

Chapter 1: Kitchen Organisation in the HoReCa

Introduction to Kitchen Organisation in HoReCa

The HoReCa industry, as an element of food systems that directly interacts with diversified units of the food supply chain as well as with a final consumer, plays an essential role in contributing to the positive implementation of sustainability practices in the food sector. The challenge is not only to recognise the necessity for sustainable changes, but also to examine every step of activity model in businesses to identify weak spots and take actions to introduce sustainable solutions. Without the contribution and dedication of HoReCa organisations, a change to more sustainable food system will not take place.





Introducing a zero waste approach to the HoReCa business should be conducted gradually and holistically – in all units and at all levels of the hierarchy. However, as the kitchen is a major link that contributes to food waste, which in turn compounds a significant part of general waste volume in most catering businesses, it's a good point to start from. **The first step in the beginning of a successful transformation of the kitchen into a zero waste space is to understand the processes that run in it, and the impact they have on the level of general business' sustainability.**

Only when enterprises understand what are the areas that they need to change, they will be able to improve. Admittedly, not every stage of food production chain can be directly influenced by the HoReCa entities, however their sphere of impact extends while they start assessing their choices in areas such as sourcing, purchasing, preparation and consumption considering the perspective of sustainability. Therefore, it is crucial to build awareness of zero waste philosophy and sustainable kitchen operations, so that businesses in the HoReCa sector start developing and executing their own sustainable policies.

Objectives

After completing this chapter, you will:

- Gain an understanding of how to introduce sustainable operating practices into the organisation of the kitchen in HoReCa business;
- Become aware of real-life examples of zero waste practices in kitchen organisation in HoReCa businesses;
- Become aware of and be able to demonstrate sustainable sourcing strategies;
- Gain an understanding of the negative impact of unsustainable kitchen practices on the organisation, local economy and the environment.

Unit 1.1 - Introducing zero waste practices to kitchen organisation

Introducing a zero-waste approach to the organisation of the kitchen in HoReCa businesses requires a good understanding of current practices. Managers and business owners are often not only unaware of the sustainable solutions available and objectives they should (and could) aim for, but also don't realise what is the actual state of their sustainable performance.



Unit 1.1 - Introducing zero waste practices to kitchen organisation

Regardless of the type or nature of the HoReCa unit, the major challenge related to kitchen organisation from the perspective of a zero-waste approach is the amount of food wasted. Reducing food waste in the kitchen and serving area of any HoReCa business has a potential to drastically contribute to general improvement of the implementation of zero waste, as it helps to build awareness of the impact, benefits and costs of sustainable solutions for organisations. The adage ‘what is measured can be managed’ holds true regarding to this issue as well, showing that the **first phase in the procedure to introduce zero waste approach to the kitchen organisation in HoReCa business should be to measure current food waste (World Resource institute, 2019). The tool that can facilitate this is a food waste audit.**



Unit 1.1 - Introducing zero waste practices to kitchen organisation

Conducting a food waste audit for a kitchen in a hotel, restaurant or catering business aims to provide required data and information on the specific type of waste generated, its general volume, origin and cost associated. A great advantage of the food waste audit for the organisation is that it successfully helps to map specific areas of kitchen organisation and their impact on food waste generation. More importantly however, it reveals the waste, that is usually not immediately noticed neither by kitchen staff nor managers. In addition, the results of the audit constitute a solid base for calculating costs related to food waste, and support development of cost-efficient purchasing strategies in the future. **The procedure of a food waste audit covers four steps** that incorporate processes beginning from measuring the waste volume to raising awareness of a zero-waste approach among staff and customers. These four steps are (International Tourism Partnership, 2014):

- **Measuring the food waste.**
- **Developing action plan.**
- **Reviewing progress on regular basis.**
- **Promoting good practices internally and externally**



Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 1 - preparation to conduct a food waste audit

The preparation phase should involve the selection of a leader of the audit initiative. It can be a manager, a chef or any employee with authority to reorganise routine processes and monitor the level of other employees' tasks fulfilment. **Firstly, the leader should decide the timing and duration of the audit.** In order to receive accurate results, it is recommended that the food waste audit lasts one week (minimum three days) and is conducted during a period of regular kitchen activity. **Next, the leader should create a communication plan** to introduce to the staff responsible for implementing the audit, and to inform employees about the plan to inventory waste generating activities.



Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 1 - preparation to conduct a food waste audit

The leader should inform all kitchen workers and serving employees about the duration of the food waste audit, the planned changes to routine practices, and ensure that everyone understands his or her role. **The recycling strategy for all other non-food waste should be introduced**, in order to ensure that waste such as plastic, cardboard, glass etc. will be stored in separate containers to that of food waste. **If necessary, a training plan for all employees should be conducted**. The leader of the food waste audit should remember that the activity will be more effective, when the preparation phase has been properly introduced.

(Sustainable Restaurant Association, 2019)



Unit 1.1 - Introducing zero waste practices to kitchen organisation

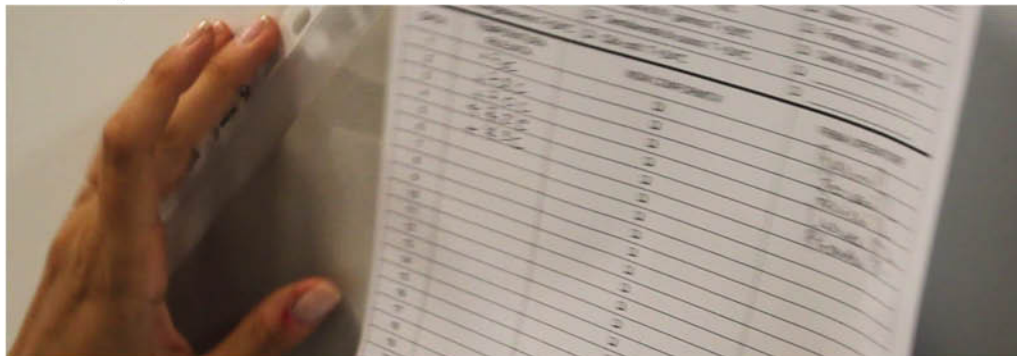
Phase 1 - preparation to conduct a food waste audit

Another element that should be taken into consideration in the framework of the preparation phase is developing necessary audit documentation. The documentation should include the following (Sustainable Restaurant Association, 2019):

- A detailed description of the waste storage strategy for the duration of the audit. (The strategy should be available for all involved staff before the audit begins.)
- Food waste tracking sheet.
- Food waste cost calculation sheet.
- Action plan sheet.

There are various methodologies that can be applied in the process of measuring the food waste and calculating the cost of waste. Below, there is presented an example of the best practice from the perspective of effectiveness of the measurement and data accuracy.

Templates of the food waste tracking sheets and food waste calculation sheet that can be applied in alternative popular methodologies are available as attachments to this chapter. They can be used as draft templates by a leader of the food waste audit, to be adapted with consideration for specific requirements of his or her organisation, region or country.



Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 2- measuring food waste

Once all the necessary documentation is developed, and all employees have been introduced to the plan for a food waste audit, the next step is to measure the amount of food waste generated. **The procedure of measuring food waste should start from removing all single waste and general waste bins from the area where the audit is being conducted** (accept from kitchen, the audit may also cover serving area, bar, breakfast room etc.).

Three types of bins dedicated to food waste should be set up – one for preparation, one for spoilage and one for plate waste. Depending on the size and the setup of the kitchen, more than one bin from each type might be needed. **All the bins should be weighed every day and the resulting measurements should be reported on the food waste tracking sheet.**

Spoilage waste involves products that has gone off or has been contaminated; it also involves for example products that spoiled in storage.

Preparation waste involves leftovers from menu preparation and cooking such as trimmings, peelings, cooking errors, unserved food etc.

Plate waste is a food waste from the customers plates.

Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 2 - measuring food waste



This will allow the auditor to monitor where the food waste comes from, and what is its exact amount. In addition, it can be beneficial to record on a separate sheet the type of the food waste that is coming back from the dining area – this may provide insight on the sizing of portions and favoured constituents of proposed menu. **Additionally, the liquid food waste, such as liquids and residuals from plates, liquid used in cooking that usually is pure into the drain should also be included in the process of food waste audit.** Depending on the approach used by the food waste audit leader, the liquid food waste can be measured separately or attributed to its origin e.g. preparation or plate waste.

(International Tourism Partnership, 2014)

Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 2 - measuring food waste

The templates of the food waste tracking sheets are available in appendices 1.1.1 and 1.2.1 of this chapter. These tracking sheets present alternative methods of measuring food waste and can be adapted to use in various methodologies of food waste measurement.

Once, the waste tracking sheet is completed, it's finally time to calculate the cost of waste generated. The calculation activity allows the auditor to analyse the results of the food waste audit in order to measure the cost of waste per week, over a year. If access is available, actual data from disposal costs should be used.

(International Tourism Partnership, 2014)

The basic calculation can be conducted by introducing the results of measurements to the cost calculation sheet available in appendix 1.2 of this chapter.



Phase 3 - developing an action plan

The third step in conducting the food waste audit is developing targets for food waste reduction and recycling. It's recommended to start with prioritising the areas of kitchen operation that generated the most waste in phase 2. The results of the audit will be helpful here. **The leader of the food waste audit with cooperation from the organisation's manager, chef and in consultation with kitchen and serving personnel should decide on objectives to be achieved and the timescale to do it.** It is important to remember, even if the targets are ambitious, they should always be realistic!

Multiple sustainable recommendations for kitchen organisation in HoReCa industry have been already developed by various institutions and organisations. Below are presented examples of zero waste practices on management and employee levels in relation to various areas of kitchen organisation (Hortec Hospitality Europe, 2017):

Management level	Employee level
Product choice/purchase	
<ul style="list-style-type: none"> Introduce or improve the strategy of measuring or predicting the expected number of customers Clear communication to the suppliers of the needs or expectations regarding the products (e.g. avoiding oversized vegetables or bruised fruits etc.) Check if the packaging of the products is intact and not damaged, that the shelf life is appropriate etc. Monitor performance of the staff in terms of their level of implementation of zero waste 	<ul style="list-style-type: none"> Adjust the quantities of products ordered to the expected number of customers Control the quality and adequacy of the products provided by the managers responsible for supply with the needs

Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 3 - developing an action plan

strategies	
Storing of products	
<ul style="list-style-type: none"> Introduce adequate storing strategy e.g. the FIFO (First in First Out) or FEFO (First Expired First Out) If necessary, train kitchen employees in storing strategy applied Train all kitchen and service staff in effective hygiene standards Monitor the need to keep over-ordering to a minimum. Monitor performance of the staff in terms of their level of implementation of zero waste strategies 	<ul style="list-style-type: none"> Monitor the products in stock on a daily basis Apply storing strategy introduced by the management team in order to avoid waste Introduce storing strategies that help extending shelf-life e.g. under-vacuum, deep freezing or cook & chill Strictly respect the cold chain process Apply labels to ensure every product can be located when needed and the shelf life is being monitored
Food preparation and cooking	
<ul style="list-style-type: none"> Introduce the half portion option to the menu Manage customer expectations by preparing and serving dishes exactly as described on the menu Provide proper kitchen equipment Provide necessary training to the kitchen staff Monitor performance of the kitchen staff in terms of their level of implementation of zero waste strategies 	<ul style="list-style-type: none"> Favour flavours and nutritious values over quantities Calculate the quantities needed for the recipes Use a good practice strategy based on having all the necessary ingredients measured, cut, peeled, sliced etc. before start cooking Avoid unnecessary trimming Try to use all parts of the products if possible Use different cooking techniques for the same product (e.g. vegetables), in order to include it in different forms in different dishes Use leftovers for preparing bouillon, soups, etc.
After the service, residual food and recycling	
<ul style="list-style-type: none"> Offer staff meals – use products that are close to expiry date, unsold products or leftovers from the menu that are still good for consumption Consider donating food leftovers Regularly monitor food waste 	<ul style="list-style-type: none"> Encourage guests to take any of their leftover food home with them

Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 3 - developing an action plan

Once the targets have been set, the managers should calculate the cost of the changes planned to be introduced, in order to realistically assess the effectiveness and adequacy of their implementation. One of the factors to take under consideration while establishing and prioritising objectives is, that some improvements will be possible to implement immediately and with no need for major investments or work routine reorganisation, while others will require longer time and more capital. Another valid factor to consider is to analyse what level of the food waste hierarchy model the changes relate to. The focus should be directed to those actions that are found at the top of the hierarchy model as they are most environmentally and economically valuable.

(International Tourism Partnership, 2014)



Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 4 - reviewing progress

Completing the food waste audit at the beginning of the endeavour to introduce zero waste solutions to a HoReCa organisation is essential in order to understand what the organisation's starting point is. However, it is equally critical to monitor the progress of set targets. **The audit leader in the HoReCa organisation should keep an ongoing record on how the food waste generation rates are changing.** A good practice could be to perform the food waste audit every quarter or every six months. Moreover, it is recommended to regularly talk to kitchen and serving staff and gather their feedback on progress being made and challenges being faced. This can help to keep members of the team engaged and motivated.

(Green Steps, 2016).



Unit 1.1 - Introducing zero waste practices to kitchen organisation

Phase 5 - promoting good practices internally and externally

Involving staff, suppliers and customers at every level of the proceedings to introduce zero waste policies is essential for creating the sense of common responsibility in achieving the objectives. Understandably, sharing the first results of audit analysis with customers may not always be desirable but keeping employees and suppliers up to date with results doubtlessly contributes to building the atmosphere of integrity. When data and information showing progress are available, presenting it to consumers can contribute to creating positive business image and increasing loyalty to the brand. Informing customers about the benefits of the introduced changes and how these changes can affect their experience may bring even more advantages.

(International Tourism Partnership, 2014)



Unit 1.2 - Sustainable food sourcing strategies

The essence of the topic of sustainable food sourcing strategies for hotel, restaurant and catering entities is related to the impact of their food supplies on the environment. Naturally, food industry providers operate with much bigger quantities of products and ingredients than regular households, that's why the influence of their food supplies on the ecosystem is crucial. **Negative impact of food chains in HoReCa organisations can be monitored by estimating and controlling menu's carbon footprint and food miles.**



Unit 1.2 - Sustainable food sourcing strategies

Nowadays, sustainable sourcing strategies are increasing in their importance not only for businesses but also for governments around Europe, as due to extreme weather events the fear of shortages of some types of food more often becomes reality.

To achieve food sustainability, multiple sourcing strategies should be applied. **First and foremost, wherever possible food should be sourced locally. Creating networks with local producers and suppliers is essential. When buying from wholesale, it is advised to ask where suppliers are sourcing their products from and request more sustainable options if necessary. A valuable source of local products are farmers markets. When importing some products from abroad e.g. exotic fruit, it is advised to join with other businesses to bulk buy. It is also strongly recommended to learn from the suppliers who are the growers and producers they're buying from.**



Unit 1.2 - Sustainable food sourcing strategies

Food miles

The distance the food needs to travel from production before it reaches the consumer's plate. Food miles generate a negative impact on the environment as they contribute to the increased production of energy and pollution. Every single food mile contributes to menu's carbon footprint. This simple online food miles calculator allows you to estimate the distance travelled by menu's components: <https://www.foodmiles.com/more.cfm>

Menu's carbon footprint

Is the greenhouse gas emission produced by growing, rearing, farming, processing, transporting, storing, cooking and disposing of the food served by hotel, restaurant and catering entities. The greenhouse gas emissions contribute to increase of pollutions and global warming. On this website it is possible to check what types of food generate the highest carbon footprint: <http://www.greenearth.com/foods-carbon-footprint.html>



Unit 1.2 - Sustainable food sourcing strategies



Undeniably, this kind of local and responsible sourcing may sometimes pose serious challenges for regular practices in some businesses – it may require changing or supplementing suppliers, conducting research on how the products are grown, packaged or transported before they reach the storage of the hotel or restaurant. Another challenge is related to the time that is needed to help staff get used to new practices e.g. chefs may be accustomed to ordering what they want and when they want. However, turning towards more sustainable sources of food is an unavoidable and crucial step on the way to zero waste in any HoReCa industry. Additionally, in the long-term perspective it benefits not only the business but also local economy and community, as well as disadvantaged producers in poorer countries.

Unit 1.2 - Sustainable food sourcing strategies

The food sourcing strategy that will allow HoReCa entities to reduce food miles to minimum levels, as well as dramatically reduce operating costs, is to grow their own fruit, vegetables and herbs. Understandably, not every hotel or restaurant has the capabilities to set up their own kitchen garden. The hotels or restaurants that lack the space to grow their own produce may look for other spaces such as rooftop gardens or allotments. The soil-free system based on the use of grow-lights providing year-round summer growing is one example of other available options (Tuppen, 2013). The HoReCa businesses should recognise their responsibility in carrying out the sourcing processes in sustainable and environmentally friendly manner, whilst also encouraging and promoting fair-trade practices. Moreover, they need to recognise that it is their responsibility to encourage their suppliers to minimise the negative environmental impact of the products they provide.



Unit 1.2 - Sustainable food sourcing strategies

A good practice that could support incorporating sustainable sourcing strategies to usual practices is to create a sustainable food sourcing policy document. To provide sufficient information the document should cover four main areas:

- general aims of the business in relation to their sustainable food sourcing policies;
- core sustainable strategies in relation to sourcing various types of food such as meat, dairy products, fruits and vegetables, seafood etc. The strategies should include detailed information about the sources of foods, suppliers and their providers if possible;
- sustainable strategy on food waste and recycling regarding food supplies and its packaging;
- customer and stakeholder engagement strategy.



Appendices

Appendix 1.1.1 – Food waste tracking sheet (methodology 1)

This sheet presents a methodology of food waste tracking described in the module 1.

Instructions for Implementation:

- The amount of food waste generated (using kg) and the number of bins filled in each day should be recorded.
- All other non-food waste (e.g. plastic, cardboard, etc.) should be put into a separate bin ready for recycling.

Day of the audit	Date	Spoilage Waste		Preparation Waste		Plate Waste	
		Number of bins filled	Weight (kg)	Number of bins filled	Weight (kg)	Number of bins filled	Weight (kg)
1							
2							
3							
4							
5							
6							
7							
Total volume							
Percentage in total amount of waste generated							

This food waste tracking sheet was developed based on the free resources provided by

<http://www.wrap.org.uk>

Appendix 1.1.2 – Food waste tracking sheet (methodology 2)

See below an example of alternative food waste tracking methodology.

Instructions for Implementation:

- The amount of food waste generated (using kg) and the number of bins filled in each day should be recorded. For one week of 6 or 7 days depending on your opening time.
- All other non-food waste (e.g. plastic, cardboard, etc.) should be put into separate bins ready for recycling.

Day of the audit	Date	Spoilage Waste		Preparation Waste		Plate Waste	
		Number of 5 or 10 kg bins filled	Total Weight (kg)	Number of 5 or 10 kg bins filled	Total Weight (kg)	Number of 5 or 10 kg bins filled	Total Weight (kg)
1							
2							
3							
4							
5							
6							
7							
Total Weight (kg)							

This food waste tracking sheet was developed based on the free resources provided by

<http://www.wrap.org.uk>

Appendix 1. 2 – Food waste cost calculation sheet

Day of the audit	Date	Total weight of spoilage waste (Kg)	Total weight of preparation waste (Kg)	Total weight of plate waste (Kg)
1				
2				
3				
4				
5				
6				
7				
Total Weight		X1	X2	X3
		(X1+X2+X3)		
The waste disposal cost (Euro/Kg)		Y1 (Your waste disposal cost usually depends on your waste disposal contractor, if not available you can use the average waste disposal cost calculated for your region or country. If in your city/region/country you pay a flat tax per sq/mt or per activity, you must consider an environmental standard cost that you can find on our website at http://www.zerowastepower.eu/disposal-costs)		
Total average cost of food waste per week (Euros/Kg)		(X1+X2+X3) x Y1		
Total average cost of food waste per year (Euros/Kg)		[(X1+X2+X3) x Y1] x 52 or the number of your working weeks		

This food waste cost calculation sheet was developed based on the free resources provided by <http://www.wrap.org.uk>

Appendix 1.3 – Good practice case study

Details of the organisation: _____

Photo or logo of the organisation

Introduction

The Challenge

Conclusions and Recommendations

