



# Food Service Measurement Tool - a Pathway to less food waste





Food at home



Home composting



Local information



Food in business

**DON'T GO SHOPPING**

when you are **HUNGRY**

You buy **MORE** than **YOU NEED!**

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Map of Master Composter Demo Sites



News

- North West Garden Show 2011(11.5.2011)  
Master Composters open site in Co. Meath(14.4.2011)
- Master Composters on You Tube(24.3.2011)

All news

Events

May 2011						
M	T	W	T	F	S	S
25	26	27	28	29	30	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

All events

Links

ation  
2008

35%

30%

25%



Home > Organisations

## Resource Efficiency in Organisations



We are going to look at four main subject areas to do with resource efficiency in Organisations - **Food, Waste, Water and Energy.**

Don't forget that when looking at resource efficiency in Organisations you can also take the generic Nine Step Approach.

Waste



Food



Water



Energy



## HOW TO GUIDE

Undertake A Detailed Food Waste Survey - Bulk Food System



This 'How to' guide outlines how to undertake a detailed food waste survey in facilities operating a bulk food system. This 'How to' guide should be read in conjunction with the 'How to assess overall food waste' guide.

Relationship between food waste surveys



What do I need to do a food waste survey?







***SDG 12.3:*** “By 2030, ***halve per capita*** global food waste at the ***retail*** and ***consumer*** levels and reduce food losses along ***production and supply chains***, including post-harvest losses”



# Food Loss + Waste

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## PROTOCOL

A commercial kitchen scene with a stainless steel sink, a dish rack with dirty plates, and several green and blue plastic bins filled with food waste. A white bucket labeled 'Ready Eggs' is on the counter. The text is overlaid on a semi-transparent white circle.

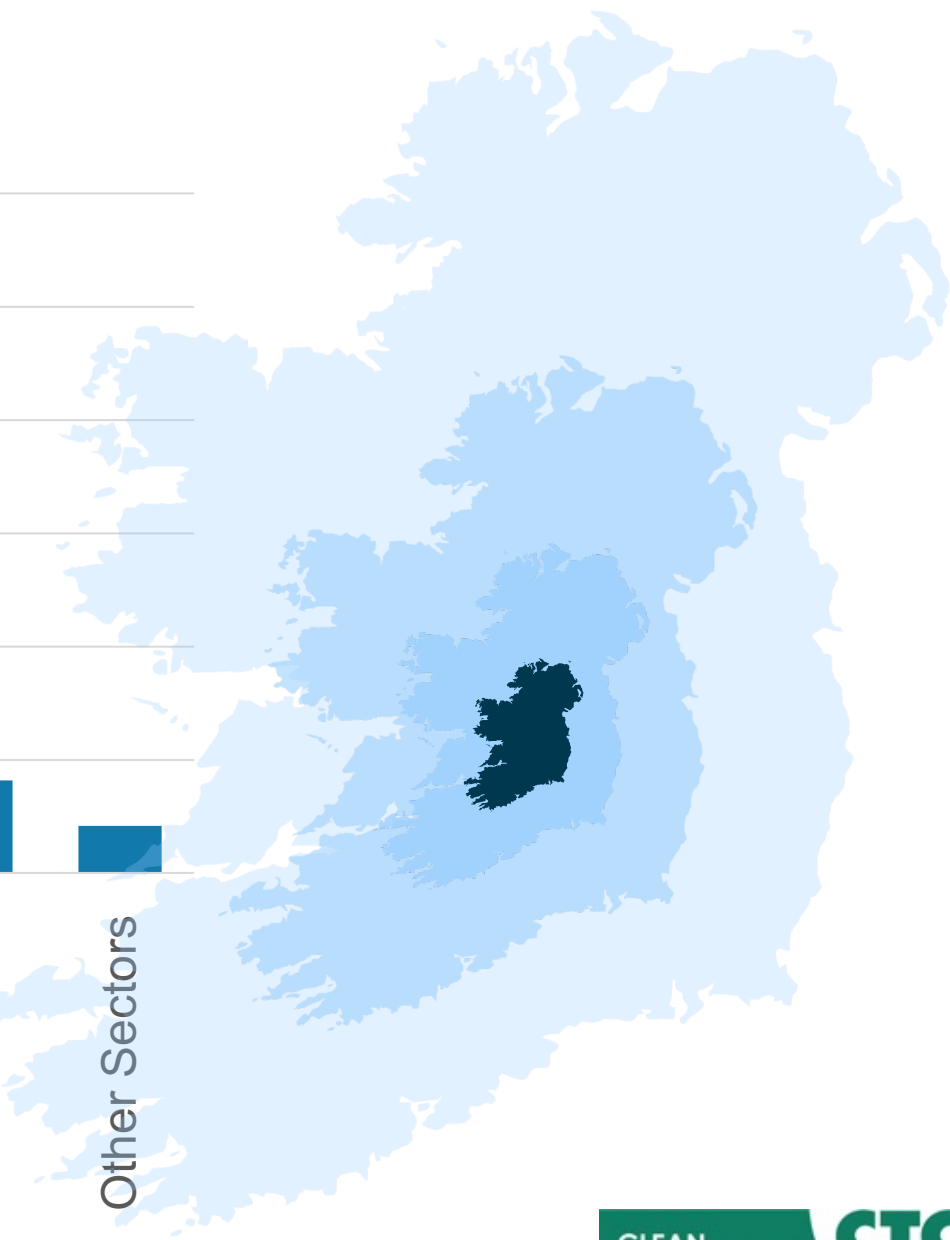
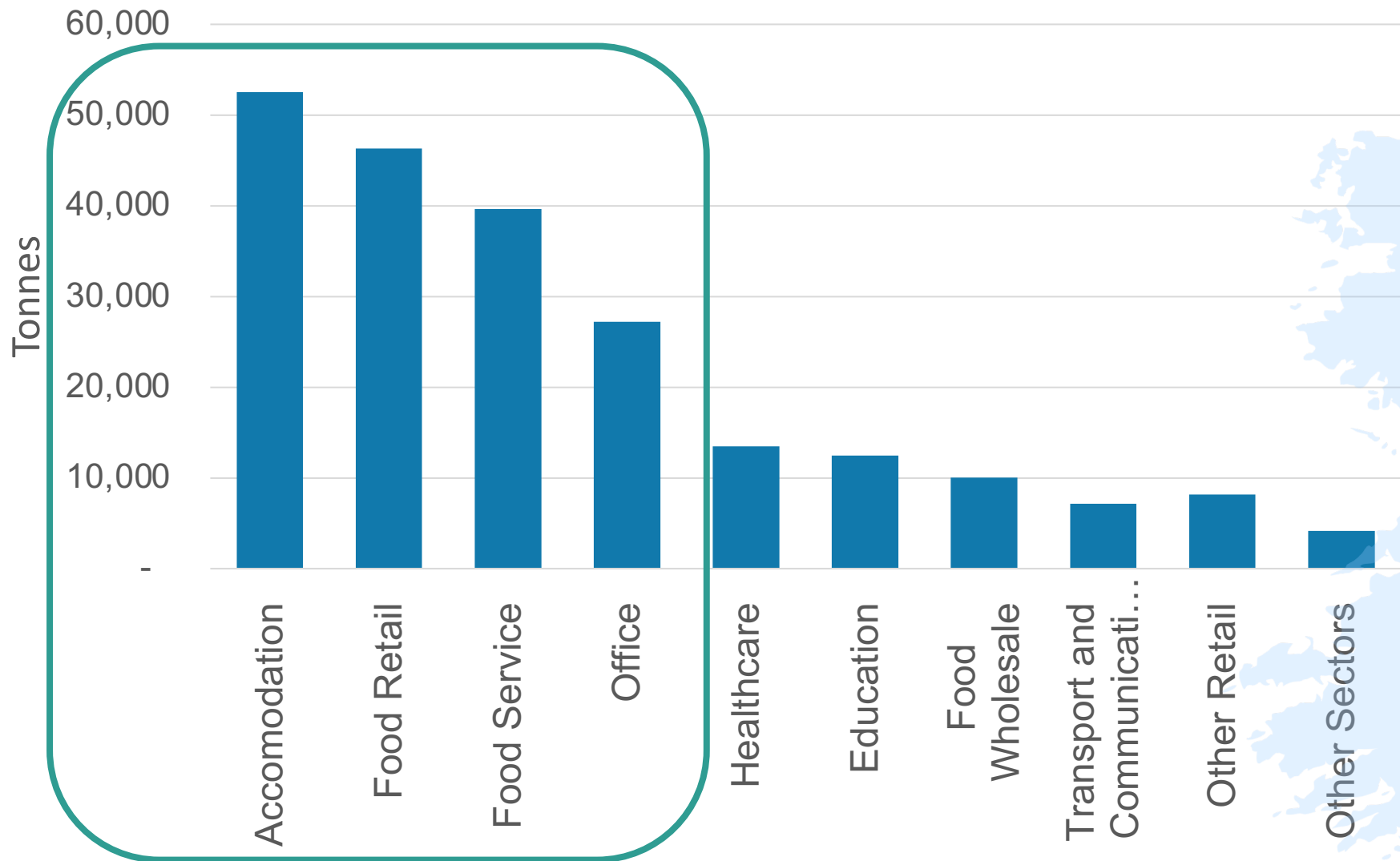
# Commercial Food Waste Research Project

Funded through EPA Research Programme  
2014-2020

Studied food waste in **retail** and **service**.

Looked at the types and amounts of food  
being wasted.

# Sectoral Food Waste Mapping

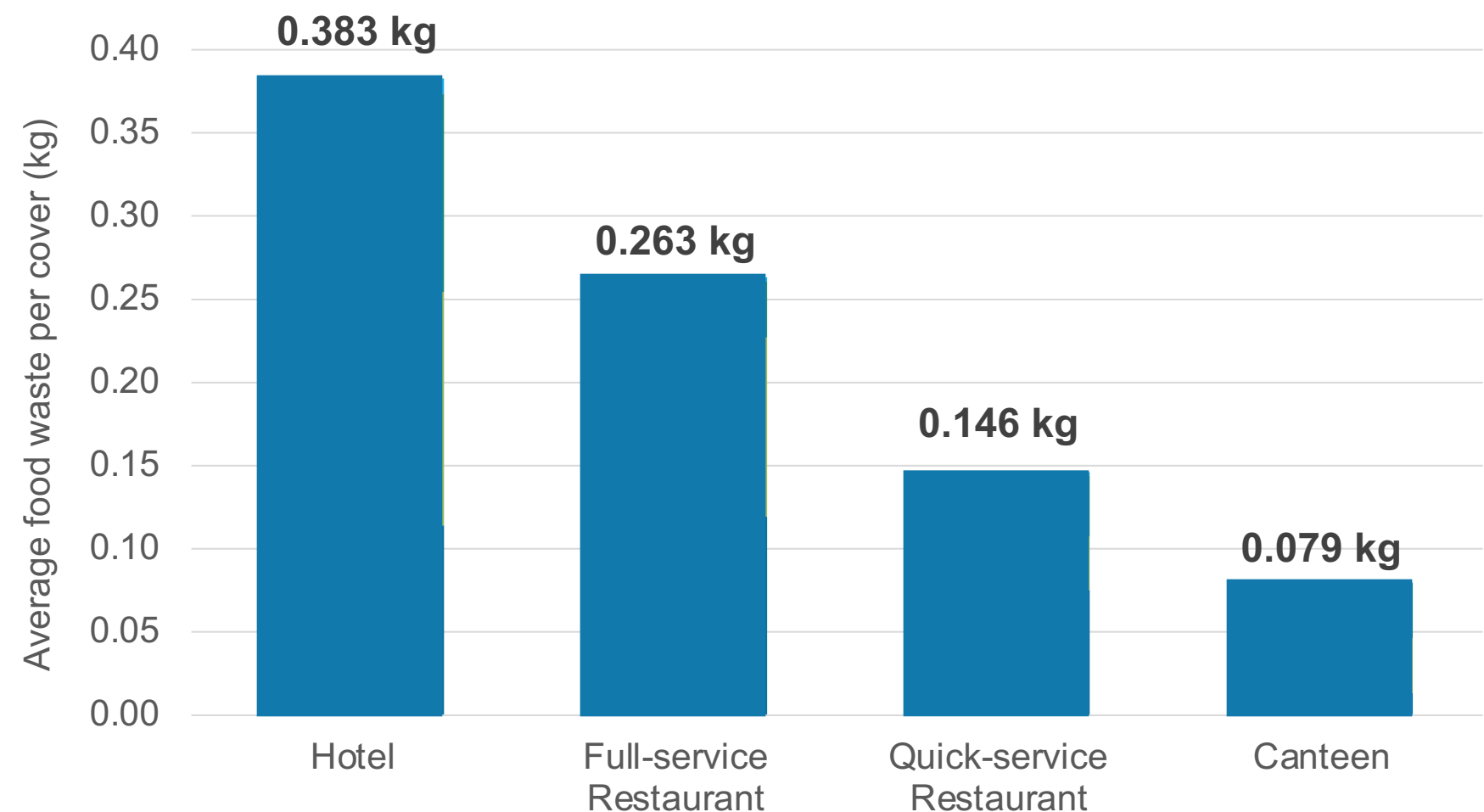




# Methodology: Waste Composition Analysis

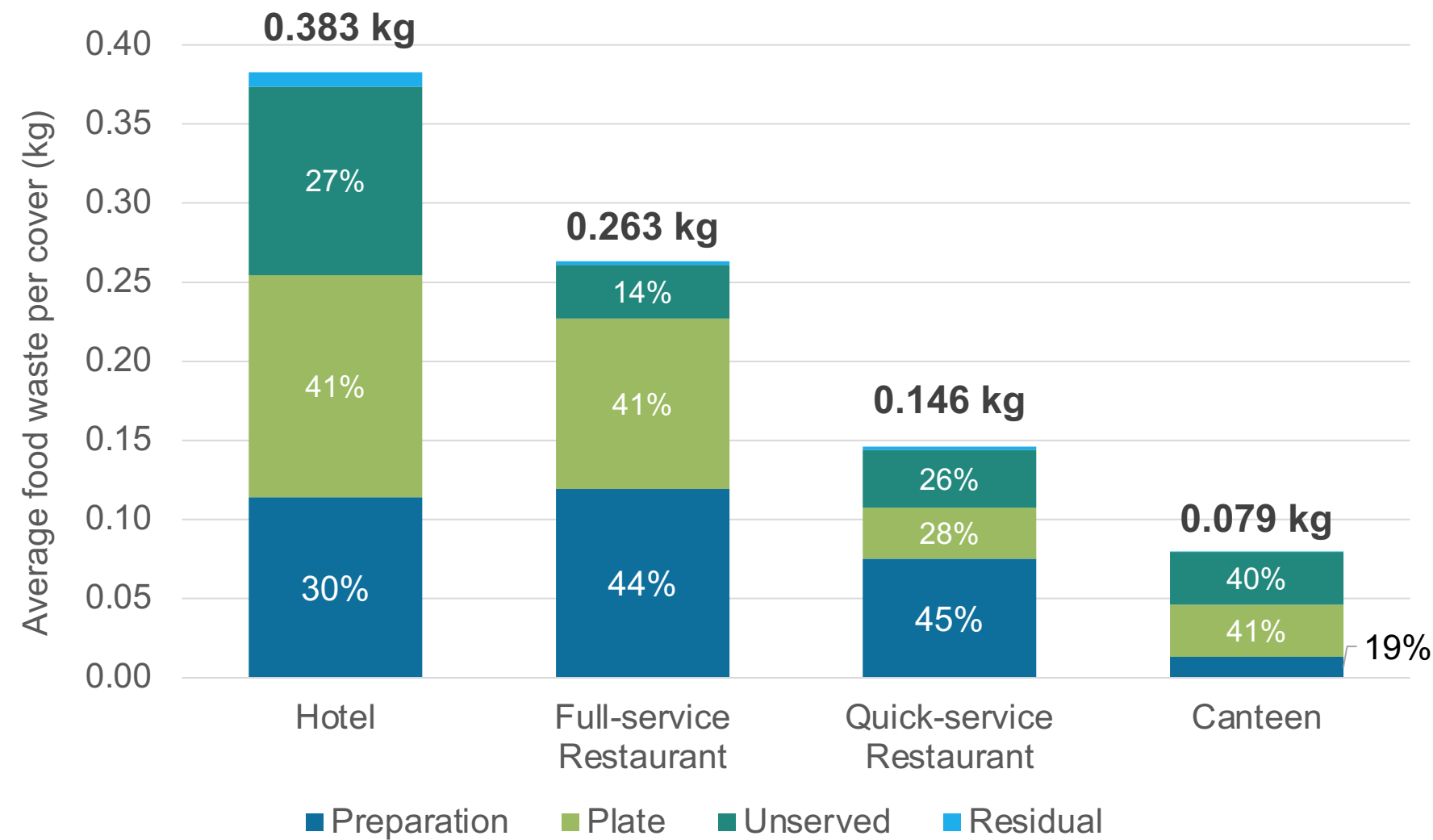


# Food Service Results



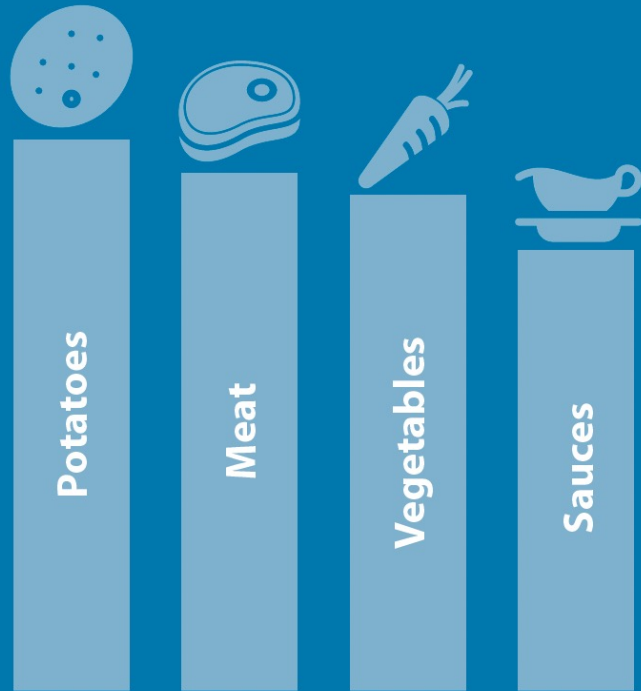


# Food Service Results



## Identified the main types of food waste

### Top four types of avoidable food waste



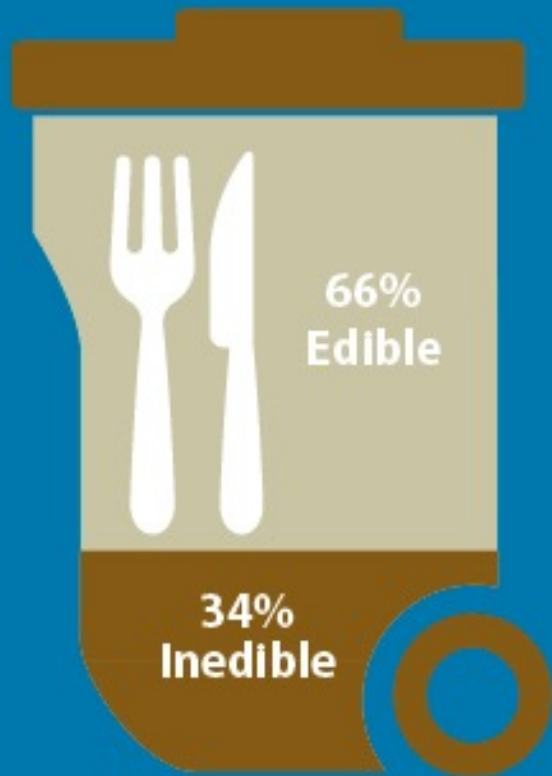
### Top four types of avoidable food waste



### Top four types of avoidable food waste



## What's it costing your business? e.g Hotel profile



€3.38  
per kg\*





# Actions to prevent food waste

## PURCHASING:

Purchasing is the first place where food waste can be avoided. If it's not bought, it can't be wasted. Keeping accurate records of existing stock and a well-managed purchasing system are key ways to prevent unnecessary food from getting into the kitchen.



### Designate a purchaser

If possible, all stock should be ordered by one person to avoid mistakes and over-ordering. The person responsible for ordering should communicate regularly with other staff about excess or shortages of stock.



### Buying in bulk

Buying larger quantities of ingredients can be more economical, but only if all is used. Beware of the potential for false economy when bulk buying, especially foods with short to medium shelf-lives.



### Keep it local

Buying local ingredients ensures customers have the freshest available produce, reducing the risk of spoilage. Local sourcing can also make it easier to negotiate deliveries that suit you. It has other environmental benefits including reduced food miles and greater potential to use reusable packaging loops such as crates.



### Grow your own

Growing your own herbs means you can pick what you need, when it's needed, avoiding expensive and highly-perishable packaged herbs. Hardy, easy to grow herbs like rosemary, thyme and mint are good ones to consider. Similarly, salad greens are easy to grow but expensive to buy.



### Money for jam

Keep a good conversation going with your suppliers. There may be an opportunity to buy surplus produce at a discounted rate and add seasonal specials with good margins. Perfect for preserves.



### Cash in

Use the data analytics on the till to inform stock control and forecasting.

## STORAGE

In busy kitchens it's all too easy for storage spaces to become disorganised and for food to end up forgotten about. Maintaining an organised storage system is vital for preventing unnecessary waste in the kitchen.



### First-in-first-out

When storing new deliveries, always place the new items to the back and bring existing items forward. This ensures older items are used first. Once washed and prepared, store raw vegetables and other perishables in reusable airtight containers to prevent unnecessary dehydration and spoilage. Store these containers in the refrigerator at or below 5 °C where applicable.



### Vacuum pack

Vacuum packing expensive foods like meat, fish and sauces maintains freshness and extends shelf-life. It's a useful way of keeping ingredients that are bought in bulk (e.g. nuts) or occasionally used (e.g. sun-dried tomatoes). Vacuum packing can also save time in the kitchen because batches can be prepared less frequently when they can be kept for longer.



### Label

Have a clear labeling system in place to mark all foods when labelling and storing. Make sure you 'stick' to it!



### Maintain cold storage

Makesure fridges, coldrooms and freezers are well sealed and calibrated as required to make sure correct temperatures are maintained.



### Light it up

Ensure that food storage areas are well lit so that everything in stock is easily visible.

## PREPARATION & COOKING

The kitchen is where there is the most control over food, yet in many businesses it is a large contributor to overall food waste. Maintaining good practice in the kitchen can make a big difference, without having any effect on customer interactions.



### Check your trimmings

Over-trimming typically occurs in the preparation of bulk meats and whole vegetables. To see how much trimming occurs place a tub or caddy near the meat preparation area. Check the contents of the tub regularly before emptying into the main bin.



### Food to order

Whenever possible, prepare foods to order to avoid waste generation from over-preparation.



### Batch size

Keep batches of pre-prepared staple food such as pasta, potatoes and vegetables as small as feasible. Although cooking an extra batch now and then takes staff time, frequently throwing leftovers away is a costly habit.



### Standardise recipes

In large kitchens, recipes should be standardised for all staff. This reduces the risk of error and maintains standard procedures which are easier to follow. Customers will know they can enjoy the same delicious food every time.



### Maintain equipment

Keep ovens and cooking equipment calibrated to avoid discards due to over-cooking. Good practice such as keeping knives sharp can also reduce unnecessary waste.



### Make stock

Consider getting some use out of vegetable and meat offcuts by using them to make stock.



### Avoid inedible garnishes

Avoid inedible or rarely eaten garnishes that end up as waste. Using decorative plates and clever plating reduces the need for these garnishes while maintaining an attractive appearance.



### Sous vide

Sous vide is a cooking technique where ingredients are vacuum sealed in a bag and cooked at relatively low temperatures in a water bath. This process can extend the shelf life of food and prevent waste.



### Turn leftovers into turnover

Common examples of this include bread into breadcrumb and vegetables into soup. Get creative with this. Specials are the perfect opportunity to repurpose food. Reward staff in the kitchen who come up with popular specials and reward front-of-house staff who sell those specials to clientele.



### Food safety

Good food safety practices will reduce cross-contamination and reduce the incidence of disposing of food that has become contaminated.



### Anticipate demand and track trends

Each day, keep a board for staff with a note of bookings, forecasted weather and special events. Keep a folder with records of covers and other information for notable dates such as graduations, communions etc. Refer to these records the following year to inform food ordering and preparation. Although most people in food business do this instinctively, having a written record can really help refine this.

## SERVING

No matter how well your kitchen operates, the customer always has the potential to create food waste. Although this may seem inevitable, clear communication through the menu and by serving staff can make a big difference. Communication is key.



### Bread

If you serve bread before a meal, ask customers whether or not they would like it first. If possible, minimise the quantity of bread provided prior to the meal. Filling up on bread can lead to food waste from the main meal and can reduce the likelihood of customers opting for dessert.



### Offer leftover boxes

Offering leftover boxes or doggy bags reduces plate waste and has been shown to increase customer satisfaction. When customers know this is an option, it can improve sales as they know they can enjoy any leftovers later.



### Offer more later

Many businesses pride themselves in their large portions, but piling on the food is not the only way to appear generous. Where the serving situation allows, offer second helpings rather than initial large portions. Customers will still be impressed by your generosity and it will save you in the long run.



### Go trayless

Several studies into food waste in the canteen sector have found that removing trays can reduce plate waste by up to 30%.

## MENUS

The menu is an excellent tool to reduce food waste and increase sales. It is one of the most important ways to communicate with customers. These days, with most businesses providing a menu online, it may be the only communication you have with potential customers.



### Just desserts

Choose to prepare and serve some desserts that keep for several days rather than mainly creamy desserts with shorter shelf-life.



### Be clear

The menu should be very clear on what is included in a meal. Always include the sides and any sizeable garnishes in the description.



### Include flexibility

The specials menu is an excellent way to use up surplus ingredients while adding variety to the everyday offerings.



### Surprise menu

Similar to an early bird, a surprise menu can be offered at a discounted rate. In this case, customers do not choose what dishes they want. This provides a great opportunity to use up food that may not be selling that day, while giving your customer great value and a chance to try something new.



### Menu planning

Design the menu so that fresh and perishable ingredients can be used in a variety of different meals. This reduces the range of ingredients needed and the risk of ingredients going unused.

## PORTIONS

Portions are so tricky to get right. They're a constant balancing act between food waste and happy customers. Like value, very often portion size can be a matter of perception.



### Sauce

Believe it or not, sauce is a major contributor to plate waste across many food businesses. Ramekins are very often oversized and lead to large amounts of uneaten sauce. As one of the more expensive items put on a table, sauce is one to watch out for.



### Half portions

Offer half portions or starter portions on suitable dishes and be clear that you offer this. Half-portioning improves customer experience, can have better margins than full portions and leave more room for dessert.



### Side portions

Serving side portions of vegetables to large tables or functions mean that customers can take as much or as little as they want. However, very often these portions are too big or too numerous. Pay attention to how much veg is typically coming back from side dishes. Perhaps serve less at the beginning and offer more?



### Communicate

Chef-customer interfaces such as carvery counters offer a valuable opportunity for customers to 'hold the sauce'. Keep lines of communication open and find out exactly what customers want.



### Standardise portions

Ensure uniform portions of each item are standardised across the kitchen team. Facilitate this amongst staff with adequate scoops, measuring cups, ladles, scales, etc.



### Milk Jugs

Leftover milk in jugs is a type of waste that really adds up. Having a self-service station will minimize it. Otherwise, keep jugs as small as possible.



### Donation

If food waste cannot be prevented, donating or distributing to people is the next best option. Donated food must be fully labelled, including allergens, and handled in compliance with food safety practice. Contact the Food Safety Authority of Ireland for more details.

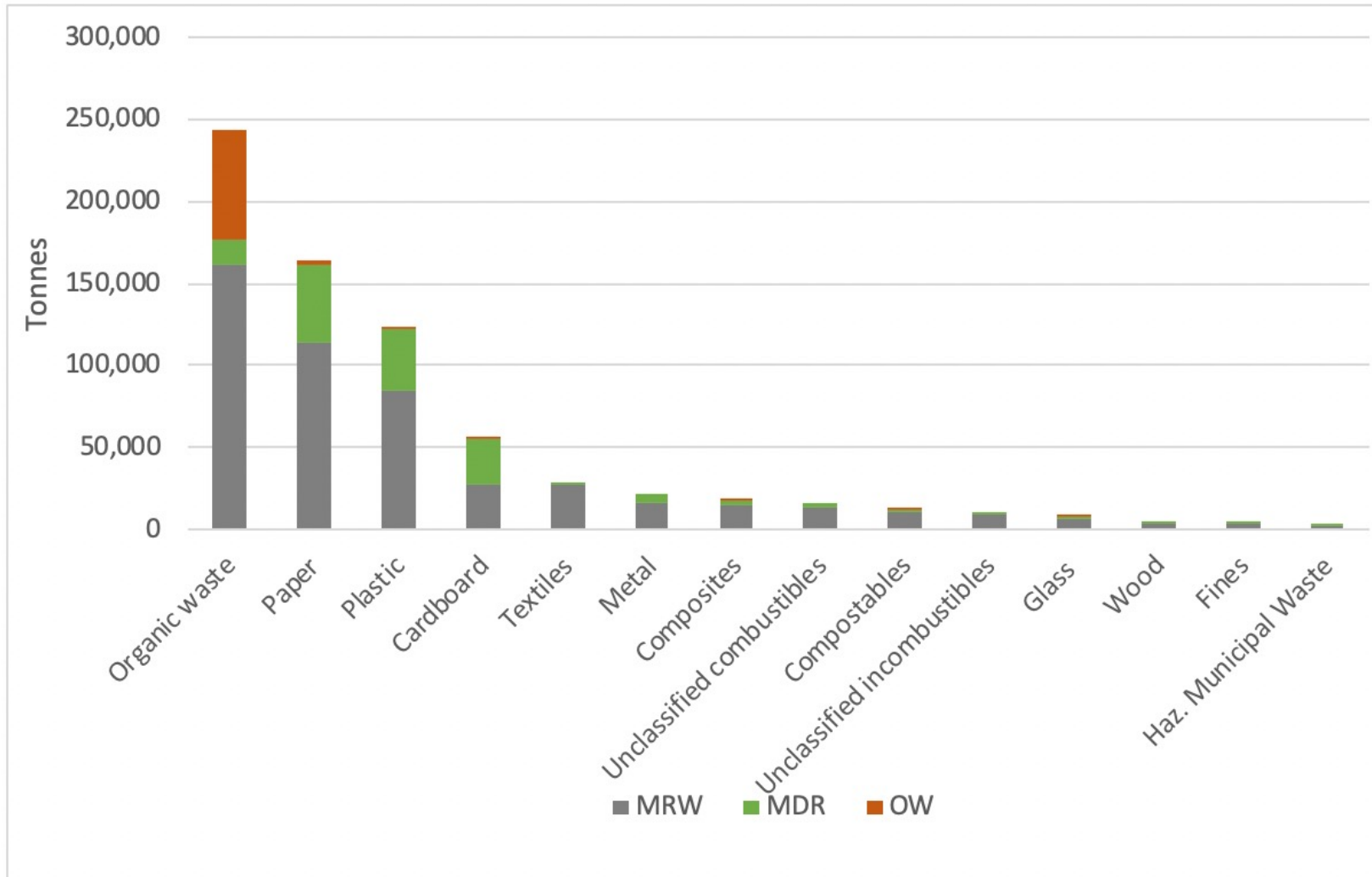


# Since then.....

- ▶ Applied the findings with interested businesses
  - ▶ Assisted businesses to examine their food waste and identify actions
  - ▶ Limited success – directly related to interest and time available of the people involved



# Segregation is still an issue in the commercial sector





# Consistent Measurement is not done

- ▶ Brown bin is not reflective of food waste and can't be used alone to benchmark
- ▶ No agreed and consistent measuring format
- ▶ Consequently, no real discussion about the amounts, types, sources and destinations of food waste


$$\frac{\text{Total food waste}}{\text{Number of covers}} = \text{Food Waste Per Cover Benchmark}$$



# Food Service Pathway

# About the Pathway



## About the Pathway

Many businesses say that they "don't waste any food, so measuring would be a waste of time", but are then surprised once they start measuring – it soon mounts up!

The four step Pathway aims to use information you already have to first estimate your food waste in a consistent manner. This will allow you track your performance over time, to compare your business with others in your sector and identify how you can reduce food waste and improve your bottom line.

### STEP 1: Make a start, gather basic food waste data

Get started by collecting some basic information about waste being collected from your business. Ideally, every food business would have at least 3 types of bins:

- Food waste collection bin (brown bins: where you would expect to find most of the food waste)
- Mixed general waste (it is quite common for food waste to end up in the general waste in food service businesses)

### STEP 2 Review and improve your data

Once you have your annual waste bills it is time to collate them for the whole year. Arrange them by date, for each bin type, in a basic spreadsheet and then check for any gaps in the bills you have. This might be due to missing records, a switch-over between contractors or even missed collections so you may need to get in touch with your waste contractor to deal with any queries.

Often waste contractors can run an annual waste report off their system for you (or have online billing facilities). These can be an easy way to gather your annual waste data.

Once you have these, add up the totals for each bin type

## Food Service Pathway to Less Food Waste and Better Margins

There is compelling evidence of how much hospitality and food service businesses can improve their bottom line by minimising food waste. Some savings come through lower waste management costs, but the largest savings come through reducing the raw materials that end up as food waste.

Reducing this food waste is not just financially rewarding, it has the added benefit of reducing carbon emissions and contributes towards addressing climate change.

Before you decide on any course of action, you need to know what food waste is coming out of your business, where it is coming from and what causes it to happen.



During the reporting it in an, this should be lines and begins

waste and recycling through better food waste correctly placed in general waste environment.

records - if you then update your information becomes

er time and to business to reduce food or for waste



Step 1  
basic for

b. Number of lifts for each bin type	Bin size/type (litres)	No of lifts in the time period	Estimate of number of lifts per year	Conversion factors (kgs per lift)	Estimate for total waste (tonnes per year)
Food waste brown bins	140 L		0	80	0
	240 L		0	135	0
General waste bins	240 L		0	34	0
	360 L		0	51	0
	660 L		0	95	0
	1100 L		0	154	0
Mixed recycling bins	240 L		0	14	0
	360 L		0	22	0
	660 L		0	40	0
	1100 L		0	66	0



te

c. Estimate of tonnage for each waste type	Estimate for total waste (tonnes per year)
Food waste brown bins	0
General waste bins	0
Mixed recycling bins	0

Step 1  
basic for








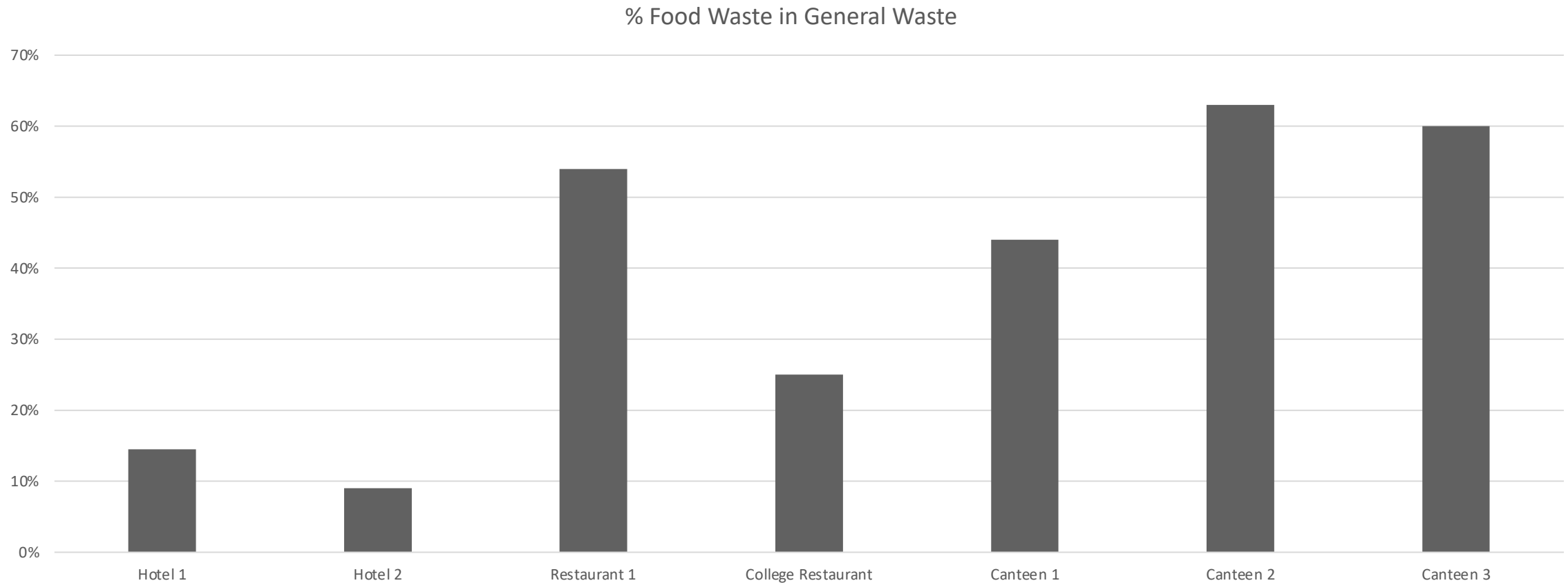
## Food service 'touchstone' report

By starting to track your food waste amounts, you can better manage and reduce your costs, and make a positive impact on sustainability

Fill in the blank, white cells

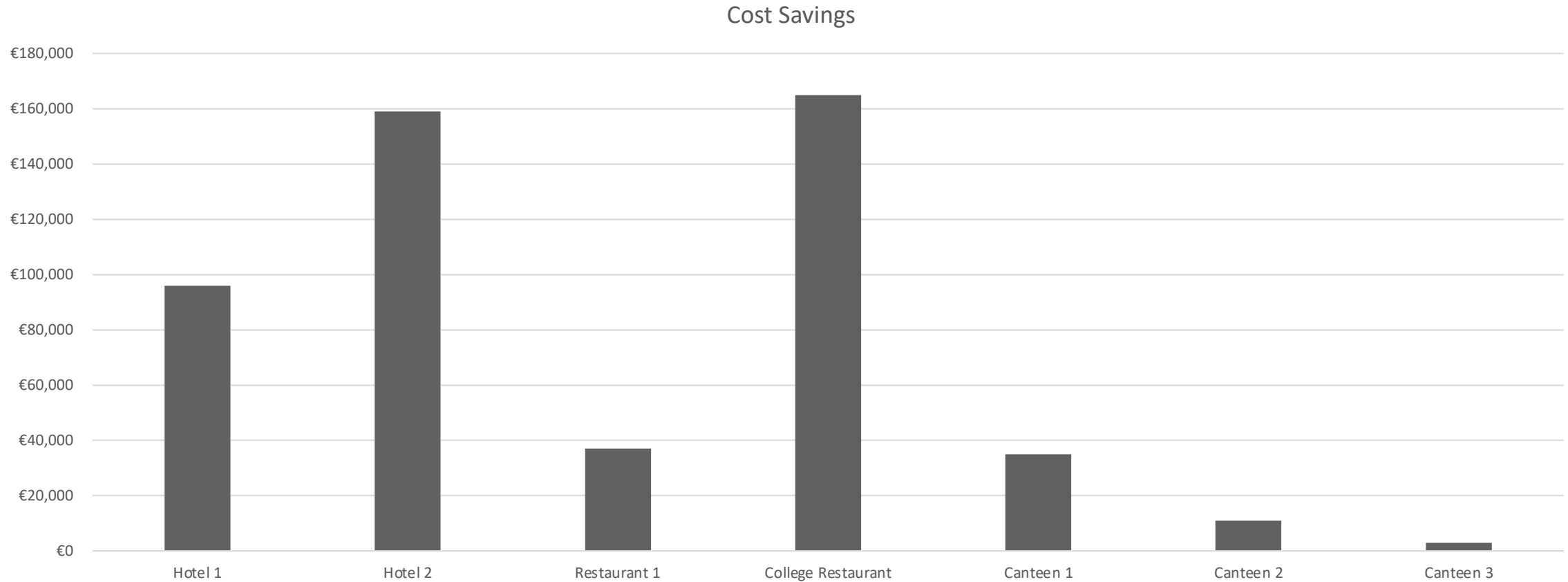
<b>1. About your business</b>					
Name of company:		Onsite Canteen			
Address:		-			
Type of food service outlet (select from the dropdown list):		Hotel - function			
<b>2. Time period for your waste data</b>		starting: (beginning of) month/year	01/01/2019	Time period (days)	
		finishing: (end of) month/ year	01/01/2020	365	
<b>3. Tonnage for each bin type</b>	<b>3A Total waste (tonnes)</b> indicate method used to estimate in Section 4 below	<b>3B Estimated food waste content (tonnes)</b> indicate method used to estimate in Section 5 below	Scaled up values if bills for less than a year used	Food waste Segregation - percentage by bin type for this business	National default values* (food content in each bin - only change these if you have your own data, see Section 6 below)
Food waste brown bins 	37.038	33	0	71%	90%
General waste bins 	40.64	13	0	28%	32%
Mixed recycling bins 	8.97	1	0	2%	9%
<b>Total food waste - tonnes per year</b>		47	0		
<b>4. Cost of food waste</b> (based on purchasing cost alone)	Cost of food waste for this type of food service - €/kg	Percentage of avoidable food waste for this type of food service	Estimated cost of food waste for this business - €/annum		
Hotel - function	€3.38	87%	€159,000		

# Food Service – segregation levels








# Food Service – Costs savings






The touchstone  
also directs  
businesses to  
better  
management  
practices

5. How did you obtain your waste tonnage estimate for each bin type? (Reported in 3A above)

Tick all boxes that apply		Contractor's on-board weighing records	Estimated weight per bin lift (see tab 'bin lift', if needed)	Other method (please describe below)	We don't use this waste collection/ recycling service; or not estimated
Weight of food waste in brown bin		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weight of general waste		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weight of recycling bin		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Please describe any other methods used:</i>					

6. How did you estimate the percentage of food waste within brown, general waste and recycling bins? (Reported in 3B above)

Tick all boxes that apply		Carried out a compositional analysis	Visual inspection of bins	Using the national default values	Other (describe below)
Weight of food waste in brown bin		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Weight of food waste in general waste bin		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Weight of food waste in recycling bin		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Other: please describe other methods used:</i>					

# FoodSpace: A Story from the Sector



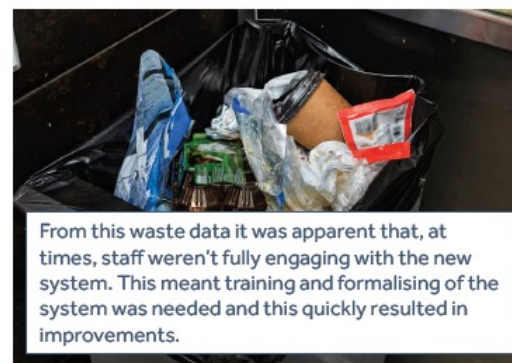
In 2016, FoodSpace took over the running four different cafes on the NUI Galway campus.



The waste management system used at these locations had been in place for 10 years and, in many ways, was no longer fit for purpose.



A new waste service contract was put in place which included weekly/monthly waste data presented in a graphical manner that allowed trends to be easily tracked.



From this waste data it was apparent that, at times, staff weren't fully engaging with the new system. This meant training and formalising of the system was needed and this quickly resulted in improvements.

Some key changes that were made...



To treat waste and food waste as an opportunity



Improve access to accurate information



Open dialogue with staff and management

RESULTS!



Improvements took place over a year and involved putting their waste data to work for them.



Working with and training staff improved environmental awareness which benefits all involved.



Linking what is being wasted to what happens inside facilitates constant improvement.



Reduced waste and saved money!

NATIONAL WASTE PREVENTION PROGRAMME  
Preventing Waste Driving the Circular Economy



Rialtas na hÉireann  
Government of Ireland



# Conclusions

Measurement is a critical first step to food waste prevention

The pathway takes it out of the kitchen and uses available info to do this

No one set of solutions for businesses – need to examine internally

Communication is key – internal and external – we need advocates

Consumer awareness is increasing

We can and **need** to do better



# DRAWDOWN

THE MOST COMPREHENSIVE  
PLAN EVER PROPOSED TO  
REVERSE GLOBAL WARMING  
EDITED BY PAUL HAWKEN



EDUCATING GIRLS / ELIMINATING FOOD  
WASTE / LOW FLOW HYDRO / SHARING  
ECONOMY / SOLAR MICROGRIDS / FUEL  
CELLS / GREENROOFS / LIVING BUILDINGS  
/ DYNAMIC SKINS / AIR HEAT PUMPS /  
KITE SAILS / ROTATIONAL GRAZING /  
SMART GRID/SMART METERS / SOLAR  
FARMS / TIDAL ENERGY / WIND TURBINES  
/ CONGESTION PRICING / GREYWATER  
SYSTEMS / HIGH SPEED RAIL / VERTICAL  
FARMING / AFFORESTATION / AVOIDED  
DEFORESTATION / BIOCHAR / BIOLOGICAL AGRICULTURE / CARBON FARMING  
/ NO-TILL FARMING / PASTURE CROPPING / BIKING / REFORESTATION /  
DEMAND RESPONSE / LOW-FLOW FIXTURES / SOLAR HOT WATER  
/ SOLAR PV / CHILD HEALTHCARE / FAMILY PLANNING /  
PYROLYSIS / ENERGY STORAGE / WHITEROOF /  
ALGAE BIOFUELS / CAR EFFICIENCY / AGRO  
FORESTRY / CENTRATED SOLAR /  
RECYCLING TRUCK BUILDING /  
INTEGRATED SOLAR /  
REFORESTATION /  
BIOMASS  
HEAT



# PROJECT DRAWDOWN

## Solutions by Rank

Rank	Solution	Sector	TOTAL ATMOSPHERIC CO <sub>2</sub> -EQ REDUCTION (GT)	NET COST (BILLIONS US \$)	SAVINGS (BILLIONS US \$)
1	Refrigerant Management	Materials	89.74	N/A	\$-902.77
2	Wind Turbines (Onshore)	Electricity Generation	84.60	\$1,225.37	\$7,425.00
3	Reduced Food Waste	Food	70.53	N/A	N/A
4	Plant-Rich Diet	Food	66.11	N/A	N/A
5	Tropical Forests	Land Use	61.23	N/A	N/A
6	Educating Girls	Women and Girls	51.48	N/A	N/A
7	Family Planning	Women and Girls	51.48	N/A	N/A
8	Solar Farms	Electricity Generation	36.90	\$-80.60	\$5,023.84
9	Silvopasture	Food	31.19	\$41.59	\$699.37
10	Rooftop Solar	Electricity Generation	24.60	\$453.14	\$3,457.63



**There's more to food  
waste than wasted  
food**

