INTERNATIONAL FOOD WASTE COALITION

Engaging with consumers to cut food waste

Findings from an experiment using social norm interventions to reduce plate waste in corporate restaurants

December 2022

Contents:

	Page
Introduction	3
The Experiment	4-8
Interviews	9-13
Next Steps	14-15
Appendices	16-18

Introduction

One of the International Food Waste Coalition's key activities is testing new solutions to reduce food waste across the value chain, including corporate restaurants.

Given that nearly 40% of food waste in the food service sector comes from plate waste, it is essential that we actively engage with consumers. Not only can this help to address the issue of leftover food, we know that consumer behaviour affects the entire value chain.

This document summarizes the findings from three actions implemented within our members' restaurants in 2022:

- analysis of plate waste in 5 corporate restaurants and 2 hotel breakfast buffets
- an intervention to display messages leveraging social norms via posters displayed in 3 corporate restaurants
- complementary interviews conducted in 2 corporate restaurants

Key Findings:

- the posters tested had no real impact on consumers' plate waste
- average plate waste measured: 57g/capita
- average non-edible / edible ratio: 17%
- 71% of consumers had no food waste on their plate
- 15% of consumers had a significant amount (>150g) of food waste on their plate
- 67% of interviewees with significant plate waste were women
- 68% of interviewees said that being served too bigger portions was the main reason for plate waste
- side dishes were the most wasted food type
- for most interviewees, being offered an option of smaller portions would be the best solution to cut waste

IFWC would like to thank Elior, Sodexo and Best Western and their teams who agreed to trial the experiment. This project has been supported by ADEME and all IFWC Members.

ONE:

The Experiment

Using social norm interventions to reduce plate waste in corporate restaurants

Context:

Consumer leftovers account for the biggest share (40%) of food waste in the food service sector. Leaving food uneaten is seen as a silent but 'normal' behaviour. European research[1] shows that classic awareness campaigns have little effect on consumer behaviour, and highlights the need for interventions which leverage social norms.

We therefore wanted to test if consumers would be willing to waste less food if whist filling their plates they were (1) reminded to "adapt their portion" and (2) that doing so is recognized as a social norm / valorized behaviour with more and more people enjoying food without wasting any.

Purpose:

To assess the impact of social and dynamic social norms on consumers' behaviour with regard to food waste. The intervention was in the form of a reminder for consumers to "adapt their portion" to prevent plate waste, together with an accompanying statement confirming that most consumers in the restaurant were already taking positive steps to prevent food waste.

Where:

- 3 corporate restaurants in France during lunch with equivalent service type (self-service and service at the counter by staff)
- 2 self-service breakfast buffets in hotels – however the experiment at both of these locations was cancelled after the analysis phases which showed a negligible amount of edible food waste (8g/guest)

When:

The intervention started in the first two restaurants on 1 March 2022 and ended in the third restaurant on 30 November 2022.

What:

- 10 days measurement of plate waste before displaying posters
- 10 days measurement of plate waste while displaying posters
- 3 types of messages on posters displayed at all main food service points so that consumers would face the message while filling their plates
- each restaurant displayed one unique message

[1] *Background report contributing to "REFRESH Policy Brief: Reducing consumer food waste" (D3.4), 2019*

Message 1:

Reminder of the virtuous behaviour

‘Adapt your portion - fight food waste’

- tested in 1 restaurant: 220 guests per day
- edible plate waste without posters: 66 g/guest
- edible plate waste with posters: + 3 %
- non-edible/edible ratio: 17%
- empty plates without posters: 60%
- empty plates with posters: 68%

Message 2:

Reminder of the virtuous behaviour associated with social norm

‘70% of guests fight food waste – adapt your portion’

- tested in 1 restaurant: 550 guests per day
- edible plate waste without posters: 56 g/guest
- edible plate waste with posters: - 7%
- non-edible/edible ratio: 14%
- empty plates without posters: 73%
- empty plates with posters: 72%

Message 3:

Reminder of the virtuous behaviour associated with dynamic social norm

‘70% in 2022 – even more of you are fighting food waste – adapt your portion’

- tested in 1 restaurant: 430 guests per day
- edible plate waste without posters: 27 g/guest
- edible plate waste with posters: +17%
- non-edible/edible ratio: 16%
- % of empty plates without posters: 77%
- % of empty plates with posters: 80%

Results & Observations

The posters had no significant impact on plate waste. We estimate that only 10% of consumers paid attention to the posters and less than 5% read the message carefully.

Food waste drivers observed during the intervention:

- consumers receiving portions that were too big for them (not paying attention when served)
- lack of consumer awareness or motivation to reduce plate waste
- lack of communication with service staff to adapt portions - this was further amplified during busy periods when queues formed at the service station, and because of covid restrictions (masks, protective screens between staff and consumers)

Plate waste levels observed

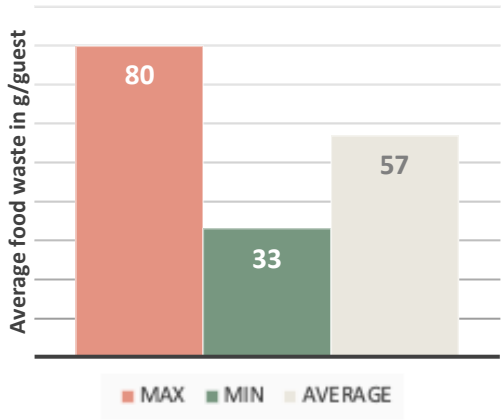


Plate waste edible & non-edible split

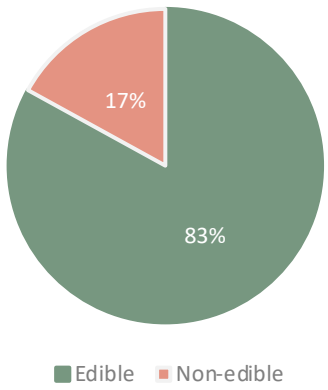
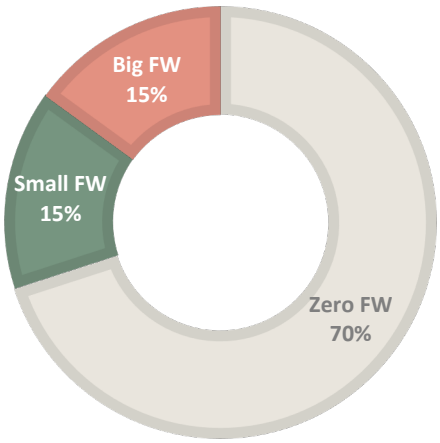


Plate waste quantities



The majority of plate waste is generated by just 15% of consumers.

Conclusions & Next Steps

The intervention with posters leveraging social norms had no significant impact. However, we can't conclude that social norms are not effective because the posters themselves were not read by consumers.

The main conclusion is that 85% of plates have no or little food waste (< 20g) and it is therefore the 15% of consumers with significant leftovers (> 150g) who account for most of the plate waste in corporate restaurants.

We can also conclude that posters displaying text and images do not provide effective communication support within the context of corporate restaurants.

These conclusions raise some important questions that need to be answered before testing improved interventions:

- Is the minority (approx. 10%) always made up of the same 'big wasters'? Could we identify targeted action(s) to help this group to not waste food?
- Or are the plates with significant food waste due to accidental factors that can affect anyone? If so, could we identify and address them?
- What communication channels with consumers work best in corporate restaurants?
- Should we combine several strategies to change consumer behaviour via one intervention?

TWO:

Interviews

Talking with consumers who generated the most plate waste

Interviews were conducted with consumers to answer questions raised during the intervention with posters leveraging social norms; we specifically wanted to know who the wasters were and what were the reasons for their leftover food.

Interview Structure:

- Male / Female
- Age (18-30; 31-50; 50+)
- What made you waste food today? (taste, portion control, time …)
- How often do you leave the amount of plate waste you have left today? (rarely; occasionally; frequently; always)
- How could this restaurant help you to reduce your plate waste? (be offered a smaller portion; ask for a smaller portion myself; provide better food quality)

Context:

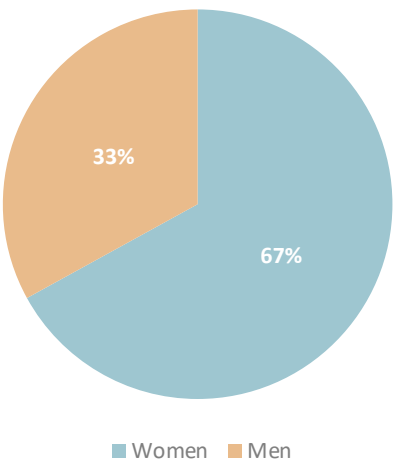
Interviews were conducted in two corporate restaurants where main and side dishes were served at the counter by the staff, with starters and deserts available via self-service. People returning trays with significant leftovers (> 150g) were interviewed.

The intervention was carried out over 4 consecutive days in the two restaurants (in Nov. 2022).

A total of 180 consumers were interviewed (90 for each restaurant).

Average results for both restaurants*:

Plate waste by gender

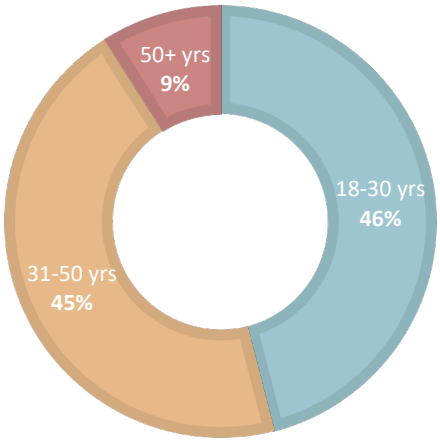


Women are twice as likely as men to generate significant amounts of plate waste.

This might be explained by the fact that some women tend to eat less than men but are served the same size portions.

* *Results of the interviews for each restaurant can be found in the appendices*

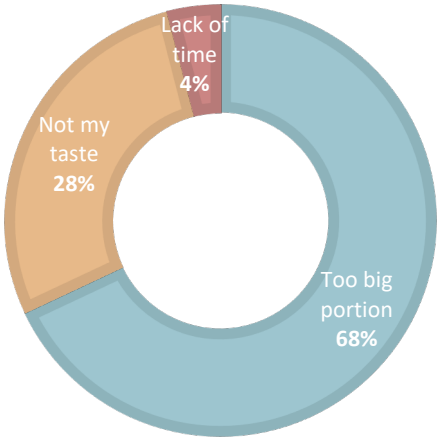
Plate waste by age



Seniors waste less food. Other age groups should be specifically targeted during interventions.

This may be because seniors are more likely to pay attention and manage the quantity of food on their plate, or have been culturally conditioned to not waste food.

Reason for plate waste



Being served portions that were too big was the number one reason for plate waste.

Consumers gave the following reasons for this:

- they did not pay attention when being served
- portions had already been served
- no time to tell the server their preferences
- their request for less food was ignored
- reluctant to cause inconvenience /delay by asking for a smaller portion

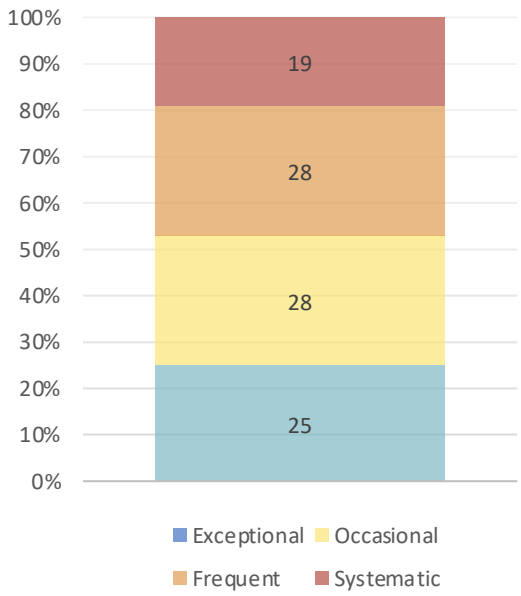
Consumers highlighted that side dishes were the main source of waste - steamed vegetables were often associated with “poor taste” while portion sizes of carbs were too big.

40% of consumers create plate waste frequently or systematically.

‘Exceptional food wasters’ said that they couldn’t gauge their appetite on the day or disliked the food they had left on the plate.

‘Systematic food wasters’ pointed out that they don’t pay attention to quantities or don’t care. Some consumers have a trickier relationship with food, having either very small or very large appetites.

Plate waste frequency



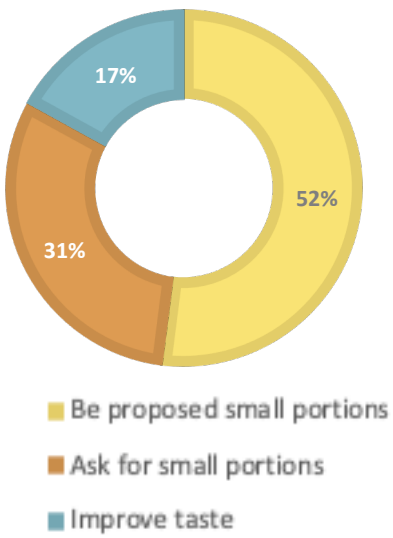
Being offered smaller portions is the best solution according to most consumers.

Whilst 68% of consumers said that being served portions that were too big was the primary cause of plate waste, most interviewees said that they don’t like to ask for less food and would prefer instead to be offered smaller portions.

However, this might not be an easy solution for restaurants as:

- it could lead to longer queues at service
- staff would have to offer smaller portions to everyone, but we know that most plate waste comes from just 15% of consumers
- smaller portions may have to be sold at lower prices

Preferred solution



Key Learnings

- Most plate waste results from consumers being served portions that are too big for them.
- Around half of interviewees said that they leave a significant amount of food on their plate frequently or systematically.
- Side dishes of carbs & vegetables were identified as the main cause of plate waste, with bland taste cited as the main reason for this food being left uneaten, particularly steamed vegetables (often served from frozen with no sauce).
- Most consumers don't manage to get smaller portions because they don't pay attention whilst being served, or communication with service staff is difficult during busy periods with long queues.

THREE:

Next Steps

IFWC actions for 2023

Next Steps

To further investigate and test solutions to reduce plate waste, in 2023 IFWC will take the following actions:

Q1	Conduct diagnosis of plate waste in hotel restaurants
Q2	Test systematic small portion offerings in corporate restaurants. The intervention might include complementary actions: • specific training for staff • work to cover motivation, opportunity and ability dimensions, specifically targeted to change frequent/systematic wasters' behavior
Q3	Deploy tailormade interventions in hotel restaurants

To be confirmed with IFWC Members:

Future research and tests might be needed to better understand the issue with steamed vegetables (taste and culinary aspects, product quality, contract requirements, portions served etc.)

Appendices

Detailed results of interviews for each restaurant

Restaurant 1

Plate waste by gender

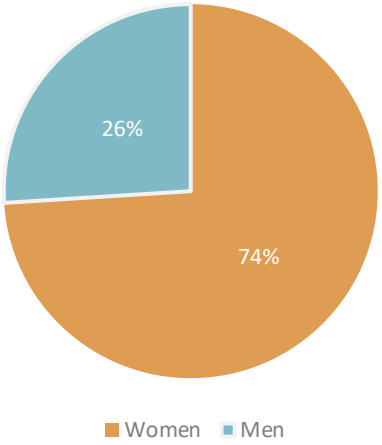
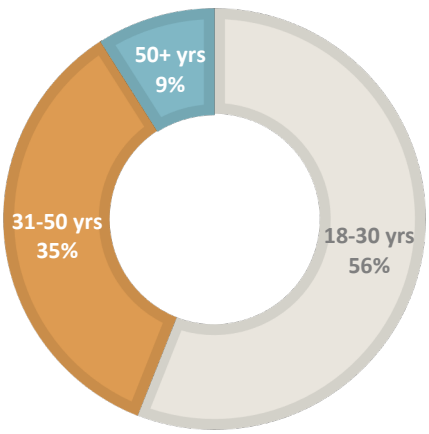
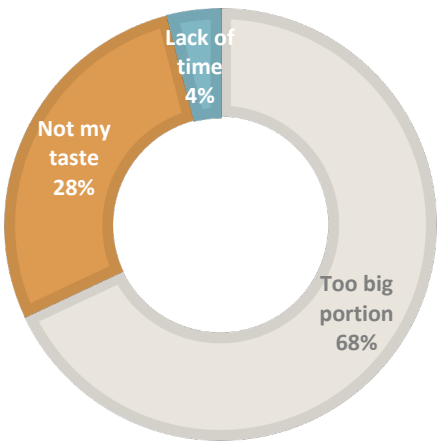


Plate waste by age



Reason for plate waste



Restaurant 2

Plate waste by gender

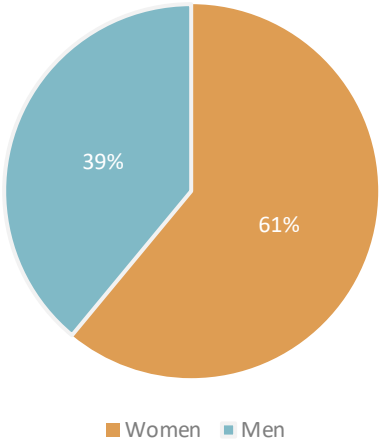
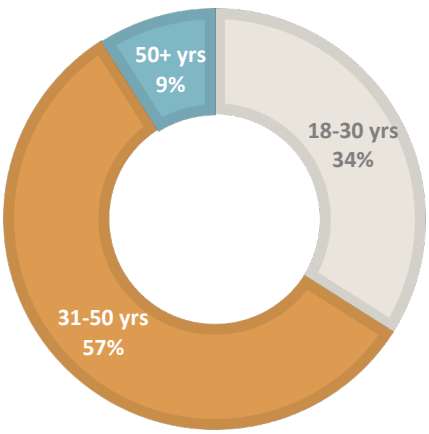
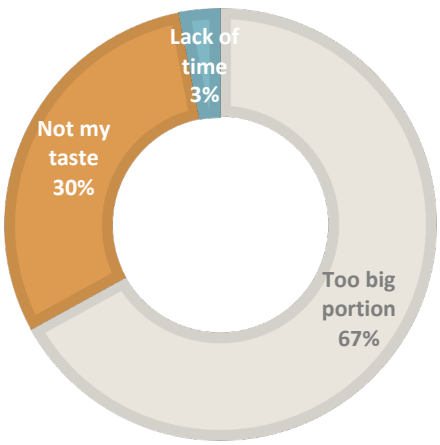


Plate waste by age

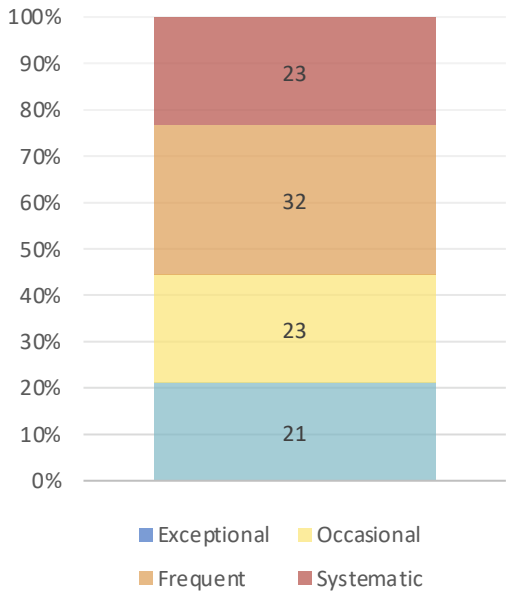


Reason for plate waste

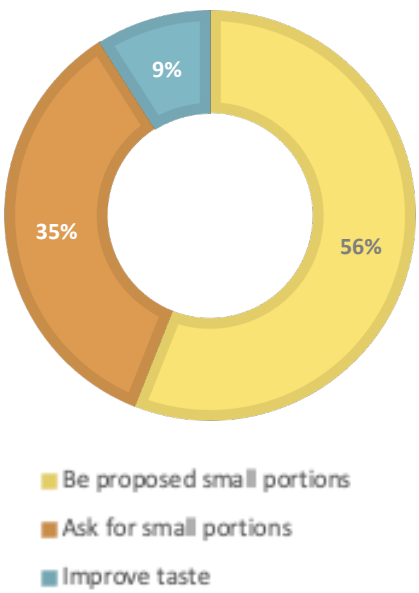


Restaurant 1

Plate waste frequency

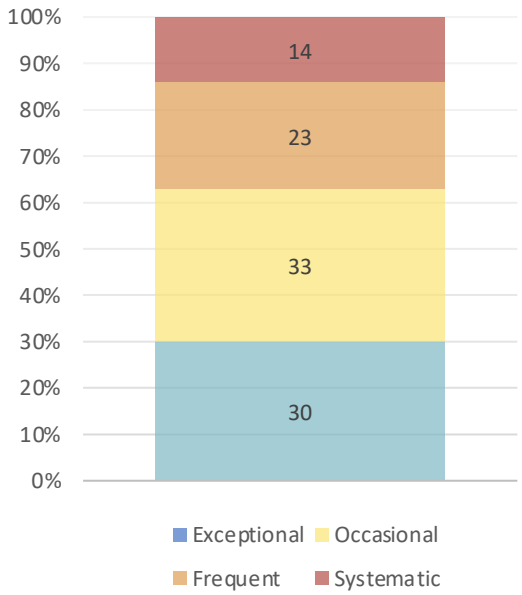


Preferred solution



Restaurant 2

Plate waste frequency



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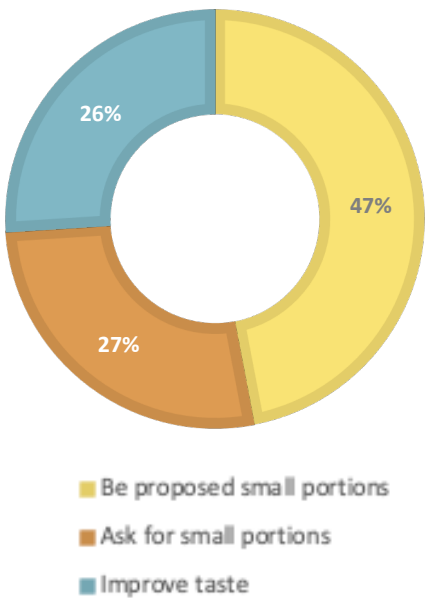

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