy, procurement

£7.50/kg cost to recycle food waste

£8.50/kg cost to landfill food waste

"Every idea we've thought of to do things differently costs money"

an opportunity to save money and waste less?

3 Data:

51% measure all food waste

49% don't

83% predicting demand is a headache

Why take action?

- Regulation
- Environmental considerations
- Cost

"You don't need high tech; you can just have a bucket and a set of scales"

"We've stopped putting garnish on burgers in our pub and replaced it with coleslaw, which people usually eat"

Best practice:

4,620kg food waste reduced to...

3,999kg

4 Operations and logistics:

56% unhappy with the way food waste is collected

95% of staff do engage

"If we hadn't wasted those 10 burgers you'd have had an extra pair of hands for two hours today"

Engage:

Compete: measure food waste and feedback

5 Legislation:

74% want regulation

8% don't want regulation

"Voluntary agreements are ridiculous"

95% sharing best practice will help

Redistribution - many fear safety issues

"Foodservice is behind grocery and has to catch up"

Chapter 1:

Setting the scene

The issue of food waste needs no introduction. The environmental, social and economic costs have been well documented, but in summary we know that:

- Globally, between 30% and 50% of food produced never reaches a human stomach [1].
- In the UK, food waste from households, food manufacture, retail, wholesale, hospitality and foodservice totals 12m tonnes.
- Foodservice and hospitality companies throw away 920,000 tonnes of food waste every year, 75% of which is avoidable.
- In education, encompassing nurseries, schools, colleges and universities, 123,000 tonnes of food waste is created annually.

That we have a problem is not up for debate. What to do about it is far less clear-cut, not least in England where a lack of clear legislation is leaving caterers behind their Scottish and Welsh counterparts.

In Scotland, for example, businesses producing more than 5kg of food waste a week are required to separate it for collection.

Food waste in educational catering:

Source: WRAP (10)

Scotland has just announced a food waste reduction target of 33% by 2025 – the first to do so in Europe [2].

Indeed, Europe (Brexit aside) offered a glimmer of hope via the circular economy package. And yet a food waste reduction target of 30% by 2025 was binned in the "more ambitious" version published in December [3].

Westminster has long been resistant to targets, while DEFRA has in recent years been "stepping away" from waste policy [4]. Proposals in a new food waste bill could change that, with plans to force supermarkets, manufacturers and distributors to cut food waste by 30% by 2025 and redistribute more of it [5].

The new policy, supported by more than 100 MPs, follows similar moves in France [6] and Italy [7], with the former having forced supermarkets to redistribute food.

What isn't clear from the draft bill in England is whether caterers will be included. The results of our survey in higher education suggest they should be, with voluntary agreements not working and deemed by some as "ridiculous".

That WRAP has just launched a new voluntary scheme makes this report even more timely. Courtauld 2025 is a "super-agreement" replacing both the Courtauld Commitment (for grocers and manufacturers) and the Hospitality and Food Service Agreement (HaFSA), uptake for which has been mixed.

Could this carrot be an opportunity for university caterers, or is it time for the stick? Those we spoke to understand the cost of throwing away perfectly good food (£2,100 a tonne, according to WRAP), but their desire to take action stems more from environmental concerns.

Food waste is a sustainability priority – scoring 4.37 on a scale of one to five among the catering managers we surveyed. However, as we will discuss, few even know exactly how much waste they create, and even fewer what's in it and what happens to it once it leaves the site. This comment from a business services manager highlights where many are:

> *"Every caterer is conscious of food waste as it's wasted profit. We don't know the amount of food waste that is going into general waste as opposed to the food waste bin, and we're not doing very much about that at all."*

Chapter 2:

Top five challenges and solutions

Food for thought

We've seen in chapter 1 that food waste has significant ramifications for caterers in a number of areas – economic, environmental and legal to name just a few – but how important is it for universities and how does it compare with other priorities in environmental management?

Data from a TUCO survey of university catering managers carried out exclusively for this report shows that food waste ranks as an issue of major importance with well over half of respondents considering it a high or very high sustainability priority.

There is a discrepancy, however, between the importance the institution as a whole attributes to food waste and catering departments specifically, which on average see food waste as a higher priority than university management.

Partly, this highlights the range of competing sustainability priorities that universities must juggle, with interviewees pointing to energy efficiency, carbon footprint and food provenance as areas that can divert management attention away from food waste. For catering departments whose job is to manage the supply of food on a day-to-day basis, waste understandably ranks higher on their agenda.

Perhaps surprisingly for such a cost-driven sector, cost ranks below regulations and environmental considerations among the priorities of respondents.

Our survey data makes clear that food waste is high on the agenda of both universities and their catering departments, but how can they translate this awareness into effective action and what are the barriers to doing so?

In the following chapter we discuss five principal issues that are highlighted as challenges by respondents when dealing with food waste:

- Front of house and student engagement.
- The cost of taking action.
- Data collection and analysis.
- Operations and logistics.
- The legislative landscape.

For each, we consider potential solutions including innovative initiatives that TUCO members are using to reduce waste both front and back of house.

TUCO Food Waste Survey

On a scale of 1 to 5, with 1 being very low and 5 being very high, how does food waste rank as a sustainability priority within the university?

Rating Average **3.86**

On a scale of 1 to 5, with 1 being very low and 5 being very high, how does food waste rank as a sustainability priority within the catering department?

Rating Average **4.37**

2a: Front of house: the biggest obstacle

Challenges

Responses from our survey show that, overwhelmingly, the greatest challenge for universities comes at the post-production stage of the supply chain. Most catering managers agree that encouraging students to change their behaviour is key to minimising plate waste but there are significant logistical and psychological hurdles to overcome.

While it's likely that a minority of environmentally aware students will care about the food they waste, 88% of survey respondents say that student engagement remains a major challenge.

Partly, this is a problem of circumstance. In residential halls, in particular, students are generally only in situ for one academic year, which makes it difficult to embed positive behaviours such as, for example, taking only what they will eat and not contaminating food waste bins with non-organic waste.

Student expectations are another common challenge. Especially where meals are prepaid, an attitude can sometimes prevail that it doesn't matter how much is wasted because the more the student takes the greater their value for money. One contributor describes a scenario where people "go mad" when they first encounter an all-inclusive food offer, while several others refer to an "I've paid for it so I'm entitled to it" attitude among some students.

One-off initiatives encouraging students to reduce plate waste can drive behaviour change for a couple of weeks, but are unlikely to result in long-term change without any follow-through.

Other challenges are of a more operational nature. Many universities report that they are required to offer a range of meal options throughout an entire service, heightening the risk of leftover food at the end. One interviewee says:

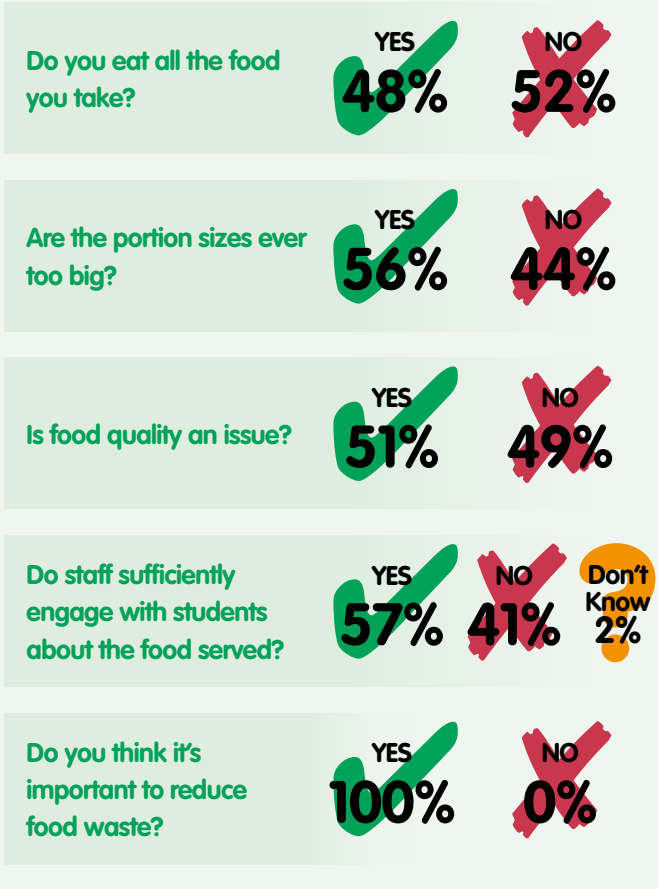
> *"We give the last person through the door the same as the first person, so you'll always get some of this unavoidable waste."*

Many say students will often complain if their favourite dish isn't available or, worse still for the university, go off site to a sandwich shop or fast food chain.

While most catering outlets make an effort to reuse leftover food in dishes the following day (chefs are imaginative and some are revelling in the leftover challenge from a day's waste), many only operate during the week, meaning that any food left over on Friday is likely to go to waste.

A lack of staff training in good waste management practice is another common barrier to minimising post-production waste. Rather than having systems to regulate the size of servings, staff members will often judge portion size according to their own perception of what an individual student will want, dependent, for example, on their gender or bodyweight. Where students are employed in catering outlets on a part-time basis there can also

Student survey: based on a survey of 118 undergraduates across three universities.



be an inclination to "feed up" their fellow students.

Some interviewees report that kitchen and serving staff can be resistant to carrying out food waste reduction initiatives where there is a perception that it is going to make their job harder or increase the likelihood of them getting negative feedback from students.

For others, it is simply that chefs are too busy to concern themselves with food waste or, for some long-serving chefs who have grown up under a different set of cultural norms, there is a lack of understanding that food waste should go in a separate bin and that leftovers should be reused.

88% Is food quality an issue?

"Students moan, moan, moan about our canteen prices being high but pay premium prices for Starbucks coffee" – executive chef

Solutions

Keeping students happy is far from easy. They are looking for high-street quality and variety, at low cost with a hotel-level service on top. If not, they'll go to a branded outlet on site or in town. The campus caterers understand this and have to ensure their pricing is competitive. This is squeezing their margins in more ways than one.

Students are always keen on a deal, and it makes sense for catering operations to price meals accordingly. But this has created a problem, summed up neatly by this anecdote from one university.

> *"We used to charge £4.50 for a roast dinner. Now we charge only £2.50 for a main course then students can add sides on top. They can have all sides for £2. But we don't communicate individual prices of sides like rice for 70p versus £2 for all sides. If we spelled out that only one side costs less, this would impact on our business. We wouldn't last. We make our money on the sides, not the main courses."*

So what can catering firms do?

1. Talk more and waste less

Communication is key: "ask customers whether they want more rather than presuming they do" is the message coming through. Serving staff should not presume what sized portion a student might want based on their appearance. The chances are their preconceptions will not reflect the reality of individual student demand. As one university caterer highlights:

> *"Nurses eat the most unhealthily. We made jacket potato cheaper than chips, but nurses still ate the chips."*

If you're communicating to students about what they self-serve or ask for on their plates, make the messaging quirky and polite. This isn't about you telling them to eat less; rather it's about asking them to waste less.

2. Shock them

Caterers are looking at how best to communicate the food waste being created front of house, not least because many prefer to scrape the plates back of house. In one focus group, just talking about why the bins were not front of house prompted the executive chef to suggest:

> *"Perhaps students would feel badly about the food they wasted if they were scraping it into the bins themselves."*

Students, like most citizens, invariably want to do the right thing, and bad habits are often the result of a lack of awareness rather than a lack of responsibility. Much of the evidence suggests that if people see what's being wasted, they take action. This is taking place back of house, with clear bags and bins (see chapter 2d) changing behaviour, but out front students need to have their eyes opened (see "Shocking students").

3. Save them

WRAP has long used price as a shock to induce business engagement on food waste. It could work for students on a tight budget too. Setting targets on front-of-house food waste reductions will save money, some of which could be translated into student discounts. Done well, it could be a "fantastic news story" for universities, notes one consultant.

The role of student unions should not be overlooked, either: freshers are often away from home for the first time, so the union and catering operators should engage them on cooking, nutrition and waste. Many told of the huge amounts of rotting food in halls of residence. On large campuses, in particular, there are opportunities to introduce food-sharing apps such as Olio, which is being used in London [8].

4. Caterers – help yourselves

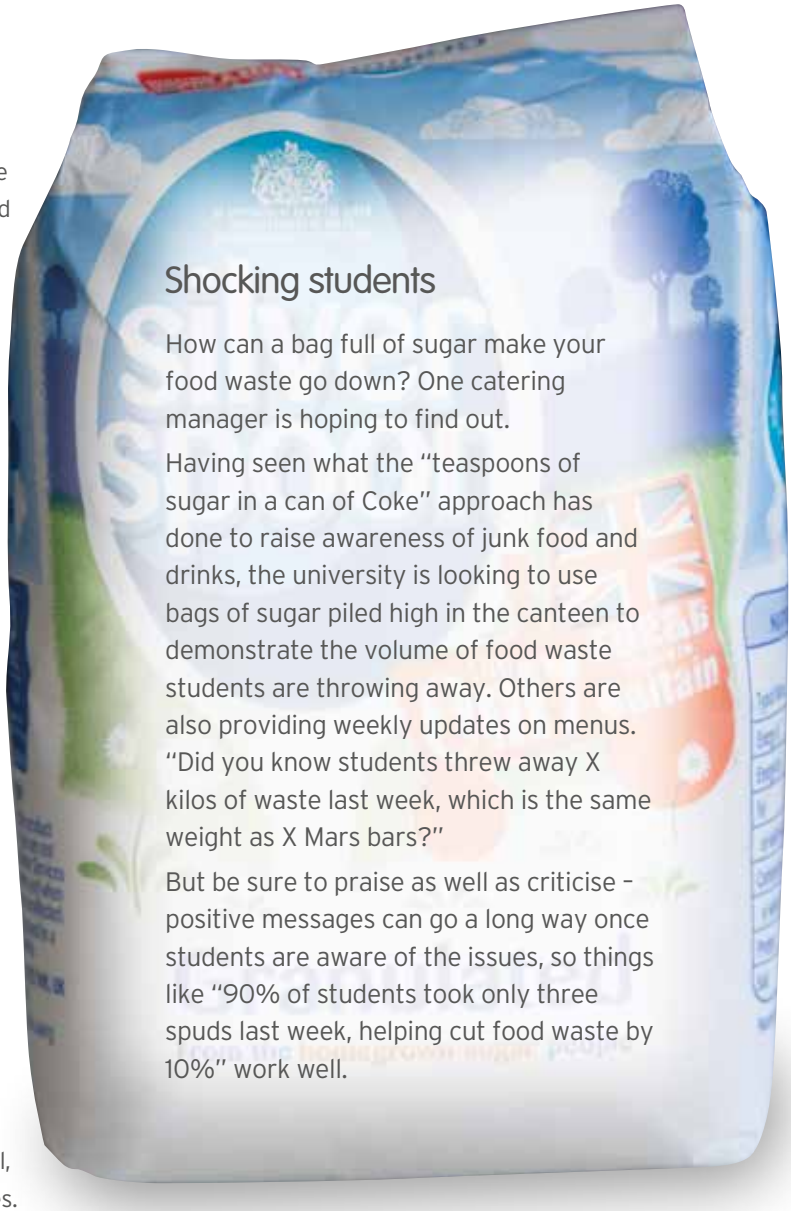
The catering operations manager at one university isn't alone when he admits:

> *"We're not as clear as we could be when it comes to explaining to students that they can choose a smaller portion size [and save money]."*

Those that have pushed hard to let students know that they can, for example, come back for more are seeing the benefits. On one site, food waste has been cut from 25-30kg per night to 10-15kg [9]. Drive home the point that if the early students don't pile their plates high and throw half away, there will be more choice for those coming later.

Rather than fall into the "we'll offer anything any time" model, a "when it's gone it's gone" approach is working in some cases. One food manager running a variety of student union outlets explains:

> *"This is not how I would have done it as a regional manager in a restaurant chain, so it goes against the grain a bit. But I've never had any complaints."*



Shocking students

How can a bag full of sugar make your food waste go down? One catering manager is hoping to find out.

Having seen what the "teaspoons of sugar in a can of Coke" approach has done to raise awareness of junk food and drinks, the university is looking to use bags of sugar piled high in the canteen to demonstrate the volume of food waste students are throwing away. Others are also providing weekly updates on menus. "Did you know students threw away X kilos of waste last week, which is the same weight as X Mars bars?"

But be sure to praise as well as criticise – positive messages can go a long way once students are aware of the issues, so things like "90% of students took only three spuds last week, helping cut food waste by 10%" work well.

Takeaway tip

COMMUNICATE with the customer about food waste: talk to them, incentivise them and shock them if need be. Be flexible on price and empower staff to vary portion sizes on request.

2b: Cost: investing in change

Challenges

Whether it's employing more staff in service areas, preparing campaign materials or investing in a new composter, managing the cost of waste reduction initiatives is one of the greatest challenges facing catering and facilities managers. One participant neatly captures the predicament facing many universities:

> *"Every idea we've thought of to do things differently costs money."*

Often the good intentions of university management clash with the reality facing staff on the ground, who complain that their bosses do not understand that there is a cost implication to food waste, despite their efforts to highlight this.

There is a general appreciation that managing food waste more effectively can save money – both in cutting the cost of buying food and the cost of disposing of it – but the barriers to realising these savings can be significant.

One head of commercial services notes that the university has looked into sourcing more "wonky" fruit and veg to drive down the cost of goods and reduce on-farm waste but to date with little success.

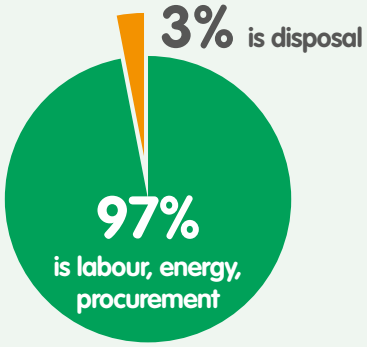
Some cost-saving initiatives are ruled out due to a simple lack of time or human resources. A number of contributors say they would like to buy in unprepared vegetables, for instance, due to the cost saving but do not have the staff to peel and prepare the produce.

Other waste management initiatives can be scuppered by the cost of investing in kitchen or other equipment. Several universities, for example, cite a lack of freezer space as a barrier to storing and reusing portions of food.

A number of respondents expressed an interest in investing in their own composter to remove the cost of paying a contractor to dispose of food waste, but for many the upfront cost has proved prohibitive.

One participant highlights an additional issue, in that as well as the upfront cost of the equipment his university would require a waste carrier licence to move the composter between sites as well as staff to manage it.

The cost of food waste:



Other universities express frustration with the ongoing cost of maintaining expensive waste management equipment. One catering operations manager comments:

> *"We installed a de-waterer several years ago but had problems with it on an almost daily basis."*

Another interviewee says that a recently broken composter, which lasted just six years, will not be replaced.

A number of participants feel that incentives for sending food waste for anaerobic digestion (AD) could be stronger. Many report a negligible difference in the prices per kilo charged by carriers to dispose of food waste and general waste (one respondent gave figures of £7.50 for food waste and £8.50 for general waste), as well as a lack of information from contractors on what payments cover.

One catering operations manager who pays the same price per kilo for food waste as general waste states that there is no incentive at all to separate the two waste streams and he only continues to do so because he views it as the right thing to do.

Per kilo charge for food waste disposal:

Separate collection for compost/AD

General Waste

Solutions

The cost of food waste per tonne in the education sector is £2,100 [10]. That's much lower than in hotels (£4,000), restaurants and quick-service outlets (both £3,500), but should be viewed in the context of the wafer-thin margins on which the catering operations at universities – and schools – are working.

There are easy ways to minimise costs.

The first is to have the food waste collected separately. There is some debate as to whether this is, in fact, cheaper than putting it all in the general waste.

The price a contractor will offer depends on the amount (more waste provides economies of scale) as well as the quality. Contamination of food waste streams can be as high as 20% to 30%, with forks, plates and plastic all ending up in the bins.

Training should eliminate contamination quite quickly, says one consultant, but it needs to be repeated, both to keep staff engaged and account for turnover of staff:

> *"If there are changes to how waste is separated [for example a food waste bin] then you must have clear signage, posters in kitchens and waste areas and a number to call if there are any issues."*

For universities in need of help there are plenty of materials available free from WRAP. If this contamination can be minimised, collection costs should fall accordingly.

Collectors and processors of food waste have a responsibility too. Our research suggests that only 60% of university catering managers are happy with the way food waste is collected and disposed of. Many raise concerns such as poor communication on prices, waste processing and best practice.

For those that opt for separate food collections, it can be a real eye-opener. Some consultants suggest the biggest barrier to change remains a lack of awareness of the financial savings from managing food and menus more efficiently to help cut waste.

There are big figures floated around, but until an outlet understands how much they are wasting the figures lack context. This is why measurement (see chapter 2c) is so important.

What follows an initial waste analysis is action. This can range from low-cost campaigns and training to significant investment in on-site waste processing.

However, there is a tendency for immediate upfront costs to obscure the potential longer-term savings. For example, when you factor in the cost of labour, water and energy used in prepping raw fruit and vegetables, buying in pre-prepared produce can end up being more cost-effective. The point at which buying in pre-prepared fruit and vegetables becomes cost beneficial will depend on the volume of produce procured and the time spent in its preparation, but as a general rule for produce where much of its raw volume doesn't make it onto the final plate, as with a cauliflower for instance, buying a pre-prepared alternative is likely to be a more efficient option.

Some caterers, meanwhile, explain how they used to use cups for chips, but have reverted to tongs because the cup was an extra cost. It could be a false economy, as the site's operations manager explains:

> *"Just today I pulled somebody up for giving a student the equivalent of two portions of chips."*

Packaging can play an important role in portion control. One caterer has convinced a yoghurt supplier to introduce a smaller pot because they found too much was being wasted with the larger sizes. Lids on containers for pasta and salads have been introduced by another to prevent students "eating us out of house and home".

From our research, there are still plenty of opportunities to exploit this kind of low-hanging fruit. It requires little or no investment but caterers need to see how schemes have worked for others.

In the current climate, big investments on waste processing on site are unlikely. While there is merit in keeping waste on site to be used as a resource, those we have spoken to have had mixed results with composters and de-watering equipment.

Takeaway tip

MINIMISE the costs of food waste to your organisation: map your costs, target the low-hanging fruit and don't let upfront costs obscure longer-term savings.

Beauty in the beast

In 2012 supermarkets relaxed their cosmetic rules on fresh produce after a terrible harvest [11]. Four years on and wonky veg is front and centre of the food waste debate, thanks in part to Hugh Fearnley-Whittingstall's exposé at the end of 2015 [12].

In 2013, the Institution of Mechanical Engineers concluded [1]: "As much as 30 per cent of UK vegetable crops are not harvested due to them failing to meet exacting standards based on their physical appearance." The celebrity chef brought this issue into people's living rooms, showing the impact the standards have on farmers, who have to dump tonnes of perfectly decent produce. Tesco has since launched a new range of class-2 vegetables [13].

If only we could get our hands on some of it, say caterers. This head of commercial services encapsulates what others are telling us:

"We get pretty standard nice-looking veg and we'd like to support local suppliers if they were having trouble getting rid of their wonkier veg."

The added bonus is that it's class 2 and cheaper [16]. But access is extremely difficult, with farmers often having significant tonnages to offload in one go. That's where TUCO should step in, say respondents, coordinating distribution at a larger scale.

2c: Data: collection and management

Challenges

Data that shows where waste is being generated in the supply chain is an invaluable tool, but in the absence of such data it becomes near impossible to analyse why the waste is occurring and what can be done to prevent it.

Capturing food waste data in the first place is a sizeable challenge for many universities and requires a lot of work. Just over half (52%) of survey respondents say they measure all of their food waste and the absence of data on where waste is coming from is cited as a major frustration by a number of contributors.

The reasons for a lack of data capture are many and varied. Often it's simply not practical to monitor waste, for instance in the case of quick-service restaurants that offer a takeaway option.

The diversity of the average university's catering operations adds another layer of complexity. Different sites may be run by different operators which have their own system for recording waste, if any system at all. As one participant notes:

> *"The hospitality bins are shared with one of the catered halls so we don't know exactly how much is generated by hospitality specifically."*

This makes communication and collaboration between different sites and operators key, but it also requires buy-in from those on the ground. It's vital to ensure that staff are engaged in efforts to measure waste properly, according to one waste consultant, who also stresses the need to have food waste champions on the ground and to achieve management buy-in.

Even when data on food waste has been effectively captured, using this data to inform waste reduction efforts can be fraught with difficulties.

For sites where post-production waste has been identified as a significant issue, better forecasting of demand is one potential solution but it also represents a huge challenge that requires chefs to accurately predict how many covers they are likely to serve on any given day. Indeed, 83% of survey respondents say predicting demand is the single biggest front-of-house food waste challenge.

52%

measure all food waste

With many universities running up to 20 catering operations, predicting where the hotspots are going to occur requires sophisticated analysis that is beyond the scope of many universities. Students move fluidly between different outlets meaning that no two days are the same and even determined attempts to forecast sales can prove ineffective.

Unpredictable levels of demand can lead to scepticism about the efficacy of mapping and forecasting exercises, exemplified by the views of one participant:

> *"We have production sheets: this week 150 salmon were served, 20 were left, so I order 130 next time, but students then change their mind. It doesn't work."*

Monitoring the level of food waste that is collected for disposal is another means of generating data, yet many interviewees say they have no ability to analyse the levels of food waste that are removed by their contractor, due either to an absence of auditing or a lack of information provided by the contractor themselves, with detailed breakdowns of figures often unavailable.

Solutions

By the end of this year, the hospitality and foodservice sector could be wasting £3 billion on food waste, and a majority of that is unavoidable.

These figures enjoy widespread media coverage and have led to food waste racing up the political and business agendas. But individuals are struggling to make sense of their waste problem.

The only way to reduce food waste is to understand how much is there, what it is and where it's coming from. That requires analysis.

In terms of measuring waste, there are a number of different approaches. One of the latest is the Winnow system, in which an iPad is connected to scales so information on weight and contents can be inputted and reports downloaded.

Why universities take action on food waste

1 Environmental considerations

2 Regulation

3 Cost

4 Customers

5 Voluntary agreements

Why catering departments take action on food waste

1 Regulation

2 Environmental considerations

3 = Cost

3 = Customers

4 Voluntary agreements

Having said that, the advice from WRAP is to keep it simple:

> *"It's not rocket science – you don't need smart meter electronic systems; you can just have a bucket and a set of scales."*

There is industry-wide data showing the types of foods that are wasted most. For those in education the priority areas are generally potatoes, pasta, fruit and veg, and sandwiches. Carbohydrates, for instance, will generally make up 40% of food waste [10].

83%

say predicting demand is the biggest front of house challenge

But carbohydrates are, as one head of commercial services puts it, "cheap as chips". A plate piled high with fries costs 17p, so the tradeoff between cutting waste and giving customers what they want – big portions and the perception of value for money (see chapter 2a) – becomes harder to reconcile.

Savings do not trump all other considerations, however. Our survey suggests it's environmental considerations that top the list of most important reasons for further action on food waste, followed by regulations and then cost.

Rather than use industry-wide figures, university caterers need to be proactive in analysing what is ending up in their own bins. This process can be disturbing and revealing in equal measure (see "Smelly statistics and students"), and waste contractors could certainly do more to help out, for instance, by offering recycling packages that include the measurement of waste on behalf of their client and by collaborating with universities to reduce waste where hotspots have been identified (see chapter 2d).

The data will also have to be normalised – in other words, doing the same thing on different days and different times of the week to identify trends and disregard anomalies. The whole process will live or die on the involvement of staff and, ideally, someone to champion the research (see chapter 2d).

The same goes for students. There is no point in continuing this vicious cycle whereby chefs blame students for waste and students blame chefs for lack of choice. Instead, catering operators need to talk to students and find out answers:

- Are they being served too much?
- Is something wrong with the food?
- Did they understand what they were ordering?

This data will take time and effort to collate but the result will be a much better understanding of the food waste hotspots. Menus can then be planned more accurately, with guesswork less of a factor.

Smelly statistics and students

The best way to engage students is to use students – and yet even the students on environmental courses do not seem to be putting any pressure on the campus caterers. This has "amazed" some respondents.

One university is, however, using students in a novel approach to assessing its food waste, by getting them to do the dirty work. A few of those from the business school are completing a project that will calculate the amount and type of food wasted.

"We've already seen that plate waste is where most food waste arises," says one of the students involved. "We [now] need a survey team to watch what students are leaving on their plates."

Better menu planning is far from easy …

> *"You really can't pinpoint why students suddenly want peppers one week and then the next they don't want any at all. We are looking at a reduced menu during vacations, going forward."*

… but it remains a massive opportunity to cut food waste. Here are some top tips that emerged from the in-depth interviews:

- "We monitor very closely dishes that generate more plate waste and then we will tweak or remove the dish."
- "We've stopped putting garnishes on burgers in our pub and replaced it with coleslaw, which people usually eat."
- "It's nuts to have a menu cycle of five weeks because you don't give students the chance to understand the menu. It's like a restaurant – 80% of the items stay on the menu because people want them."
- "Specials are a great way to use up things left over from the day before."

Takeaway tip

ANALYSE where your food waste is coming from, using technology where appropriate, and use this data to target your waste hotspots.

Some operators have already identified where production levels can fall off – "sports days, for instance" – but don't underestimate the power of technology in getting feedback from your customers.

One university canteen has just launched an app – customers point their smartphone at the QR code on the table talkers or receipts and provide feedback. They have had more responses in two weeks than in the past two years.

This could be extended. While some have trialled advance lists so students can select the meals they want, they tend to forget what they'd chosen. Technology, via an app, could clearly help.

Facebook, Twitter and other social media channels are all valuable data sources. Some respondents say they are considering clean plate competitions. And, when you want to trial something, do it on a small scale first. Instead of the largest canteen, use a coffee shop on site, for example, to try and wean students on to smoothies using cabbage leaves.

Case study:

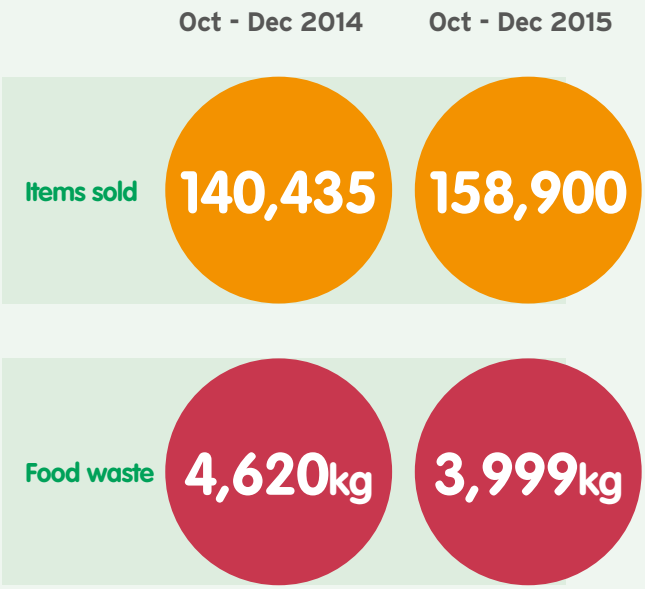
Data analysis and student communication

From a big city campus:

- We have four choices of main courses
- We weigh the waste at the front and back of house after breakfast and dinner and keep an online record of it, all of which is available to share on a shared drive
- The figures inform our five-week cycle menu planning
- Staff ask students at bins or at tables what was wrong with their food if something has been left on their plate
- This year we've brought in a system of students scraping their own plates. Our students have paid for it so they're going to take it
- We used to give them a tray and they piled it up but now with only two hands they take less

Fruits of your labour

A meticulous approach to food waste at one university has shown what can be achieved, with sales up and food waste down:



2d: Operations and logistics: the devil in diversity

Challenges

The diversity of the food offer in higher education may be a blessing for customers but it can be a barrier to food waste reduction efforts.

In an ideal world, good waste management practices would be rolled out across all sites but this can pose major logistical challenges where diverse sites have different facilities and unique ways of working. The situation described by one participant reflects the challenges faced by many universities:

> *"We have eight business units, so what suits us [the main catering facility of all five campuses] has to suit other units. They are all very different sites across different campuses."*

Often this means that a number of different people are responsible for managing waste throughout the university, making it a challenge to find the right person with whom to engage on waste-related initiatives.

Distance between sites can also create disposal problems, meaning, for instance, that there is no viable central point for an on-site composter.

Sending waste to AD can prove an additional problem. Segregating food waste and general waste requires space for extra bins, which is often at a premium, while the weight of food waste bins can make them hard to manoeuvre and collection vehicles can struggle to get through narrow gateways.

One university found issues with night staff moving food between bins in order to remain under the weight allowance without concern for which bin the food was ending up in, thus causing contamination.

Poor communication between customers, waste collectors and processors can result in bins destined for AD being diverted to landfill because the collector cannot guarantee that only organic matter will be present in the food waste stream.

Frequency of collection can also be an issue since many universities require collection out of hours when site access cannot always be guaranteed.

Solutions

Environmental initiatives can be a hard sell to time-pressed staff, especially in a sector where the pace of change is traditionally slow. Food waste is a high-profile issue, though, that affects everyone.

Perhaps for this reason, our research found it won't be as hard as you think to get everyone involved: 79% of respondents say staff are on board with reducing food waste. Even in outlets where the staff are part-time and students, for example those run by the student union, "95% do engage", according to one catering development manager at a large university.

Some respondents check the bins every so often to keep staff "on their toes", while others play the financial card. One operations manager says:

> *"Staff understand the waste if you quantify it in terms of labour costs. So you could say, if we hadn't wasted those 10 burgers you'd have had an extra pair of hands for two hours today."*

However, early signs of progress can quickly tail off if staff are not reminded, retrained and re-inspired.

Some are considering posters and tables to show what's been wasted each week, tracking improvements.

The concept of introducing a competitive element is gaining traction in the corporate world. Costa, for example, runs competitions between outlets on reducing energy [14]. Feedback and consistent monitoring can ensure long-lasting rather than short-lived improvements.

Communication with staff and students is vital, but in those universities where progress has been most impressive, regular communication with all stakeholders shines through. Chefs, students and catering staff will all be involved to assess everything from student feedback on Twitter and waste data from contractors to new menu ideas.

Contractors clearly have a bigger role to play. Only 60% of respondents are happy with the way their food waste is collected and disposed of. "We don't know" was a common response when asked where their waste goes.

Catering firms may see student engagement as the biggest challenge in tackling food waste, but there are clearly problems at the back door too. One business services manager at a

campus with more than 10,000 students explains that in his tender to manage food waste he has emphasised the importance of data collection.

> *"We want … food waste contractors and general waste contractors [that] give us hard and fast audits of our waste."*

Takeaway tip

INSPIRE staff to buy in to food waste reduction initiatives, introducing a competitive element where appropriate, and engage your waste contractor at an early stage.

"We feed back food waste figures to staff and it shocks them. Though we haven't done that for a couple of weeks and things have slipped."
Operations manager

2e: Legislation: bring it on

Challenges

For any operator whose attitude towards food waste is one of apathy, this section should provide a wake-up call.

Legislation is the latest tool that some countries are using to ensure that tackling food waste is prioritised. The Waste (Scotland) Regulations require businesses that produce more than 5kg of food waste per week to separate this for collection (see "Scotland: follow my lead"). France, meanwhile, recently passed a law that will ban supermarkets from throwing away or destroying unsold food, forcing them to donate it to charities and food banks.

In England, voluntary agreements have been the favoured route to date. WRAP's HaFSA is the standout programme to help businesses tackle food waste, with targets to reduce food and packaging waste and send more waste to AD and composting.

Attitudes towards voluntary agreements among contributors are mixed. Some believe they are an effective way of driving operational change while others believe that laws work better (one contributor goes as far as describing voluntary agreements as "ridiculous").

Overall there is a groundswell of opinion among survey respondents that laws are often needed to force people out of their inertia on food waste with 74% saying regulation would drive further action. One interviewee puts forward a passionate case for legislation:

> *"If the law changed, I would welcome it with open arms, it wouldn't concern me even remotely. We like to be in a position where we're setting a standard and if we're missing a trick we want to know about it."*

Yet legislation can pose its own challenges. A frequently expressed concern among interviewees is that regulations to force businesses to send zero food waste to landfill would give carriers an incentive to push up prices in line with greater demand.

Anecdotally, this is already happening in Scotland where more than one respondent says that the price of food waste disposal has gone up because Scotland does not have enough composting capacity to meet demand. However, one consultant suggests

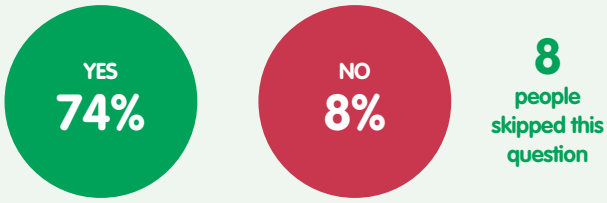
sending waste to AD should cost "as little as half" that of sending it to landfill.

Other contributors note the unintended consequences that regulations can have on food waste. Allergen laws, for example, are claimed to have increased waste since people are reluctant to reuse leftovers for fear of not displaying the correct allergen information.

Food safety and allergen legislation are cited by a number of interviewees as a barrier to redistributing surplus food, which ranks above sending food waste to AD on the waste hierarchy. The majority of respondents express a keenness to distribute surplus food to local charities and food banks, but many say the risk that they would be liable if a recipient fell ill after eating donated food prevents them from doing so.

Food Waste Survey

Do you think that regulation would drive further action in higher education on food waste? (England & Wales only)



Scotland: Follow my lead

Food waste is clearly an issue of import for university caterers, but from our research it's clear that interest and action varies from campus to campus and even within campuses. WRAP estimates that 80% of food waste from the education catering sector still goes in residual bins and ends up in landfill, or at waste-to-energy sites.

In Scotland, there's a very different landscape, as one consultant explains:

> *"Suddenly they have to take an interest [in this, or else] they'll get fined."*

Under the Waste (Scotland) Regulations, any food business creating 5kg or more of food waste has to separate it for collection, by law. This has been an eye-opener for many who for the first time see the quantities of waste created.

Solutions

Almost three-quarters (74%) of our respondents give the green light to red tape helping them reduce food waste. They've become fed up with voluntary agreements – which rank bottom on their list of drivers to take action.

In the UK, it appears the political tide may be turning in favour of regulation. Despite a reluctance to legislate within the current Conservative administration more than 100 MPs have supported a food waste bill about to have its second reading in parliament (see "Labour pushes waste laws").

Legislation would be a long time coming, of course. For the time being the focus will remain on voluntary agreements. WRAP has just launched Courtauld 2025 – a super-agreement spanning food retail, manufacturing, foodservice and hospitality that replaces both the Courtauld Commitment (for grocers and manufacturers) and the HaFSA.

It's very early days, but the concept of sharing best practice across the entire food sector has merit. Some 95% say it would

Labour pushes waste laws

The shadow environment secretary, Kerry McCarthy, introduced the food waste (reduction) bill in September 2015. It's proving a popular piece of legislation, not least on the back of similar moves in France, Italy and ostensibly Scotland.

It will require large supermarkets, manufacturers and distributors to:

1. Reduce their food waste across their supply chains by at least 30% by 2025, from a 2016 baseline.
2. Agree an industry benchmark by the end of 2018 for measuring on-farm waste and set a target for reduction.
3. Make proposals for reducing food waste by 50% by 2030 from a 2016 baseline.
4. Enter into formal agreements with food redistribution organisations within six months of the Act coming into force, for the purpose of donating unsold in-date food to such organisations.

help them manage food waste better. One consultant pulls no punches when she says:

> *"Foodservice is behind grocery and manufacturing [on tackling food waste] and it has to catch up."*

Defenders of the industry might argue that HaFSA arrived seven years after grocers and food firms got the Courtauld Commitment. There are also practical issues to consider in foodservice, including the low levels of waste and the fact that much of it has been unpacked and cooked.

Which brings us to redistribution - an issue on which supermarkets are forging ahead [15]. Caterers see the merits – ethically and socially – but are turned off by the perceived safety rules and risks. Capturing the zeitgeist one manager says:

> *"There's so much red tape around food safety."*

Several experts, however, question the validity of citing liability as a reason for not exploring distribution options. One respondent involved in food redistribution claims it is simply an excuse for inaction, while a waste consultant highlights that a quick-service restaurant she is working with says the barriers are principally "mental" rather than legal:

> *"You need the right partners involved but you can easily get on with it."*

Some are moving the surplus food internally. Libraries appear to be a suitable outlet for packaged foods as they are open at the weekends. Still, liability is limiting the scope of initiatives with external partners: many universities fear any kind of bad publicity.

On the flipside, an inability to take action has already seen the big supermarkets and some high-street foodservice brands facing tough questions from the likes of Hugh Fearnley-Whittingstall on TV [12]. Caterers should ask themselves this: how long will it be before other sub-sectors begin to attract unwanted attention?

"Even with a disclaimer form we'd have some liability and most universities are very wary of bad publicity."
University head chef

"One of our chefs coordinates food waste and takes it to refugees."
Head chef

Some are using discounting as a tactic to avoid food waste. One caterer says:

> *"On a Friday we offer 50p sandwiches so we don't get any waste – students come up with carrier bags and stock up."*

Is this just moving waste from the kitchen bin to the one on the halls of residence, where respondents offered countless tales of rotting food? Discounting surplus food for staff can also be a double-edged sword, with some offering stories of food being held back.

Single universities might not have the quantities of surplus food to make redistribution a cost-effective solution for some charities (there is also the issue of diversion to anaerobic digestion being subsidised and, sometimes, cheaper). Going it alone also brings fear of repercussions.

Coordinating collections in neighbouring campuses and universities could offer a solution. The lead could be taken by TUCO alongside one of the national waste collectors and one of the big charities. The supermarkets are an easier target, the food is packaged and in significant quantities, but this doesn't mean more localised opportunities should be shunned.

The food waste bill doesn't make clear whether the regulations would extend to foodservice companies – it only mentions supermarkets, manufacturers and distributors. So far the proposals amount to just five pages, but more significantly over 100 MPs are already backing it.

Takeaway tip

PRESS the government for regulation to create a level playing field on food waste, and in the meantime sign up to voluntary agreements such as WRAP's Courtauld 2025. Collaborate with local partners to redistribute surplus food.

Conclusions

This research identifies five key challenges facing university caterers when it comes to managing – and, critically, reducing – food waste. The cost of taking action, the capture of data and the diversity of operations all create headaches. However, engagement with customers – students – is the greatest challenge.

There are plenty of examples where university caterers are taking action. Staff, in the main, appear to be on board with training, for example, while some have begun to accurately assess what they are throwing away. Again, the activity has largely been focused back of house.

A little more innovation and communication would go a long way, not only to inspire and if need be shock students into action, but also to reward them when they do.

Cutting food waste cuts costs, and this is a message that campaign groups and advisors have been pushing. But it's not the only thing that will resonate with caterers who, in fact, cite environmental implications and regulation as the main drivers for taking action.

Most want legislation to help drive change. The food waste bill is one to watch, given that it could change the regulatory landscape and bring England in line with its more ambitious neighbours to the west and north. Those MPs who have backed the plans do so because industry has not taken action and voluntary schemes have not worked.

For now, TUCO and its members will need to look carefully at how the new Courtauld 2025 voluntary agreement could provide a stepping stone towards more widespread food waste reduction schemes. This would also prepare university caterers in the event of a change in legislation.

As a catering operations manager at a university in southern England notes:

> *"It's good to get your house in order [if] legislation spreads down here."*

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