

# REDUCE FOOD WASTE, COOK FOR YOUR GUESTS

**GUIDE FOR HOTELS**



ENVIRONMENTAL PROTECTION  
AND ENERGY EFFICIENCY FUND



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**1. About the project**  
*Reduce food waste,  
cook for  
your guests*



Food waste management in the Republic of Croatia (hereinafter: Croatia) is regulated under the Act on Waste Management (OG 84/2021) and accompanying regulations, plans and strategies. The Act lays down the measures aimed at protection of the environment and human health by preventing or reducing waste, reducing the negative impacts of waste, and waste management.

Pilot project *Reduce food waste, cook for your guests* is aimed at reducing the quantities of biowaste comprising mainly food waste, and at proper separate collection and disposal of waste produced in the hotel sector, while complying with the goals in the Act on Waste Management and the Waste Management Plan of the Republic of Croatia for the period 2017 – 2022.

The project is implemented by the Environmental Protection and Energy Efficiency Fund in cooperation with the Ministry of Economy and Sustainable Development, the Ministry of Tourism and Sports, and the Faculty of Geotechnical Engineering of the University in Zagreb.

The hotel sector as one of the most important stakeholders in tourism has a significant environmental impact, and nowadays it has become inevitable for the hotels to adopt the “green” business model. Green hotels, as a good example of the new trends in tourism, represent the opportunity to transform the quality of accommodation in Croatia aimed at protecting the environment, attracting more demanding tourists, extending the tourist season, and tourist valorisation of the entire Croatian territory on the path to sustainability.

The COVID-19 pandemic seriously affected the tourism sector as travel had come to a stop, and the priority after the opening up shifted to the protection of health and adjustment to the “new normal” circumstances. Although tourism is faced with many new challenges brought on by the pandemic, the sector continues to offer numerous competitive advantages to applying the solutions for reducing food waste since tourism is the sector with great economic impact and visibility.

Furthermore, the tourism industry is better prepared than the other sectors, since the environment management plans, certificates and norms have become standard and offer the existing framework suitable for the introduction of measures to reduce food waste.

The position of the tourism sector at the end of the food consumption value chain is another good reason to launch the activities for food waste prevention. As the value chain develops, the cumulative effect impacts the value of lost or rejected food. Due to this, the scrapping of edible food in the consumption phase is more expensive and has a greater environmental impact.



Finally, conditions in the tourism sector are conducive to changing the behaviour of both the guests and tourism service providers. Tourists are already familiar with other efforts aimed at the sustainability of the hotel (saving water, reusing towels, reducing disposable plastics), and consumers, who are increasingly aware of the food waste problem, expect positive changes from tourism service providers as well.

The aim of this pilot project is to contribute on this path, and this guide and information leaflets for hotel guests were prepared as part of the project. All the materials are available on the website of the Environmental Protection and Energy Efficiency Fund <https://www.fzoeu.hr/hr/brosure/1359>, the Ministry of Economy and Sustainable Development [http://www.haop.hr/hr/upute-prirucnici-i-ostale-informacije-za](http://www.haop.hr/hr/upute-prirucnici-i-ostale-informacije-za-obveznike/upute-prirucnici-i-ostale-informacije-za), and the Ministry of Tourism and Sports <https://www.mints.gov.hr>. We believe that many hotels will find them a useful tool for their food waste prevention activities.

## **2. What is the topic of this guide and for whom is it?**

The guide has been prepared as a valuable tool for the hotels in their attempts to reduce the quantities of biowaste, especially food waste. It clearly and in brief proposes the activities for its reduction using proven measures, it explains the method for measuring waste quantity and the calculation of the financial cost related to food waste. The guide is meant for the staff in all hotels in Croatia, regardless of their size, location, or type, taking into account the fact that they are all engaged in the activity of preparing and serving meals and drinks.

### 3. Food waste problem in the world

When in 2013 the United Nations Food and Agriculture Organisation published that a third of the food produced in the world, around 1 billion and 300 million tonnes per year, goes to waste or is thrown away, the world was faced with disgraceful conduct of the society in general throwing away food that was still suitable for consumption.

To resolve this global ecological, economic, and social problem, the United Nations 2030 Agenda for Sustainable Development<sup>1</sup> set goal 12.3 for halving by 2030 per capita global food waste at the retail and consumer levels, as well as reducing food loss during production and supply. In addition, the European Green Deal and the Farm to Fork Strategy focus on reducing food loss and waste.

At the beginning of 2021, UNEP<sup>2</sup> published that 17% of the total food available to consumers in 2019 was discarded, which globally translates to 931 million tonnes of food sold to households, traders, restaurants, and other catering services.

The study shows that food waste is a global problem not limited to the developed world as was believed so far, because in almost every surveyed country the measured quantities of food waste were significant, regardless of the income.

1 <https://sustainabledevelopment.un.org/sdg12>

2 <https://www.unep.org/resources/report/unep-food-waste-index-report-2021>

## **4. Statistical research on food waste in the Republic of Croatia**

During 2021, the Ministry of Economy and Sustainable Development in cooperation with the company IPSOS d.o.o. specialised in market, media, and public opinion research, and the Croatian Bureau of Statistics, implemented the statistical research project on food waste in the Republic of Croatia. The research was carried out in two parts on the representative sample of households and the business sector, including family holdings.

According to the results, an average household in Croatia throws away 2866 grams of food waste in one week, or 1031 grams per household member. At the annual level, households throw away 216,345 tonnes of food waste, meaning that every citizen of the Republic of Croatia throws away almost 54 kg of food waste per year; of this waste, the food still fit for consumption – meaning it could have been used – accounts for around 22 kg.

In terms of the business sector, 70,034 tonnes of food waste are thrown away at annual level, of which 19,311 tonnes are still suitable for consumption. As expected, most of the food waste is produced in the primary food production – 58%, followed by the catering sector with 22%. Of the total generated food waste in the hospitality and catering sector, 25% is waste that is still fit for use. Food processing and production together with retail and other distribution channels in the totally produced quantities of waste account for 20%.



# 5. Food waste in hotels

Analysis of food waste carried out in 42 hotels in 15 countries<sup>3</sup> showed that during the first year, the hotels that applied the key waste prevention strategies reduced the mass of food waste by around 21%.

In this process, the hotels had the initial investment for the training of staff for the implementation of the measures to reduce food waste, the implementation of the specific waste reduction techniques, and the purchase of equipment (e.g., smart scales that recognise food category).

Reducing food loss and waste does not necessarily require the introduction of new and costly technologies, as considerable effect can be achieved through good management practices, small and financially minor changes in the processes, and first and foremost by introducing certain work methods that require changes in the food handling work habits.

Apart from financial, there are also important strategic motivators to reduce food waste at hotels, which include:

- Environmental sustainability
- Compliance with waste regulations
- Food safety
- Better client relations
- Market recognition
- Sense of ethical responsibility.

According to the Waste and Resources Action Programme – WRAP<sup>4</sup>, food waste in hotels comes mainly from the following sources:

1. Perished or expired food (21%)
2. Food preparation (45%)
3. Leftovers (34%).

40% of the mass of food waste in hotels comprises ingredients rich in carbohydrates, such as potato and potato products (21%), bread and baked goods (12%), pasta/rice (7%), while the smaller part includes fruit and vegetables (15%), and meat/fish (6%). A quarter of the entire food waste consists of scraps from preparing fruit and vegetables. Even the best-organised and managed hotel kitchen will have food losses, which is a certain quantity of food waste resulting from the physical treatment of products in the kitchen, storage (drying out, evaporation, thawing), preparing by applying heat (cooking, frying or sautéing, baking, braising).

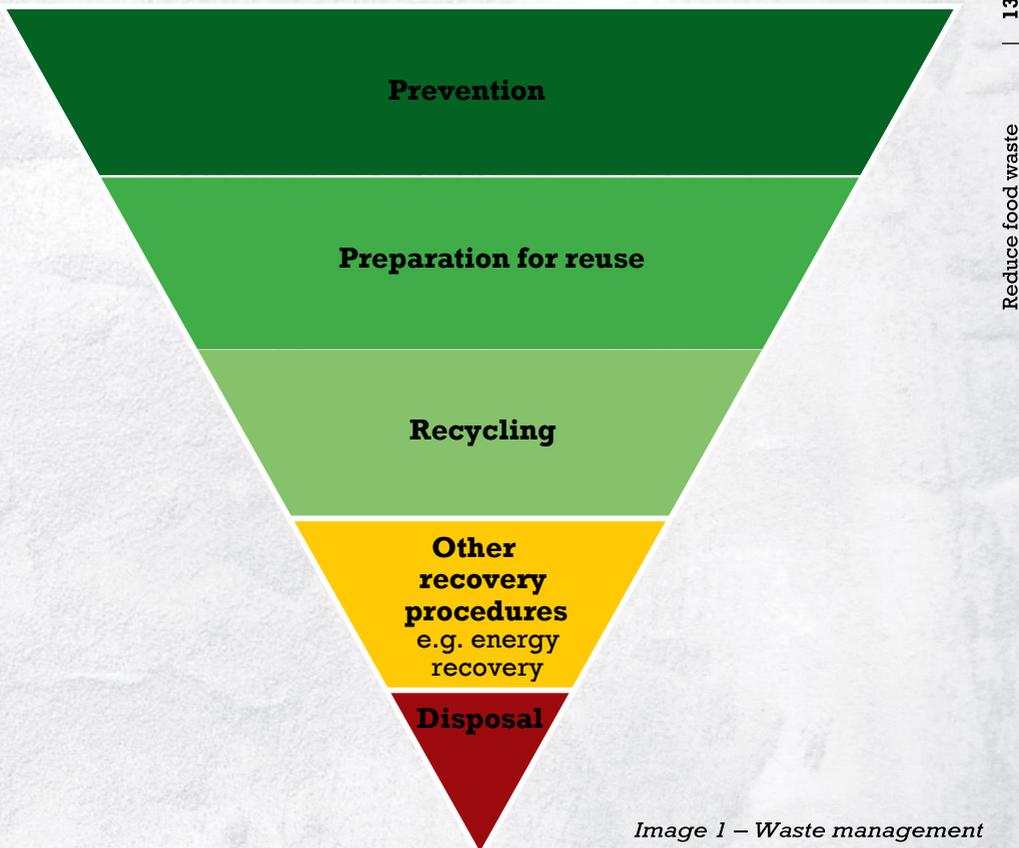
<sup>3</sup> [https://ec.europa.eu/food/system/files/2018-04/fw\\_lib\\_wri-business-case\\_2018.pdf](https://ec.europa.eu/food/system/files/2018-04/fw_lib_wri-business-case_2018.pdf)

<sup>4</sup> <https://wrap.org.uk/sites/default/files/2020-12/Strategies-to-achieve-economic-and-environmental-gains-by-reducing-food-waste.pdf>



## 6. Food waste management order of priority

In the Waste Management Plan for the period 2017 – 2022, Croatia set out the dynamic of separate collection of municipal biowaste at annual level, according to which 40% of the mass of produced biowaste at national level has to be collected separately by 2022. The Act on Waste Management (OG 84/2021) lays down the obligations for handling biowaste to produce compost, anaerobic digestion, recycling, and use of materials produced from biowaste. In addition, it is prohibited to mix the separately collected waste with other types of waste. The act defines the waste management order of priority that applies to food waste as well, where priority is given to waste prevention.



*Image 1 – Waste management order of priority*

As presented in Image 1, the order of priority as the first and most important step defines the prevention of food waste and its reduction at source. If they reuse, hotels can utilise excess food to prepare new meals. If there is a suitable place in the vicinity of the hotel, it is recommended to make compost with organic leftovers, for example fruit and vegetables, coffee grounds, tea leaves (including tea bags), eggshells, etc. In this way the leftover organic matter will be turned into humus or compost. Disposal is the least desirable option for handling food waste. Food waste that cannot be used should be disposed of in suitable containers.



Efficient food waste management is essential for protecting the environment, more efficient resource consumption, as well as economic and social advantages. Food waste, apart from having a strong moral aspect, also represents the loss of resources such as energy, water, and packaging required for the production, transport, and storage of food. Moreover, the UN Food and Agricultural Organization showed that the carbon footprint of the food produced and not used for alimentation at global level amounts to 3.3 Gt of CO<sub>2</sub> equivalent, meaning that food waste is the 3<sup>rd</sup> largest emitter of GHGs after the USA and China.<sup>5</sup>

## 7. How to start food waste prevention activities?

### 7.1. The first step in the process of waste prevention – identifying the type and quantity of waste generated in the catering activity at the hotel

Below are simple steps that will allow the hotel to determine the quantities of food waste produced in different phases (during the measurement you can use the table in Annex 1 of the guide or the food waste measurement log in Annex 2).

#### PROCESS

**1. COLLECTION** – During seven days collect the food waste in three different containers according to the source: during storage and keeping of food, during preparation and serving, and after consumption of the food (“leftovers”). In the note include the relevant information about the reason for discarding and composition of the discarded food. The goal is to establish where and why the waste is produced. It is important to take a representative week that shows the usual service during the year (no special events).

<sup>5</sup> <http://www.fao.org/3/mb060e/mb060e00.htm>



The techniques for measuring waste quantities that can be applied:

### *Method 1*

You should provide three containers for the three sources of waste: from the storage of ingredients and food, during food preparation and serving, and after consumption – leftovers, which should be collected jointly for each source, weigh the total and estimate the quantity for each food category (10 proposed categories).

### *Method 2*

10 containers for the 10 categories of discarded food, where each category is weighed after each meal and the exact quantity is recorded in the table.

The phrase “discarding food” covers edible and inedible parts of food that were discarded for some reason and are no longer used for human consumption.

“Edible part of food waste” covers only the parts that can be used in human diet, not including bones, skin, fruit pip/stone, eggshells, and similar parts of food waste that cannot be used in human consumption (not edible).

If hotels prepare more food that is not distributed to the guests, the remaining food (excess) should be donated, or used by the hotel staff, in which case these quantities are not recorded as food waste.

**2. ANNUAL QUANTITY** – Multiply the weekly value of the total quantity of food waste by 52 to calculate the amount of food waste generated annually. If your business varies according to the season or if your hotel is not open year-round, make the calculation for each respective season or part of the year when the hotel is open to guests, calculate the average and then the annual value based on it.

**3. SAVINGS** – Calculate the part this waste takes up in your total waste and express this value as the share (%) and financial expense relative to the total financial cost the hotel spends on municipal waste disposal.

The calculation of food waste disposal costs is an excellent driver of activities aimed at waste prevention.

1. The costs of food waste disposal: multiply the price of disposal of one kilogram of waste with the calculated quantity of the generated waste to get the annual cost for the disposal of food waste.
2. The costs of groceries: based on the receipts/invoices, determine the cost of groceries and deduct the cost of groceries that ended up as waste.

3. Staff costs: a bit harder to determine because we have to include the cost estimate for the staff preparing the food that gets thrown away. One of the methods is to estimate the ratio of the bought unused (discarded) food in the total quantity of purchased food. Then estimate the number of work hours the employees spent on preparing the food and determine the cost. The product of the estimated ratio and the costs relating to working hours is the estimate of staff costs.

$$\begin{array}{r}
 \text{Food waste disposal costs} \\
 + \\
 \text{Discarded food costs} \\
 + \\
 \text{Staff costs (for the purchase and preparation of discarded food)} \\
 \hline
 = \text{TOTAL FOOD WASTE COSTS}
 \end{array}$$

*\* Do not forget to add up the annual volume of expired foodstuffs that also end up as waste.*

## 7.2. Successful strategy for reducing food waste includes measurement, setting goals and taking action.

### 1. MEASUREMENT

Measurement generates the list of waste that allows determining how much, why, and when the food gets thrown away, and finding the causes contributing to discarding food. Waste measurement logs can be used to monitor waste generation or smart scales can be used.

### 2. SETTING GOALS

After measuring the baseline, it is important to set the goals for reducing food waste in the hotel. Every goal has to be specific, measurable, feasible, have a set deadline, and be realistic.

### 3. TAKING ACTION

After setting the goals, the activities aimed at reducing food waste can start. Below is the explanation of the activities that proved to be productive in the hotels around the world.

#### *Staff involvement*

It is of the utmost importance to have motivated staff. Studies have shown that more than 90% of the staff want to undertake the measures and they have

been recognised as the key variable affecting the success of the programme.<sup>6</sup>

The kitchen and the staff want to help, but they need more insights (which is why formal education has to be carried out) and guidelines from the management (holding regular meetings with the staff and dialogue with the management).

In addition, the management has to make the effort to eliminate the perception of the staff that they are guilty of creating waste so that their involvement would not diminish. The obstacles that can hinder these activities are frequent changes to the menus and a high staff turnover rate, which can be avoided if the managers incorporate the importance of reducing food waste and tactics to achieve this into training and work procedures, and if the hotel adopts and complies with the protocol for reducing food waste.

### *Revising the buffet offer*

As a rule of thumb, buffets are a large source of food waste, especially food like meat. The demand to have a full buffet at any given moment inevitably results in excess meal preparation. The strategy includes reorganising the serving of certain products (e.g. individual portions, not bowls), and putting up messages about food waste near the buffet (a poster or flyer explaining the hotel's commitment to reducing food waste) and the selection of expensive à la carte menus. Significant reduction of food waste is achievable with very simple changes such as introducing smaller plates or promotional sales of the remaining buffet during the day.

### *Downsizing meal preparation*

At least one item on the menu is almost always not chosen enough, and the preparation of smaller quantities of these types of dishes can prevent waste with no negative impact on the guest. Careful monitoring of the number of people attending the meals allows the kitchen staff and the management to better predict the requirements and reduce excess food preparation.

### *Repurposing of excess*

It is impossible to always predict the guests' demand perfectly, and the hotel kitchens will undoubtedly face the leftovers and potential waste. In this case, there should always be a "Plan B". Meaning that the leftovers should be repurposed, and income possibly generated from potential waste. For example, unused meat or meat left over from breakfast can be used as one of the ingredients in lunch or dinner. Some hotels use food scraps (shavings, peel, seeds, skin, bone) and add value to the items that are usually directly thrown in the bin.

<sup>6</sup> <http://hotelkitchen.org/case-studies/>

For instance, making stock from such scraps can reduce the costs and add value to soups and other dishes. Hotels are encouraged to donate all edible food that cannot be sold to charity instead of throwing it away. More about donating can be found on the website of the Ministry of Agriculture: <https://poljoprivreda.gov.hr/>, <https://poljoprivreda.gov.hr/e-doniranje/3909>.

#### *Additional recommendations for hotels:*

- Try to plan meal orders (the precise inventory of orders and supplies) and serve smaller portions of those dishes that remain in larger quantities after meals
- Pay attention when serving meals to the guests regarding the quantity of plated food
- Reconsider the current serving size of food that is purchased and prepared per guest
- Change the way of serving food categories that get thrown away often
- Buffet offer should be adjusted to the dynamics of the guests' taking meals
- During the *à la carte* offer, the waitresses and waiters should communicate to the guests in detail the method of preparing the dishes, quantity of the side dish etc. so that guests are well-informed about the portion they will order
- Make the effort to purchase similar ingredients that, if possible, result in the smaller quantity of waste during the preparation and serving
- Continuous education of the staff (permanent and seasonal workers) to improve the precision of measurement and keep up the motivation for reducing food waste at the hotel
- Communicate with hotel guests by means of flyers and messages in several languages informing them that the hotel is making significant efforts to reduce food waste, recycle more, and in general mitigate its impact on the environment, and inviting them to contribute to these goals with their conduct during the stay at the hotel
- Calculate the "before" and "after" the implementation of these recommendations as the achieved cost savings in terms of waste transport, purchase and preparation of ingredients, etc.



## 8. What to do with food waste produced at the hotel?

Hotels as producers of waste have the obligation to comply with the regulations in force governing the field of waste management. The holder of waste is obliged to categorise the waste they are holding according to the origin and place of waste, group, subgroup, key waste number and waste properties according to the Waste Catalogue.

### 8.1. Proper sorting of food waste

Even though food waste is significantly reduced after the introduction and application of the measures and activities to prevent waste, certain waste quantities are still inevitable, especially the inedible parts of ingredients, and it is important to know how to properly sort the resulting waste.

#### Sorting waste — staff

The resulting food waste in a hotel has to be separately collected and stored so it does not mix with other types of waste and handed over to the authorised waste management company.

#### Sorting waste — guests

In the common areas of the hotel (reception, toilets, fitness centre, wellness, etc.) used by the guests, adequate containers should be placed for sorting waste (e.g., biowaste, plastics, paper, glass...) where the guests can individually dispose of the waste.

A notice should be placed in visible spots at the hotel and the rooms (general information folder) informing about the place or places in the facility for sorting waste and requesting from the guests to use these bins for individual types of waste.

### 8.2. Storage of food waste and handing to licensed collectors

Mixing of separately collected biowaste with other types of waste is forbidden. **This means that the hotel staff is obliged to store food waste resulting from the hospitality and catering activity in separate containers and safe conditions.**

- Waste storage has to be physically separated from the hotel's main activities.
- Containers for food waste have to be made from material resistant to the effects of waste and allow safe loading, emptying, aerating and sampling.

- The storage floor has to be easily washed and resistant to the effects of the stored waste material.

After having properly sorted and stored waste, waste has to be handed over to licensed collectors/treatment operators with the relevant waste management licence.

Information about the companies holding a valid waste management licence for certain categories of waste can be found in the [Register of waste management licenses and consents](#).

The information about the companies entered in the Register of waste carriers laid down in the Waste Management Act can be found on the website of the Ministry: [https://mingor.gov.hr/?id=7589&pregled=1&datum=Thu Aug 26 2021 09:48:46 GMT+0200 \(Central Europe -DST\)](https://mingor.gov.hr/?id=7589&pregled=1&datum=Thu Aug 26 2021 09:48:46 GMT+0200 (Central Europe -DST))

### 8.3. Keeping data on food waste at the hotel

#### 8.3.1. Identification of the type of waste per key number

The holders of waste are obliged to categorise the waste they have in possession by determining its origin, place of origin, group, subgroup, key number of waste, and properties of waste according to the Waste Catalogue.

As has been mentioned, the waste resulting from hotel activities is mainly non-hazardous waste. Table 1 shows some types of waste generated at hotels, and examples explaining what belongs to the presented type of waste with the example of possible key numbers.

The key number of waste is the unique code for the type of waste comprising six digits, to which an asterisk\* is attached in the case of hazardous waste, where the first two digits of the key number indicate the group in which this type of waste is categorised, the second two digits indicate the subgroup for this type of waste, and the last two digits of the key number define the type of waste within the subgroup (e.g. 20 01 08 – biodegradable kitchen and canteen waste). The key waste numbers are used to fill out the stipulated forms for submitting the waste data.

The list with more than 800 types of waste arranged in groups they belong to is called the “Waste Catalogue”. The Waste Catalogue is an integral part of the Ordinance on the Waste Catalogue (OG 90/15)<sup>7</sup>, which lays down in detail the provisions regarding the method of categorisation of waste. The Waste Catalogue that is applied in Croatia is harmonised with the European List of Waste.

As an additional help in determining the key number (KB), the application **KB\*** – **determine key waste number** has been developed. The KB\* application —

<sup>7</sup> [https://narodne-novine.nn.hr/clanci/sluzbeni/2015\\_08\\_90\\_1757.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2015_08_90_1757.html)

determine key waste number is publicly available to app users and helps determine the key waste number according to the description of waste in the Waste Catalogue. The application is available at the link <http://roo.azo.hr/katOtpada/>.

Table 1: Examples of the types of waste resulting from catering and hospitality services at hotels

Type of waste	Example	Potential key numbers
Food waste	Fruit and vegetable scraps from food preparation and meals, eggshells, bone, food processing waste, alcoholic and non-alcoholic beverages...	20 01 08 – biodegradable kitchen and canteen waste
Waste cooking oil and fat	Frying oil, cooking fat...	20 01 25 – edible oil and fat
Mixed municipal waste	Waste from which individual materials have not been extracted in as special procedure and that is in terms of properties and composition similar to household waste, colloquially "garbage".	20 03 01 – mixed municipal waste

Additional information that helps in determining the key waste number can be found on the website of the Ministry of Economy and Sustainable Development: <http://www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/gospodarenje-otpadom-12>.

### 8.3.2. Obligations when handing food waste over for further handling

The holder of waste handing over the shipment of waste is obliged to give to the entity taking over the waste a filled out written or electronic consignment note (in the e-ONTO application) containing the data on waste and the persons involved in the management of this waste. The consignor of the waste shipment, waste consignee and, where applicable, the waste management broker, shall exchange all the information necessary to fill out the consignment note, including the information about the authorisation to receive the waste, method of waste treatment, and destination of waste treatment.

In the case where the shipment of waste is intended for transboundary movement in accordance with Regulation (EC) No 1013/2006, the forms laid down in this Regulation are filled out instead of the consignment note (Form in Annex VII of the Regulation).

In addition, the person that carries out transboundary movement of waste shall keep the data on the cross-border shipment of waste in the Electronic register on waste creation and transport – e-ONTO. Instructions for users and registration in the system can be made at the link:

<https://eonto.azo.hr/#/Home/Index>. More information about transboundary movement can be found on the website of the Ministry of Economy and Sustainable Development at: <https://mingor.gov.hr/o-ministarstvu-1065/djelokrug/uprava-za-procjenu-utjecaja-na-okolis-i-odrzivo-gospodarenje-otpadom-1271/gospodarenje-otpadom/prekogranicni-promet-otpada/7590>.

The producer of mixed municipal waste, key waste number 20 03 01, is not obliged to fill out the consignment note when handing the shipment of mixed municipal waste to the provider of public service.

### **8.3.3. Registration and keeping of data**

Individual obligations of submitting the data are related to the set-out threshold values of the generated quantities of waste. The reporting of annual data in the Environment Pollution Register (EPR) is mandatory for the companies and organisation units that produce 0.5 tonnes or more of hazardous waste per year, and/or 20 tonnes or more of non-hazardous waste. More information about the EPR and FAQs regarding the reporting of data can be found at the following link <http://roo.azo.hr/index.html#>.

Even though the producers of waste, hotels included, are not legally obliged to keep the Register on waste creation and transport (ONTO), it is recommended they should keep internal records to monitor the quantities of waste resulting from their business, i.e. possible reaching of the quantities exceeding the threshold when the producer of waste becomes the subject to reporting the data in the EPR. To monitor the threshold values, the data can be kept internally in the ONTO form, or in some other equivalent manner. The ONTO form is part of Annex 4 as a proposal for the template for monitoring the resulting quantities of waste.

Likewise, on the website of the Ministry of Economy and Sustainable Development on the link <http://www.haop.hr/hr/tematska-podrucja/otpad-registri-oneciscavanja-i-ostali-sektorski-pritisci/gospodarenje-otpadom-6> you can find some electronic forms, online registration or data search apps, instructions, and manuals to help comply with the obligations of maintaining and submitting the data and other information.

Pursuant to the Act on Waste Management, the data on handling the waste shall be kept for at least three years since the handling the waste, while evidence and other relevant data on waste handling have to be made available at the request of the competent authorities.

## 9. Legislative framework

- Waste Management Plan of the Republic of Croatia for the period 2017 – 2022
- Act on Waste Management (OG 84/2021)
- European Green Deal
- UN 2030 Agenda



# Glossary

**Biowaste** – biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and comparable waste from food processing plants.

**Biodegradable waste** – any waste or its component subject to anaerobic or aerobic decomposition, such as garden waste, food waste, paper, and cardboard.

**Waste management** – refers to the collection, transportation, recovery including disposal of waste and control of these activities, control and measures implemented on site where waste used to be disposed of, and activities carried out by the waste dealer and broker in the process of waste management.

**Waste Catalogue** – the list containing more than 800 types of waste categorised into groups to which they belong.

**Key waste number** – code of the type of waste from the Waste Catalogue comprising a 6-digit number, which in the case of hazardous waste is followed by an asterisk\*.

**Waste treatment** – recovery or disposal also including the preparation before recovery or disposal.

**Separate collection** – collection of waste that has been separated according to type and properties to facilitate the treatment and preserve the valuable properties of waste.

**Food waste** – any food and inedible parts of the food that are removed from the food supply chain to be recovered or disposed of (including unharvested and ploughed crops, anaerobic digestion, composting, generation of bioenergy, cogeneration, incineration, disposal in the sewer, on the landfill or in the sea).

**Waste prevention** – measures taken before a substance, material or product became waste, aimed at reducing:

- a. The quantities of waste, including reuse of products or extending the life cycle of products,
- b. Detrimental impact of waste on the environment and human health, or
- c. The content of hazardous substances in the materials and products.

**Storage of waste** – temporary depositing of waste in storage for up to a maximum of one year.

**Waste disposal** – any process that is not recovery of waste, including the process that as a secondary outcome has material or energy recovery.

# 10. Annexes

Annex I – Table for monitoring food waste quantities

DAN (DATUM)	OTPAD NASTAO TIJEKOM SKLADIŠTENJA I ČUVANJA HRANE		OTPAD NASTAO TIJEKOM PRIPREME I POSLUŽIVANJA HRANE		OTPAD NASTAO NAKON KONZUMACIJE (“OTPAD S TANJURA”)		NAPOMENA (npr. informacije o vrsti bačene hrane ili specifičnim okolnostima)
	Masa otpada (kg)	Vrsta otpada	Masa otpada (kg)	Vrsta otpada	Masa otpada (kg)	Vrsta otpada	
DORUČAK							
RUČAK							
VEČERA							
<b>UKUPNA MASA OTPAD OD HRANE (kg)</b>							
<b>KATEGORIJA</b>							<b>MASA (kg)</b>
Kruh, brašno, žitarice i proizvodi od žitarica							
Mlijeko i mliječni proizvodi							
Meso, riba i jaja							
Krumpir i proizvodi od krumpira							
Ostalo povrće							
Voće i orašasti plodovi							
Riža i tjestenina							
Kolači, čokolade, slastice i zaslađivači							
Masti, ulja i proizvodi od istih							
Ostalo. Ako da, što?							

An integral table is available for download at:

<https://www.fzo.eu.hr/hr/brosure/1359>

Dnevnik mjerenja količina otpada od hrane		DAN 7		01.01.2021.			
Datum:		Vrsta obroka:		Doručak			
Broj poslužiteljskih obroka:		Broj osoba prisutnih na obroku:		1			
Način posluživanja obroka (npr. izravno posluživanje gostima, samoposluživanje (švedski stol), po narudžbi, nešto drugo):		Buffet					
PRIPREMA I POSLUŽIVANJE HRANE							
Kategorija hrane	Ukupna količina otpada od hrane (kg)	Od ukupne količine otpada od hrane upisati udio koji čini jestivi dio otpada od hrane (%)	Glavni razlog zbog kojeg je određena namirnica postala otpad?*	Kategorija hrane	Ukupna količina otpada od hrane (kg)	Od ukupne količine otpada od hrane upisati udio koji čini jestivi dio otpada od hrane (%)	Glavni razlog zbog kojeg je određena namirnica postala otpad?*
Kruh, brašno, žitarice i proizvodi od žitarica	1,00	10,00%		Kruh, brašno, žitarice i proizvodi od žitarica	1,00	10%	
Mlijeko i mliječni proizvodi	1,00	10,00%		Mlijeko i mliječni proizvodi	1,00	10%	
Meso, riba i jaja	1,00	10,00%		Meso, riba i jaja	1,00	10%	
Kumpir i proizvodi od kumpira	1,00	10,00%		Kumpir i proizvodi od kumpira	1,00	10%	
Ostalo povrće	1,00	10,00%		Ostalo povrće	1,00	10%	
Voće i orasasti plodovi	1,00	10,00%		Voće i orasasti plodovi	1,00	10%	
Riža i žitarica	1,00	10,00%		Riža i žitarica	1,00	10%	
Kolači, čokolade, slastice i zaslađivači	1,00	10,00%		Kolači, čokolade, slastice i zaslađivači	1,00	10%	
Masti, ulja i proizvodi od istih	1,00	10,00%		Masti, ulja i proizvodi od istih	1,00	10%	
Ostalo. Ako da, što?	1,00	10,00%		Ostalo. Ako da, što?	1,00	10%	
<b>Ukupno:</b>	<b>10,00</b>	<b>100,00%</b>		<b>Ukupno:</b>	<b>10,00</b>	<b>100,00%</b>	

\* Glavni razlog zbog kojeg je određena namirnica postala otpad?

1. Istek roka
2. Prevelika količina nabavljene/spremljene hrane
3. Povremeno zbog netipičnog skladištenja
4. Pogrešna narudžba - kuhinjska pogreška
5. Nešto drugo, upišite u polju tablice

\* Glavni razlog zbog kojeg je određena namirnica postala otpad?

1. Istek roka
2. Prevelika količina nabavljene/spremljene hrane
3. Povremeno zbog netipičnog skladištenja
4. Pogrešna narudžba - kuhinjska pogreška
5. Nešto drugo, upišite u polju tablice

Dodatak XII

Obrazac PL-O

## PRATEĆI LIST ZA OTPAD

POŠILJKA OTPADA (A)										BROJ PL-O		200108-1234567899-001000-1																											
KLJUČNI BROJ										2		0		0		1		0		8		KOMUNALNI <input checked="" type="checkbox"/>		PROIZVODNI <input type="checkbox"/>		OPASNI <input type="checkbox"/>		NEOPASNI <input checked="" type="checkbox"/>											
OPASNA SVOJSTVA										HP 1 <input type="checkbox"/>		HP 2 <input type="checkbox"/>		HP 3 <input type="checkbox"/>		HP 4 <input type="checkbox"/>		HP 5 <input type="checkbox"/>		HP 6 <input type="checkbox"/>		HP 7 <input type="checkbox"/>		HP 8 <input type="checkbox"/>		HP 9 <input type="checkbox"/>		HP 10 <input type="checkbox"/>		HP 11 <input type="checkbox"/>		HP 12 <input type="checkbox"/>		HP 13 <input type="checkbox"/>		HP 14 <input type="checkbox"/>		HP 15 <input type="checkbox"/>	
FIZIKALNA SVOJSTVA										prah <input type="checkbox"/>		krutina <input checked="" type="checkbox"/>		pastozno <input type="checkbox"/>		muljevito <input type="checkbox"/>		tekućina <input type="checkbox"/>		plinovito <input type="checkbox"/>		ostalo <input type="checkbox"/>																	
PAKIRANJE OTPADA										rasuto <input checked="" type="checkbox"/>		posuda <input type="checkbox"/>		kanta <input type="checkbox"/>		kanistar <input type="checkbox"/>		kontejner <input type="checkbox"/>		bačva <input type="checkbox"/>		kutija <input type="checkbox"/>		vreća <input type="checkbox"/>		ostalo <input type="checkbox"/>		BROJ PAKIRANJA											
OPIS biorazgradivi otpad iz kuhinja i kantina uključujući ostatke voća i povrća, ljuske jaja i drugo																																							
PORIJEKLO KOMUNALNOG OTPADA (ispunjava samo davatelj javne usluge)																																							
POŠILJATELJ (B)										TOK OTPADA (F)																													
NAZIV OSOBE Hotel ABC d.o.o.										VLASNIK OTPADA PRI PREDAJI Hotel ABC d.o.o.																													
OIB/B.P. 12345678999										IZVJEŠĆE: DA <input checked="" type="checkbox"/> NE <input type="checkbox"/> NAMJENA: OPORABA <input checked="" type="checkbox"/> ZBRINJAVANJE <input type="checkbox"/>																													
NKD RAZRED (2007) 5510										POLAZIŠTE Ulica grada Vukovara 14, Zagreb																													
KONTAKT OSOBA Ivan Horvat										ODREDIŠTE Ulica Mate Lovraka 3, Požega																													
KONTAKT PODACI ivan.horvat@hotelabc.hr										KOLIČINA m <sup>3</sup> 418 kg VAGANJE <input checked="" type="checkbox"/> PROCJENA <input type="checkbox"/>																													
										VRIJEME PREDAJE 1.12.2021.																													
										PREDAO Ivan Horvat																													
PRIJEVOZNIK (C)										NAČIN PRIJEVOZA cestovni <input checked="" type="checkbox"/> željeznički <input type="checkbox"/> morski <input type="checkbox"/> zračni <input type="checkbox"/> unutarnjim plovnom putem <input type="checkbox"/>																													
TVRTKA Prijevoznik d.o.o.										REGISTARSKA OZNAKA ČK 1212 - OP																													
OIB 55555666666										PREUZEZO Marko Markić																													
OVLAST ZA PRIJEVOZ PRV-9999										VRIJEME PREDAJE 2.12.2021.																													
KONTAKT OSOBA Marko Markić										PREDAO Marko Markić																													
KONTAKT PODACI marko.markic@prijevoznik.hr																																							
PRIMATELJ (D)										PREUZEZO Ana Anić																													
TVRTKA Tvrtka d.o.o.										VRIJEME VAGANJA 2.12.2021., 11:30																													
OIB 22223333444										PREUZETA KOLIČINA 418 kg																													
OVLAST ZA PREUZIMANJE UPII-111-11-11/111																																							
KONTAKT OSOBA Ana Anić																																							
KONTAKT PODACI ana.anic@tvrtka.hr																																							
POSREDNIK ILI TRGOVAC (E)										OBRAĐIVAČ (G)																													
TVRTKA										TVRTKA Tvrtka d.o.o.																													
OIB										OIB 22223333444																													
OVLAST:										OVLAST ZA OBRADU UPII-111-11-11/112																													
KONTAKT OSOBA										OBRADA ZAVRŠENA DANA 4.1.2022.																													
KONTAKT PODACI										POSTUPAK OBRADE R3																													
										POTVRDIO Ana Anić																													
NAPOMENE I PRILOZI (H)																																							

The fill-in instructions for the consignment note apply as of 1 November 2021. All current forms and fill-in instructions can be found at the website of the Ministry of Economy and Sustainable Development.<sup>8</sup>

<sup>8</sup> <https://mingor.gov.hr/o-ministarstvu-1065/djelokrug/uprava-za-procenu-utjecaja-na-okolis-i-odrzivo-gospodarenje-ot-padom-1271/zakoni-i-propisi-7637/zakoni-i-propisi-iz-podrucja-gospodarenja-otpadom/7593>

Annex 4 – Proposal for monitoring generated waste quantities – ONTO form

Tvrtka: Hotel ABC d.o.o.		Lokacija: Ulica grada Vukovara 14, Zagreb		Datum otvaranja: 01.01.2021.		
OIB: 123456789999		Oznaka lokacije: 001		Datum zatvaranja: 31.12.2021.		
Ključni broj otpada: 20 01 08						
PODACI O OTPADU						
BR.	DATUM	ULAZ (kg)	IZLAZ (kg)	NAČIN	STANJE (kg)	Napomena
1.	02.01.2021.	250,00		UVL	250,00	
2.	16.1.2021.	168,00		UVL	418,00	
3.	23.1.2021.		418,00	200108-1234567899-001000-1	0,00	

Integral fill-in instructions for the ONTO form are available on the website of the Ministry of Economy and Sustainable Development.<sup>9</sup>

<sup>9</sup> <https://mingor.gov.hr/o-ministarstvu-1065/djelokrug/uprava-za-procjenu-utjecaja-na-okolis-i-odrzivo-gospodarenje-otpadom-1271/zakoni-i-propisi-7637/zakoni-i-propisi-iz-podrucja-gospodarenja-otpadom/7693>

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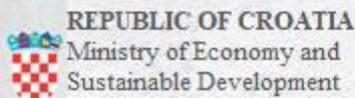
[www.zaljepsunasu.hr](http://www.zaljepsunasu.hr)

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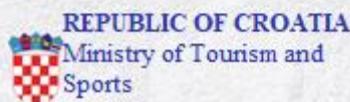


ENVIRONMENTAL  
PROTECTION AND ENERGY  
EFFICIENCY FUND

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REPUBLIC OF CROATIA  
Ministry of Economy and  
Sustainable Development



REPUBLIC OF CROATIA  
Ministry of Tourism and  
Sports

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