

Good Practices for Food Waste Reduction

Catering



Good Practices for Food Waste Reduction in Catering

Food Service and Restaurants

The aim of this guide is to shed light on the reasons of food waste production in the food service, and also to familiarise the reader with food waste categories and their economic and environmental effects. We would like to facilitate the work of employees in the catering industry with already tested, concrete, good practices to prevent food waste and to decrease the amount of food waste.

Introduction

According to data from the Food and Agriculture Organization of the United Nations, FAO, (2011)¹, one third of the produced food goes to waste at some stage in the food chain worldwide. Food waste is not only a problem on the economy, but it has also severe damaging effects on the environment.

In order to find practical solutions to the issue of food waste, it is important to inspect the actors of the food chain from this point of view. Depending on the economic development of the countries, actors in the food chain are responsible for the generation of food waste to varying degrees. In developing countries, a significant amount of food waste is generated typically during cultivation, post-harvest treatment, and storage. Meanwhile in developed countries, the greatest amount is present mostly in the phases of production, processing, distribution, and consumption.

Considering the entire life cycle of a product from the food industry, the processing phase has the greatest effect on natural resources. At the same time, each phase has additional environmental effect. This means that the cost and the negative effect on the environment will increase the later we dispose of the food.²

According to the estimation of FUSIONS regarding 28 member states of the European Union in 2016, the most significant proportion of generated food waste 53% occurs in households. Based on their data, it can be stated that 19% of food waste is generated in the processing industry, 12% in food service and restaurants, 11% in the primary production sector, and 5% in trade (*Figure 1*).³

It is a fact that households are responsible for the largest proportion of food waste in developed countries. However, the role of other sectors is not negligible; the responsibility is shared. Moreover, other actors of the food chain can have indirect effect on consumer behaviour: they can call attention to the importance of the issue with their exemplary attitude and awareness-raising campaigns.

¹ FAO (2011). Global Food Losses And Food Waste - Extent, Causes And Prevention. Rome, Italy.

² FAO (2013). Toolkit. Reducing the Food Wastage Footprint

³ FUSIONS (2016). Estimates of European food waste levels.

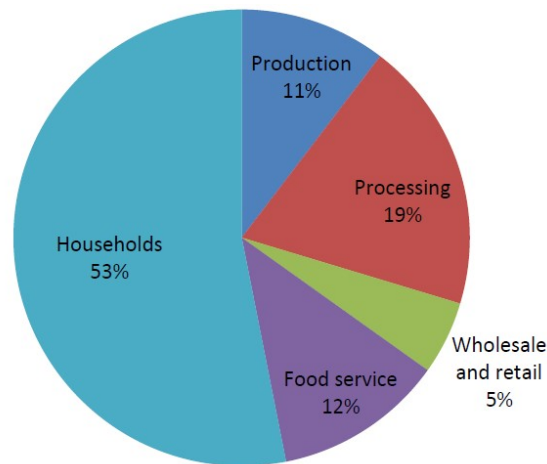


Figure 1. Sectors responsible for food waste (source:FUSIONS, 2016)

Primary data based on actual measurements was used only partially in order to prepare the estimate. In the case of food service and public catering service, 18 member states provided data, however, only 8 sets of data were proven suitable for use among them. Moreover, another issue is that the estimated figures illustrate the total amount of food waste generated in the food chain, and it does not provide information on the result of actual wasting, called avoidable food waste.

The decrease of food loss and waste means a three-time advantage for every actor of the food chain: it alleviates the pressure on the climate, water and soil; it has positive economic effect on the producers, companies and households; and it allows that more people can be supplied with the food currently produced.

Food is the result of valuable resources' utilization, which has large ecological footprint considering energy that is invested in cultivation, harvesting, transportation, production, packaging, storage, trade and preparation. Through food waste, we also waste the invested energy.⁴

There are several solutions to eliminate this. Prevention of waste is the most effective and easiest solution among these, since the later in the procession we are, the more invested energy and value will be thrown out and used unnecessarily. Through prevention, less resources and labour for additional treatment of the wasted food will be required. Instead, this energy can be invested in value-creating processes.

WASTE PYRAMID

A communication of the European Commission published in 2015 presents EU action plan on circular economy.^{5,6} In the statement's section regarding food waste, concrete commitments are made to decrease the amount of waste, which are the following:

- developing common EU methods for measuring food waste and identifying relevant indicators,

⁴Creedon, M., Hogan, J., (2010). Less Food Waste More Profit. A Guide to Minimising Food Waste in the Catering Sector

⁵ FAO (2013). Toolkit. Reducing the Food Wastage Footprint

⁶<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52015DC0614&from=HU>

- establishing a platform with the involvement of Member States and stakeholders to support the achievement of sustainable development goals for food waste and the sharing of best practices,
- clarifying EU legislation on waste, food and forage,
- facilitating the use of by-products in forage production without jeopardizing food and forage safety,
- conducting studies on the ways in which food chain operators can improve date labelling and the consumers' knowledge on it.

In its communication, the Commission emphasizes the importance of following the waste hierarchy, with priority being given to compliance with the principle of prevention.

According to directive 2008/98/EC:

“Waste policy should also aim at reducing the use of resources and favour the practical application of the waste hierarchy.” (Figure 2)



Figure 2. Waste Hierarchy

Prevention

According to § 2 of Act CLXXXV of 2012 on waste (hereinafter Act CLXXXV of 2012):

is a measure taken before the substance or product has become waste, which can reduce

- the amount of waste, through reusing products or extending the life of products, for instance,*
- the harmful effects of the waste on the environment and human health, or*
- content of hazardous substances in the materials and products*

Through measures to prevent food waste, the use of necessary resources required for food production can be reduced, and the costs associated with the disposal of waste and environmental, economic and social impacts can be mitigated.

NOMENCLATURE

Waste: according to § 2 of Act CLXXXV of 2012, any substance or object which the holder discards or intends to or is required to discard.

Biowaste: according to § 2 of Act CLXXXV of 2012, biodegradable; park or garden waste; food or kitchen waste generated in households, restaurants, at caterers and establishments engaged in retailing activity, as well as similar waste generated in food processing plants.

It is important to emphasize that Act CLXXXV of 2012 does not define food waste.

Apart from the fact that food waste is not defined on the level of policy currently, the concept is understood differently in scientific publications as well. Consequently, measurements concerning the quantity and quality of food waste are not compatible with each other. The following definitions were created as a result of the project FUSIONS in order to help the communication between each other, the unification, and the introduction of more efficient and successful solutions.

Based on the definition of FUSIONS, food waste is food removed from the food chain, so it is the total amount of food that has been thrown away. Both avoidable and unavoidable food waste belong to this category. FUSIONS does not consider food given to animals food waste, yet composted food parts belong to the category of food waste.

Avoidable food waste: raw material or meal originally intended for human consumption, which was thrown away. For example, expired yoghurt, shrunken whole fruit, thrown-out meal.

This type of food waste is in general the result of human negligence. This is the actual food waste, as its name suggests that its production could have been avoided.

Unavoidable food waste: food parts of animal or vegetable origin, which are not suitable for human consumption. For example, eggshell, bones, banana peel. Such waste inevitably arises in the food chain.

Potentially avoidable food waste: raw material or meal suitable for human consumption that was thrown away because of health reasons (such as the deterioration of chewing ability), or because of personal taste. For example, chicken skin, bread crust, apple peel.

THE REASONS BEHIND FOOD WASTE IN FOOD SERVICE

Based on a study by the European Commission, the main reasons behind food waste in food service and public catering services can be traced back to the following components (table 1). It can be stated based on the overview table that issues usually arise regarding the portion size, awareness, logistics, attitude and knowledge.⁷

Table 1: The Reasons Behind Food Waste in Food Service and Restaurants

⁷European Commission(2010). Preparatory Study on Food Waste Across EU 27

The Main Reasons of Wasting	Food Service and Restaurants		
	Hospitality Industry	Schools	Hospitals
Awareness	x	x	x
Knowledge	x	x	x
Attitude	x	x	
Preferences		x	x
Portion size	x	x	x
Planning	x	x	x
Storage			
Socio-economic factors			
Labelling	x	x	
Packaging			
Handling			
Stock management			
Logistics	x	x	x
Product quality requirements			
Technical malfunctions			

Hospitality Industry

Portion size

According to a study by Cornell University published in 2005, 92% of the portion is consumed when it was plated by the consumer himself.⁸ Greater amount of leftover is generated where the portions are measured beforehand, for instance in canteens and cafeterias. This could be prevented by changing the price in order to match the weight of the plated food.

People's needs regarding quantity differs for every individual, so it is worth trying to optimize the size of the portions. Where self-service cannot be introduced, the solution could be providing different sizes of portions.

Moreover, separately portioned and packaged items (jam, honey, mayonnaise, sugar, etc.) lead to such food waste, especially in hotels and catering units, that could be easily avoided if the consumers could find these in a central dispenser.

Awareness

Significantly higher awareness characterises those catering units that collect the generated waste separately and were confronted with the amount of food waste generated by them.

⁸Wansink, B., Johnson, KA. (2014).The clean plate club: about 92% of self-served food is eaten.International Journal of Obesity

Logistics

In the hospitality industry, the hardships of planning can be connected mainly to the everchanging needs. Where the reservation system works, it is much easier to plan and estimate the amount of order, especially in the case of perishable products. In the case of buffets, it is often expected by the consumer that everything should be available at all time. For this reason, buffets order substantially more raw materials and prepare more meal as well, than what will actually be consumed. In restaurants, it might occur that food is thrown out and the whole cooking process is started over if the food is overcooked, or other meals that were to be served at the same table are not prepared at the same time.

The changing weather can result in unpredictable guest turnover, which is often the reason behind food waste generation.

Attitude

In certain parts of Europe, it is judged negatively when someone takes the leftover home from a restaurant. However, this practice should not be judged, but especially supported, since this could contribute in decreasing the amount of food waste. Although this is a widespread practice in Hungary, its further encouragement would have a positive effect on mitigating food waste.

Schools

Attitude

Children are usually incapable to recognize the moral value of food. However, it characterises even adult people that most consumers are distanced from yielding raw materials that are used to produce food. Furthermore, they are often distanced from cooking as well, so they understand it less and less how much work needs to be invested in producing food. According to the Hungarian Central Statistical Office's data on households, time spent with cooking consistently shows a decreasing trend in recent decades in the case of age groups that play the greatest part in the upbringing of children.⁹ This could contribute to the fact that attitudes regarding food waste have changed significantly in the last period.

Preferences

Mainly those commercial production kitchens that have limited budget are not motivated to use raw materials of better quality if they cost more. This could contribute to food waste in schools, since the taste and quality of food available at school canteens have an effect on how much food waste is generated.

Portion size

Appetite might also fluctuate in the case of children, which can be influenced by many factors. For this reason, pre-determined portion sizes often lead to great amount of food waste.

⁹Time Use Survey 2009/2010, Hungarian Central Statistical Office:<http://www.ksh.hu/docs/hun/xftp/idoszaki/idomerleg/idomerleg0910.pdf>

Logistics

Studies conducted in the United States found that if lunchbreak is not before recess, but right after it, the amount of food waste can be reduced by 30%. During recess, children get tired physically as well and hungry, also, they do not hurry with eating in order to be able to go play with the others sooner.

Hospitals

Preferences

Patients at hospital have little say in when and what they eat and how big the portions are. The lack of choice paired up with low quality food often results in patients eating less than what they would actually do.

THE COST OF FOOD WASTE

Since the concept of food waste is understood differently, the studies with quantified data available have particularly different methods. For this reason, it is difficult to estimate the cost of food waste. When doing such calculations, it is important to have data from robust and comparable methods.¹⁰

As processing progresses, more and more resources are used, and this obviously shows in the price of the products.

Since the sector of food service and restaurants is situated at the end of the food chain, therefore, the added value of a unit of food is relatively high. Obviously, the food per unit weight is the highest in the case of food wasted by the consumers, the cost of the waste of food service and restaurants is on the second place. This means that the sector generates food waste amounting to 980,000 Hungarian Forints, which is included in the average of European countries, which is approximately 10300 billion Hungarian Forints per year.

The study conducted by the Sustainable Restaurants Association in 2010 regarding food waste highlighted that an exploratory event helps in the understanding of the composition and source of food waste and the reason of its generation. Restaurant participating in the event initiated such smaller changes that can be found in this guide as well. These simple solutions resulted in instant saving, because less food was purchased. The decreasing amount of food waste also meant the decrease of garbage collection fee, so they had the opportunity to sign a more favourable contract with the waste management company. In total, the participating restaurant saved 2,500 Pounds per year due to the decreased garbage collection fee.¹¹

¹⁰ FUSIONS (2016). Estimates of European food waste levels.

¹¹ FAO (2013). Toolkit. Reducing the Food Wastage Footprint (Page 38)

GOOD PRACTICES

Good practices to prevent food waste and to mitigate its effect can be partially found as additional information in “Guide to Good Hygienic Practice of Food Service and Catering Services.”

PRELIMINARY ASSESSMENT

In order to assess the issue precisely, it is recommended to the catering units to store the generated food waste separately and to measure different waste types one by one. The measuring can only be conducted in units where it does not increase food safety risk and does not prevent the compliance to personal and occupational hygiene standards. It is advised to conduct the measuring at least once a year, and to aim for a one-week-long period. Naturally, more measuring per year and longer measuring intervals can result in a more precise picture. It is important to choose a week that is representative of the full year of operation. The measuring can be conducted in the most practical way with a scale set up for this reason, but in the case of liquids, volume measurement can be conducted as well. Volume and mass can be brought to common denominator on the basis of the density of liquids. We can use the density value of water, as it is ca. 0.98 kg/l (rounded to 1 kg/l) at room temperature (further information: FAO/INFOODS Density Database Version 2.0 (2012)). If the weight of food waste generated in a week is extrapolated to the full year, we can get a clear picture of the actual amount of food wastes generated. It can also be a helpful feedback if the food waste is documented by type, so on the basis of the repeated measurements, we can statistically analyse which food types or ingredients are regularly thrown out. Experiences show that the measuring process itself and the knowledge of the annual volume of food waste generated improve the awareness of the employees.

It is worth organizing the measuring to pose no food safety risk and to mean no excessive burden on the employees, but at the same time, to provide sufficiently detailed results in order to successfully reduce waste. The simplest systems might be suitable to track the amount of food waste. If we do not have the necessary tools or space, we can keep track of the estimated quantities on paper as well. Such results can serve as guidelines to shape work processes in order to mitigate food waste.

The person responsible for carrying out the measurement and filling in the tables must be named and provided with all the necessary information. To design and conduct the assessment, the sample tables in the attachment can be used. Tables can be customized to fit the individual, the catering unit, they can be modified and combined.

To collect and select waste and to measure its weight and volume, appropriate tools and clothing must be provided, such as weighing scale, rubber or work gloves, coat, apron, etc. Food safety aspects must be taken into account while using and storing these (spatial separation of wastes from storage of raw materials and food preparation areas, separation of tools in contact with waste from tools used to prepare food, dressing, personal hygiene measures).

Automated food waste tracking systems already exist, which can be used by catering units to reduce waste significantly. Their specialty is that they can be programmed to include the prices of raw materials, on the basis of which a more accurate analysis of economic losses can be realized.

STRATEGY DEVELOPMENT

When the preliminary assessment has been finished and evaluated, the process of developing the strategy might begin. The first step is to set such goals concerning the prevention of food waste that are realistic, but still make a real difference, and possibly means an economic advantage for the company as well.

Such goals might be:

“Reduce the amount of food waste generated by the company by 10% within 5 years.”

“I am improving the awareness of my consumers and customers to reduce food waste, so that 5% less leftover is generated over a year.”

After formulating the goals, the real planning can take place, the result of which is the assignment of tasks to the formulated aims. It is also favourable to determine the main intermediate steps and their deadlines (milestones). It provides motivation during the long term work, and also helps to track the progress.

The process of preparatory activities to reduce the amount of food waste consists of three steps, as illustrated in Figure 3. Based on the results of the preliminary assessment, we can determine realistic goals for our catering unit, which is a prerequisite for developing the strategy.



Figure 3. Three steps of the process of preparatory activities

If possible, the action plan should be elaborated in a working group. Among the members of the working group, there must be people who, in their daily work, have a direct relationship with the process of generating food waste. Effective solutions can best be found on the basis of personal experience. When solving a problem, it is worth reconsidering the process of becoming abnormal and its reasons. This is accomplished by a series of answers to the question “Why?”. As many questions can be asked as it is needed to find the main reason (Related chapter: Appendix I, tables for assisting the measurement of food

waste).¹² Colleagues should also be aware that constructive criticism is helpful and allowed, as this is also a tool for effective development.

It is a highly important question to be motivated to achieve the goals. Motivations can range from moral factors through factors in performance measurement to direct financial benefits (for example, reinvesting part of the savings from less food waste after a closed period into personal payments). Only this is how it can be expected from the participants of the working group to form relevant ideas. For the whole organization, it is advantageous to have regular communication with team members, which can make a significant contribution to the personal commitment of the employees (Related chapter: Training and Development of Workers). Recommendations arising must be considered by the management of the company, in terms of enforceability and economic aspects, before the final decision is made. Efficiency can, however, be achieved if the plan that has been accepted is known by all employees and is committed to implementation in some way.

It is not enough to achieve the goals and to execute the planned optimization of the processes, the results must be sustained, so the changed must be controlled, measured, analysed, and in certain cases, intervention is required as well. This is a circular process that consists of planning, implementation, control, and intervention. The combination of the four processes is called the PDCA (plan, do check, act) cycles (Related chapter: Appendix I, tables for assisting the measurement of food waste).

MENU AND SUPPLY PLANNING

During the designing of the menu, the work plan and menu of the catering unit are set up for a defined time period. It can be used to plan the purchase, use, and distribution of raw materials and the utilization of leftovers.

Try to create a menu so that the ingredients can be used in more than one meal! This is particularly important in the case of perishable ingredients. For example, cooked rice as side dish can also be used in desserts, such as rice pudding. Pancakes can be offered as main dish as well filled with vegetables, not just as sweet dessert. The ingredients of the vegetable filling can also enrich our vegetable soup.

If possible, adjust menu according to the current season. By experiencing seasonal needs (e.g. warm soups in winter, cold soups in summer), we can achieve economic benefits not only by satisfying consumer desires, but the raw materials also change faster, and the chance of expiring is also lower.

It might be beneficial to have fewer items on the menu: less material is needed this way, which is easier to trace, so there is less chance of expiring. The optimum between the number of meals on the menu and the needs of consumers should be found.

PROCUREMENT

In this step, catering units seek to meet their needs for different products; particularly raw materials, processing aids, and additional equipment. There must be a continuous link between procurement and the rate of consumption. By using a clear, transparent, reliable

¹²Martichenko, R. (2013). Everything I know about LEAN I learned in first grade

procurement and warehousing system, this process runs smoothly, and the resources released here can be redirected to other areas.

If it is possible to book a table or pre-register unique events, the amount of food to be purchased can be estimated more accurately, with the help of which over-ordering, leftovers, and waste can be reduced.

If there are too many ingredients ordered, freeze the extra materials, and use it later – preferably as soon as possible.

Such surplusesshould be frozen in small packages, portions, in order to avoid the reoccurrence of surplus.

The aim should be as few surplusesas possible to stop the freezer from turning into a “storage.”

If it is known that the food that is not served, but impeccable regarding food safety, will not be consumed in the catering unit within the expiration date, ways to transfer it to people who will consume it should be found (according to the next level of the waste pyramid), ensuring that this is achieved through a secure and reliable channel. This can be done through promotional sales (for example, discounted meals before closing time, web and mobile applications dedicated to this aim) or with the help of trusted and registered charity organizations.

The items delivered to the catering unit should be checked regularly to avoid any future waste arising from possible quality issues.

STORAGE

Storage is a process for storing, preserving raw materials, processing aids, and additional equipment, and for accumulating stocks.

Raw materials and meals must be stored under the predetermined conditions to avoid the need to dispose of the products prematurely.

During utilization after storage, the principle of FIFO (First In First Out) or FEFO (First Expired First Out) must be followed. During FIFO, the raw material arrived the earliest to the unit should be used. During FEFO, the product with the nearest expiration date should be used.

FOOD PREPARATION

Food preparation is the preparation of products suitable for direct consumption – including confectionery and cold kitchen products – in producing premises from prepared raw materials with kitchen operations (especially cooking, steaming, baking, thickening, loosening, flavouring, seasoning, shaping, cooling, heating, dispensing) or with their partial operation.

By complying with compulsory hygiene rules, we meet not only the requirements of food safety, but we also prevent the emergence of food waste. Wearing a hairnet is a good example

of this, because the consumer, if he finds a hair in the prepared meal, sends it back or leaves it.

Get employees ready for taking orders accurately, attentive listening and interpretation of feedback, opinion, and needs (including health needs) of the guests. This can significantly reduce the amount of food returned.

It is advisable to avoid unnecessary removal of fatty tissue from raw meat (especially when larger amounts of muscle tissue are also cut off at the same time). If it is already removed, it can be processed into other foods, under strict consideration of food safety aspects, in accordance with applicable rules. Excessive peeling of vegetables and fruits should also be avoided, since not only hygienically concerned parts are removed in this case, but also the valuable parts.

Reducing the amount of fats needed to use will require less used oil to be discarded. For this, the optimal quantity must be determined in advance and then compliance is required to the established value. Filter the oil between the frying phases to remove the settled parts, in order to use it for a longer period of time. In many cases, substances that are hazardous to human health accumulate in used cooking oils. Appropriate test kits are recommended instead of examination with the naked eye to decide when the replacement of cooking oil is due.

PRESENTATION, SERVING

The providing of ready-to-eat food, meal, seasonings, and tools for eating for the consumer.

If we serve less bread and offer smaller quantities of appetizers, the appetite of the consumer will not be damped at an early stage, so the main course can be fully consumed. Colourful, tasteful, and harmonious eating conditions result in less leftover, which is especially important in food service for children.

If it is found that it would generate less food waste, it is recommended to ask the guest before serving sauces, dressings, and seasonings (e.g. ketchup, salt, sugar) whether or not they would like to have them and how much. Significant amount of provided sauces and seasonings remains, and after eating, the consumer tends to throw out the still sealed sauce along with the napkin. Also, sugar cube that has been already served but not consumed cannot be re-served.

Package for take away or for fast food services, it is recommended to use polylactic acid (PLA) packaging. PLA is a biomaterial that is biodegradable and compostable. Cutlery, cups, cup lids, bottles, trays, and other containers are also available. Suppliers can be asked for help in this area.

SERVING SPACE

Serving space is such place where meals are served and consumed.

If the serving and consumer space are crowded, most of the guests are trying to finish the meal as soon as possible, resulting in more leftovers. Another consequence of overcrowding is that the consumer will not have the patience to get the leftover packed, which also results in food waste. Therefore, it is recommended to prevent overcrowding at the planning stage of the catering unit, and later, the reorganization of the consumer space may be considered if it is justified.

PORTIONS AND SIDE DISHES

Meal and side dish served to the consumer, as well as their size or volume.

Observe the consumption habits of the guests. If there is usually much left on the plate, smaller portions might be required. The waiting staff should inquire about the reasons of the leftover and pay attention to which food are left on plate most often. Concerning the part entitled Preliminary Assessment, it is worth measuring the amount and type of food waste generated by consumers for a week. A table related to this can be found in the Appendices.

The same amount of food seems to be more on a smaller plate. It has been observed that those who choose smaller plates deem less than average amount of food enough. For self-service and “All-you-can-eat” restaurants, it is especially worth introducing plates with smaller diameter, because the portion of food seems significantly smaller on a plate with larger diameter, which often leads to leftovers.¹³

If possible, provide a children’s menu.

Optionally provide smaller portions at a lower price. Set such portion-price combination that does not mean a loss for the company, but at the same time the consumer considers it reasonable, so he is more inclined to choose the right portion for his actual needs.

TRAINING AND IMPROVEMENT OF EMPLOYEES

Raising the awareness of employees is of chief importance, especially if they are in direct contact with consumers. Employees should be aware of the problem of food waste both on macro (regarding global economy, energy waste, and environmental effects) and micro level (catering unit, household) as well. Not only social benefits, but personal gains should also be highlighted. Strengthen the engagement of employees to prevent food waste.

It is important to prepare employees for taking orders accurately. By meeting the consumer’s specific needs, we not only keep the consumer and get a positive opinion, but we also prevent food waste.

It is advisable to draw the attention of the employees that they should inquire in the case of leftovers, whether or not the consumer would like to get it packed. Many people do not ask for this service because they are afraid of being considered petty. Therefore, it is important to let the consumer know that taking leftovers home and consuming them there is natural and also beneficial regarding environment protection.

If the answer is yes, it is recommended to provide the leftovers in degradable, recyclable packaging. Although this does not directly reduce food waste, it does serve sustainability goals and encourages customers to be environmentally conscious.

Employees should be prepared to attentively listen and interpret consumer feedback and opinion. This also helps the catering unit’s optimal operation and the prevention of food waste.

¹³Van Ittersum, K., & Wansink, B. (2011). Plate size and color suggestibility: the Delboeuf Illusion’s bias on serving and eating behavior. *Journal of Consumer Research*, 39(2), 215-228.

Knowledge and practices to prevent food waste generation should be handed over to employees. Leaders need to set a good example, because if employees feel that their superiors identify with sustainability goals, they are more likely to accept that more attention needs to be paid to the steps at which waste can be generated.

RAISING CONSUMER AWARENESS

Raising the awareness of consumers should also be emphasised, since surveys show that consumer behaviour is extremely responsible for food waste to a great extent. Strengthen the guests' commitment to preventing food waste. In Hungary, more and more consumers recognize the importance of sustainability goals, so if the company credibly represents these values, the loyalty of our guests sensitive towards this cause can be enhanced.

Communicate that the endeavour to decrease food waste is an important task, and if the guest is eating at our catering unit, he is a part of this responsible activity. Inform the consumer about what the company do to reduce food waste and that availability of certain foods is limited, because each meal is prepared only in a determined amount that, based on experiences, is going to be consumed in order to decrease food waste. The commitment of the catering unit can be indicated on the menu as well.

Highlight why this aspiration is beneficial to the consumer. In addition to sustainability, it may be an important argument that we do not have to calculate the cost of food waste into the price. It was already mentioned that it is worth informing the guests that it is not impolite to ask to pack the leftover, but rather a right and conscious behaviour.

Experience shows that the consumers' awareness in the case of self-service restaurants can be improved by not only having to take the tray back, but by having to place the leftovers in the garbage can themselves.

CHECKLIST

Using the Food Waste Prevention Checklist can help the catering unit to prevent and reduce the generation of food waste connected to its operation. Example can be found in Appendix II.

Supplementary table with examples: to determine the type and quantity of food waste occurring, the possibility of avoidance, and the cause of the occurrence:

Type of food waste	Amount		Avoidable? Yes/No	Reason of occurrence
	Weight (g)	Volume (dl)		
<i>Apple peel</i>	<i>200</i>		<i>N</i>	<i>Preparation</i>
<i>Fat cut off meat</i>	<i>50</i>		<i>Y</i>	<i>Preparation</i>
<i>Used oil</i>		<i>8</i>	<i>N</i>	<i>Used</i>
<i>Leftover</i>	<i>300</i>		<i>Y</i>	<i>It was too much</i>

APPENDIX II.

FOOD WASTE PREVENTION CHECKLIST

Please mark the cells describing the current state clearly.

	FOOD WASTE PREVENTION CHECKLIST	Yes	No	N.A.
1.	Do the company conduct a survey of the amount of food waste generated at least once a year for a week?			
2.	Do the company conduct a survey of the composition of food waste generated at least once a year for a week?			
3.	Do the company conduct a survey of the reason of the generation of food waste at least once a year for a week?			
4.	Are there adequate tools to measure the amount of food waste produced by the catering unit?			
5.	Does the catering unit have adequate storage facilities to store tools used to measure food waste?			
6.	Is a food waste tracking system integrated into the IT system used in the catering unit?			
7.	Do you use a paper-based food waste tracking system in the catering unit?			
8.	Do you calculate the amount of material loss food waste mean for the restaurant per year?			
9.	Do you calculate the annual environmental impact of food waste that can be linked to the operation of the catering unit?			
10.	Is the knowledge of the prevention of food waste included in the training of new workers?			
11.	Is the knowledge of the prevention of food waste included in the regularly repeated education and training of workers?			
12.	Are there good practices available for food-based utilization of edible by-products of raw material processing (e.g. fatty tissue, vegetable residues)			
13.	Does the catering unit have a procurement and logistics system that contributes to the prevention and reduction of food waste generation?			
14.	Does raw material expire often due to excessive inventory accumulation?			
15.	Does the catering unit apply the FIFO and FEFO principle while using stocks?			
16.	Are good practices available for using missed small amounts of raw materials?			
17.	Is it possible to preserve unused raw materials for your own use?			
18.	Do you make sure that the ingredients can be used in more than			

	one meal when compiling the menu?			
19.	When compiling a supply, do you make sure that your meals match the consumer needs associated with the current season?			
20.	Is it possible for guests to get their leftovers packed?			
21.	Do you use biodegradable packaging materials in the catering unit to pack the leftovers?			
22.	Do you ask the guests why they have leftovers on their plate?			
23.	Is it possible for a guest to choose smaller portion?			
24.	Is it possible to book a table in the catering unit?			
25.	Is the emphasising of sustainability goals included in the communication of the catering unit to raise consumer awareness?			

Date:

Checking carried out by:

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