



RESTAURANTS AND CARBON FOOTPRINT

Mission Zero Foodprint Workbook



Mission
Zero
Foodprint

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RESTAURANTS AND CARBON FOOTPRINT Mission Zero Foodprint

Workbook authors:

Salla Kuuluvainen, Minna Päällysaho,
Tiina Rajala, Emilia Risu, Anne Turunen,
Mika Vitikka

Photos: Antero Semi

Illustrations pp.11,12: Flaticon

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Foreword

Everything we eat will affect the climate and, through that, our future. I think it is important for the commercial food production and services sectors to be involved in the efforts to combat climate change, because the large quantities of ingredients and food waste they generate can have a critical impact on the climate. In addition, trends emerge in the sectors that are later adopted by households. Finland's goal is to be carbon neutral by 2035, and all restaurant sector actors should participate in emission reduction measures to pursue the climate target. This is also what consumers want: more and more people are buying restaurant services based on their own values. I have also noticed that the younger the consumer, the stronger the role their climate values play when they select a restaurant. Climate measures can create a commercial competitive advantage and this way have economic importance.

The joint Mission Zero Foodprint (2019–2021) is a project of Forum Virium Helsinki and Laurea University of Applied Sciences whose aim has been to help small and medium-sized restaurant and catering companies reduce their carbon footprint in efficient and goal-oriented ways, and to communicate about it to customers. The project solutions have been piloted by a number of different restaurants that help with the testing.

It is often difficult for small and medium-sized businesses in the restaurant sector to navigate in the jungle of different operating methods, without knowing which climate measures are those that really matter. The Mission Zero Foodprint project has piloted many operating methods tailored to different companies. In addition, the project launched the Climate Meal campaign and organised co-development workshops open to everyone on topics such as food waste, energy efficiency, carbon footprint and customer communications as well as webinars on responsibility and carbon footprint. Hundreds of professionals and experts have participated in these activities around Finland, from Hanko to Ivalo.

Climate issues also attract wider attention. Mission Zero Foodprint has participated in the EU level Living Lab and EU Regionstar awards and received plenty of positive feedback both locally from professionals and partners in the field.

However, the best feedback is that the project is considered so important that it will continue its activities in a new form. The purpose of Mission Positive Handprint (2021–2023), a joint project of the Laurea, Savonia and Jyväskylä universities of applied sciences, is to create networks of restaurant and catering professionals both locally and nationally, and to create opportunities for peer learning and support the green transition of restaurants.

This is a project workbook for you and everyone involved in the restaurant sector. The book contains information and skills useful for taking tested and effective climate measures in the restaurant industry. The workbook gives you tips on how to communicate about your climate actions to your customers and partners, and how climate actions affect the carbon footprint of the restaurant. We hope you will find this workbook for a better future useful!



Anikó Lehtinen is a veteran food and drinks journalist and beer expert who is responsible for drinks education at the Leppävaara campus of Laurea University of Applied Sciences.

Introduction

All sectors have their own environmental impacts. In restaurant business, the impacts are large due to the nature of the industry. According to the Natural Resources Institute Finland, over one fifth of the carbon footprint is generated in food production and consumption. In addition, energy consumption in restaurants is five to seven times higher per square metre than in other commercial properties. In fast food restaurants, energy consumption can be up to ten times higher.

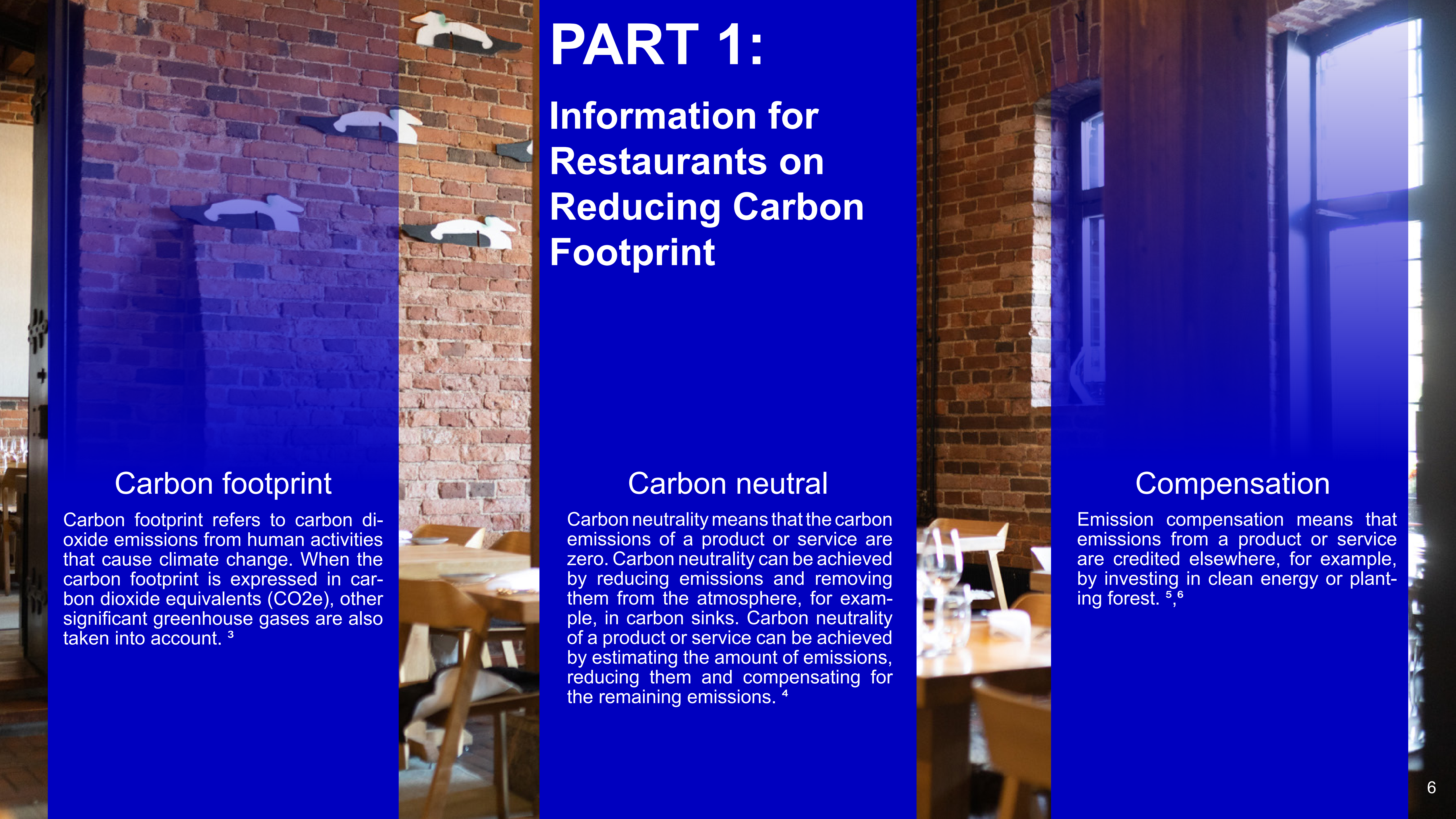
Reducing the carbon footprint of operations does not necessarily require you to make huge changes in what you do; everyday choices can play a major role for the environment. You can continue to create experiences for your customers with good food, drink and service, but in a more sustainable way and likely more cost-effectively.

The significance of responsibility, and environmentally friendly and meaningful choices will increase as competitive factors for restaurants, and customer awareness and values will increase the pressure for this. Restaurants and catering services must also be able to define and communicate to their customers how they act in a more environmentally friendly manner. Be at the forefront rather than lagging behind.

This workbook is for you, dear restaurant and catering professional. We have compiled the results of the co-creation work in the Mission Zero Foodprint project in this workbook and use the results as the basis for, providing you with concrete practical examples for how you can act responsibly in the restaurant sector every day. We hope you will find this workbook for a better future useful!

The following sources were used: ^{1,2}





PART 1:

Information for Restaurants on Reducing Carbon Footprint

Carbon footprint

Carbon footprint refers to carbon dioxide emissions from human activities that cause climate change. When the carbon footprint is expressed in carbon dioxide equivalents (CO₂e), other significant greenhouse gases are also taken into account. ³

Carbon neutral

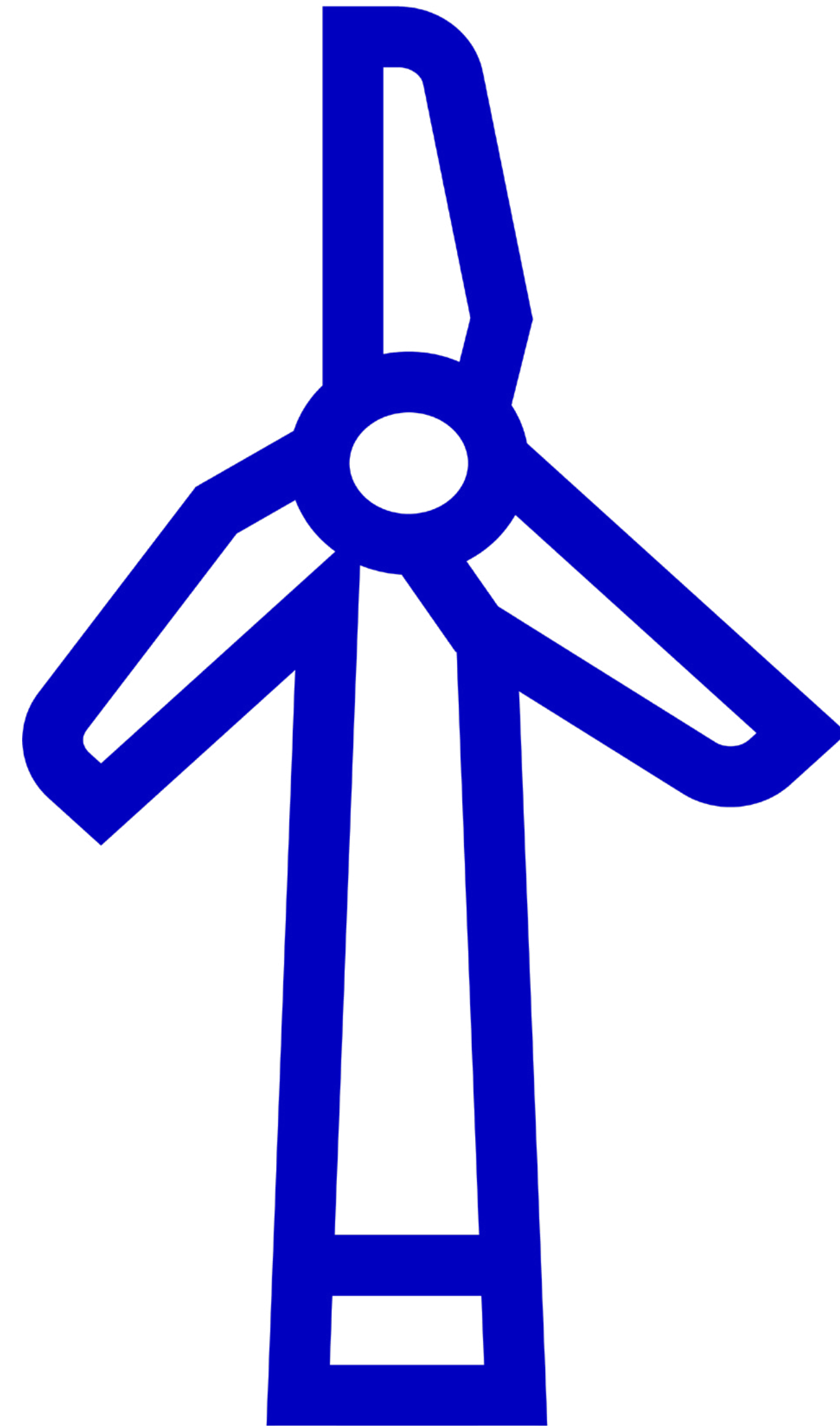
Carbon neutrality means that the carbon emissions of a product or service are zero. Carbon neutrality can be achieved by reducing emissions and removing them from the atmosphere, for example, in carbon sinks. Carbon neutrality of a product or service can be achieved by estimating the amount of emissions, reducing them and compensating for the remaining emissions. ⁴

Compensation

Emission compensation means that emissions from a product or service are credited elsewhere, for example, by investing in clean energy or planting forest. ^{5,6}

5 Reasons why a restaurant should reduce its carbon footprint

1. Listening to consumers' wishes is a competitive advantage. Health and responsibility are food megatrends that restaurants should take into account. Healthy food alternatives such as vegetables are often also low-carbon. Consumers are interested in responsible food. ^{8,7}
2. Climate responsible activities. Finland's climate target is to be carbon neutral in 2035. Achieving this target requires taking measures in different sectors. Restaurants play a key role in influencing consumers' opportunities for eating climate-friendly food. ⁷ The Climate-friendly Food Programme prepared by the Ministry of Agriculture and Forestry aims to reduce climate emissions from consumed food.⁸
3. Risk management. It is wise to consider the changes brought about by climate change in advance. Climate change alters food production and may, for example, hamper the cultivation of certain crops.⁹
4. Responsible and attractive image as an employer. Employees are increasingly interested in finding employment in a workplace that operates based on a set of values. In the future, a responsible restaurant will probably also be an attractive workplace for the best experts in the field. ^{10,11}
5. Saving money. Many measures to reduce the carbon footprint also save money: Reducing food waste and improving energy efficiency are clear targets for savings.



What does the carbon footprint of a restaurant mean?

The carbon footprint of a restaurant consists of all the restaurant's activities that generate carbon dioxide emissions. This workbook particularly examines food waste, food ingredients and the use of energy, and how a restaurant can reduce the carbon footprint of its activities by influencing these areas.



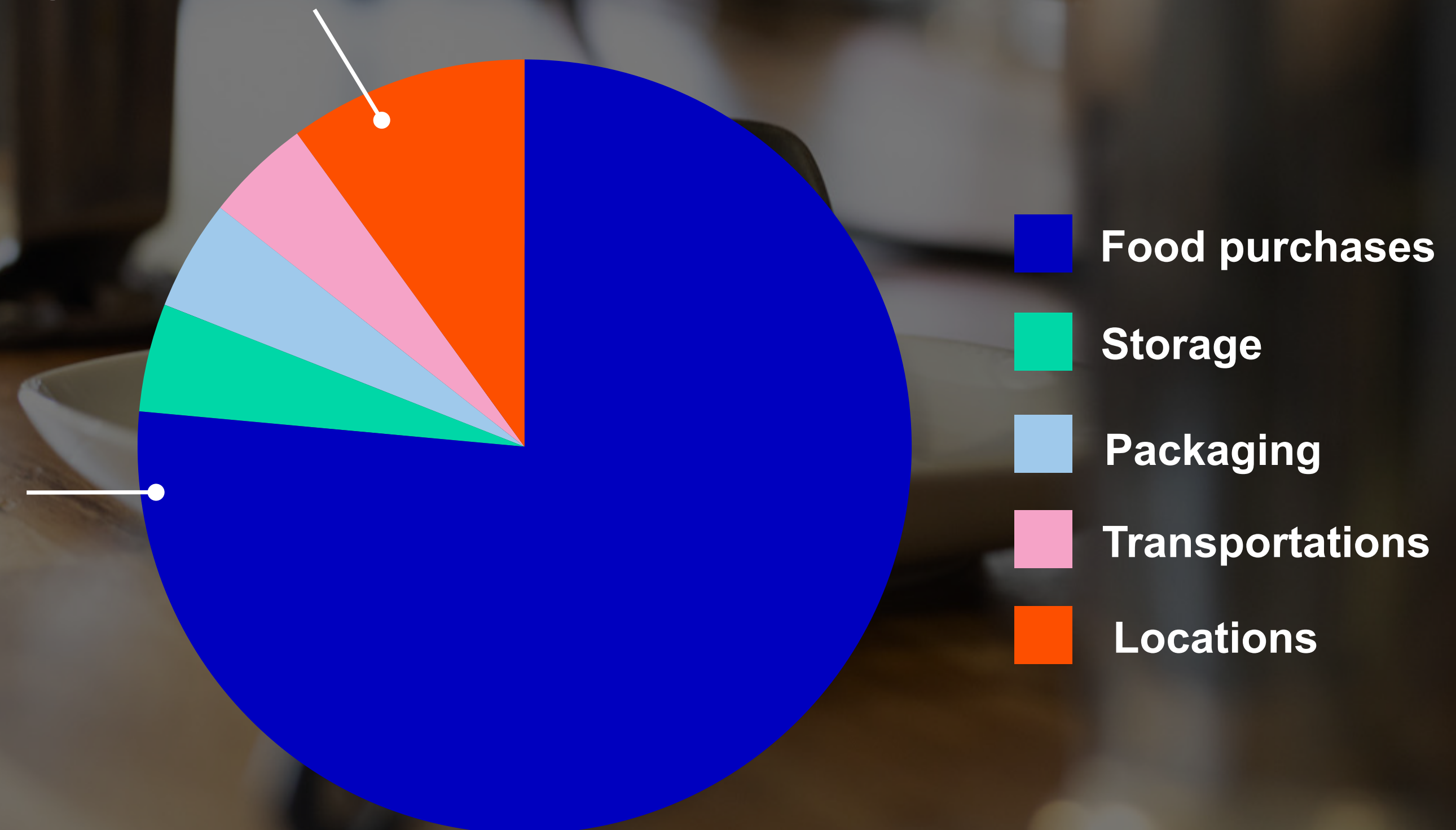
The formation of the carbon footprint of restaurants, indicative example

Carbon dioxide emissions produced by human activities are a key cause of climate change. A restaurant produces most of its carbon dioxide emissions from selected ingredients and their processing, which also includes food waste. The second highest share of emissions is generated by heat and electricity consumption in the restaurant.

A relatively small proportion of a restaurant's carbon footprint consists of food storage, packaging and transportation of ingredients. If a restaurant wants to reduce its carbon footprint, it is a good idea to particularly influence ingredients and their processing, and energy use.¹⁷ It is relatively common to think that recycling, for instance, is very important for the climate. While recycling is meaningful, the most effective measure an individual person can take for the good of the climate is transitioning to a more plant-based diet. The transportation of food ingredients, even from far away, also does not ultimately produce any major negative climate impacts.^{18, 19}

Heat, Electricity, Fuel,
Refrigerant leaks

Raw materials,
Processing



■ PRODUCTION & PACKAGING

■ TRANSPORTATION

KILOGRAMS OF CO2 EQUIVALENT EMISSIONS PER KILOGRAM OF FOOD

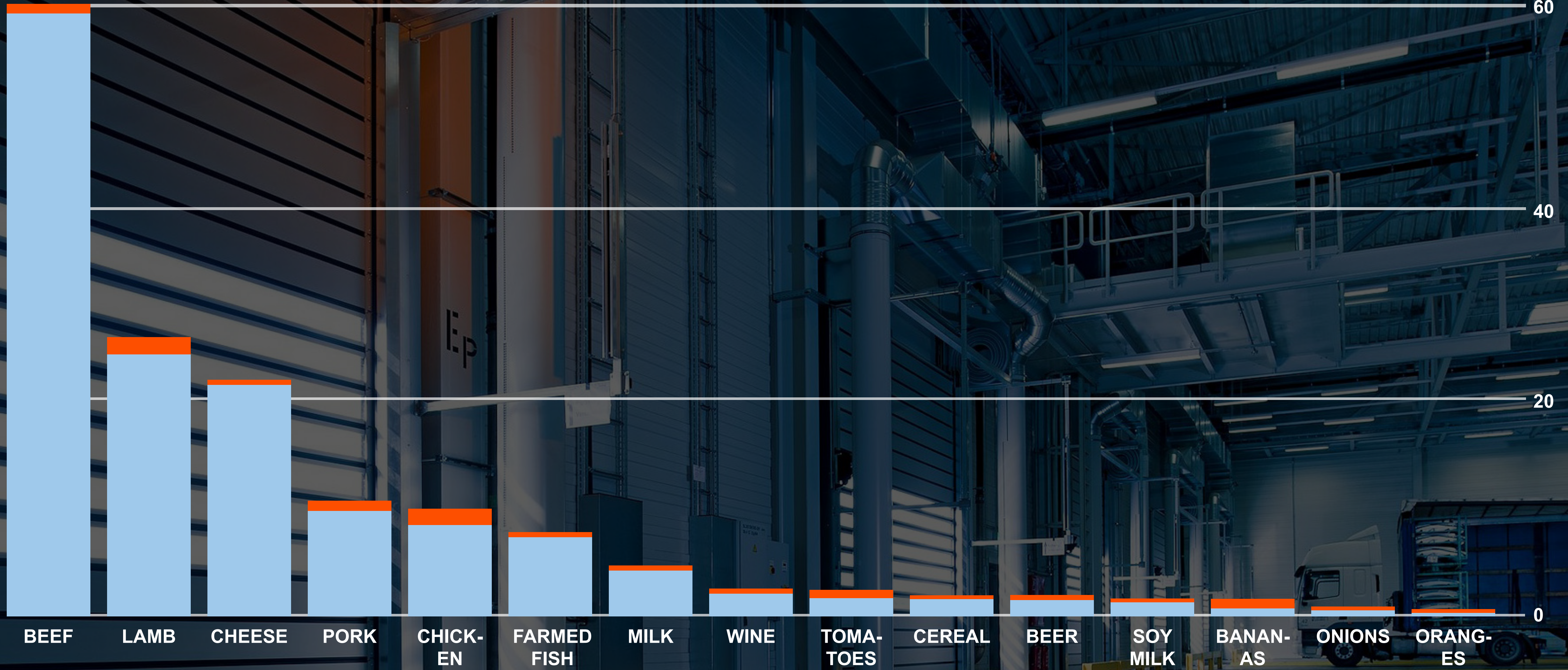


Photo: Efaflex, Pixabay

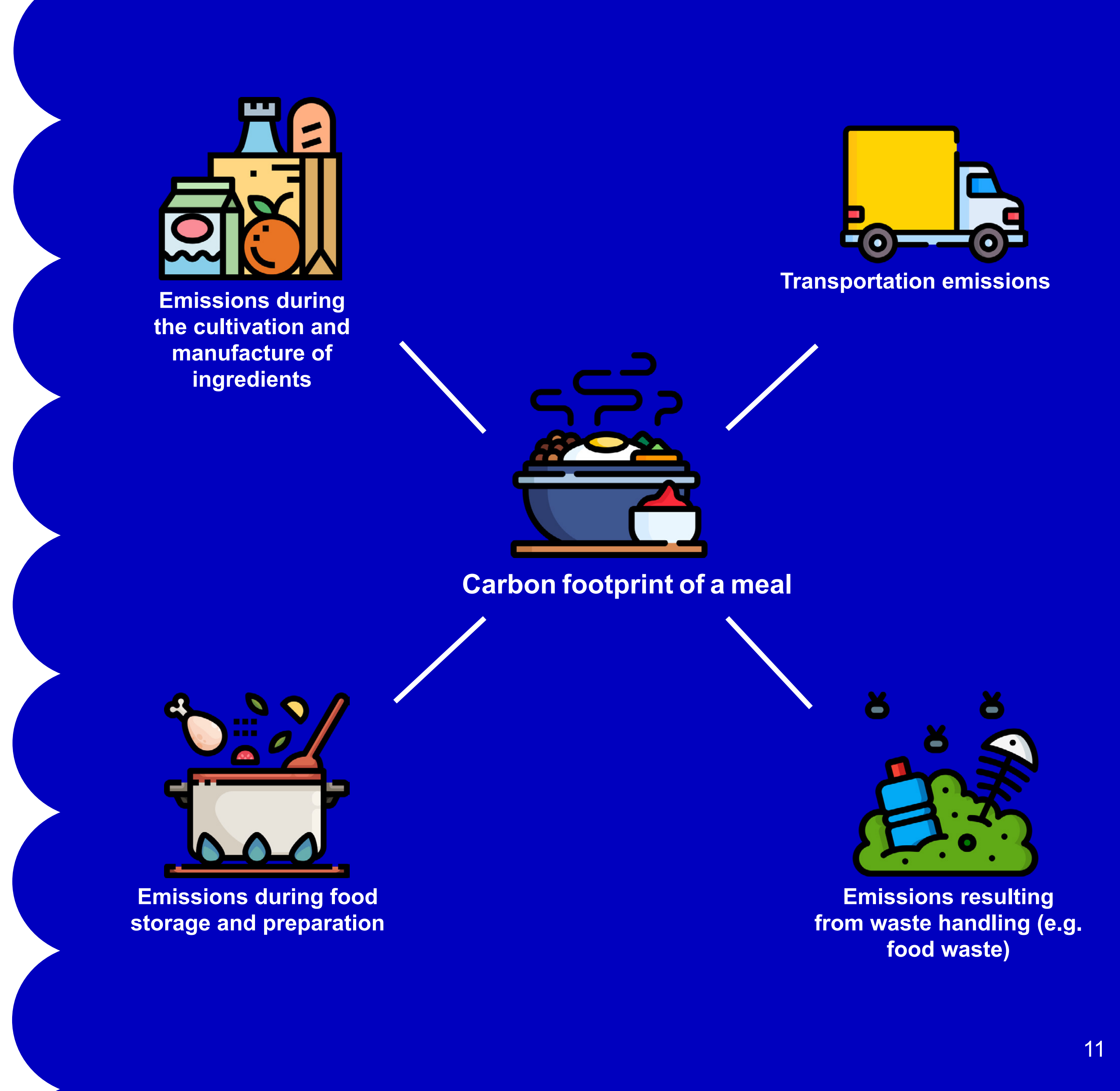
Share of production and packaging compared to transportation emissions.²⁰

Carbon footprint of a meal

Carbon footprint can be calculated for a product, company, event or even an individual. The carbon footprint calculation of a product refers to greenhouse gas emissions generated throughout the product life cycle, including greenhouse gas emissions generated during the manufacture, processing, transportation, preparation, use and disposal of ingredients.²¹

The carbon footprint of an organisation refers to greenhouse gas emissions from one organisation. In organisational calculation, emissions are divided into three scopes. Scope 1 emissions refer to direct emissions from an organisation such as emissions from energy production and vehicles owned by the organisation. Scope 2 includes indirect emissions from the organisation caused by activities such as purchasing energy. Scope 3 contains several emission categories related to the company's operations, such as purchases of ingredients and services, commuting and business travel.²²

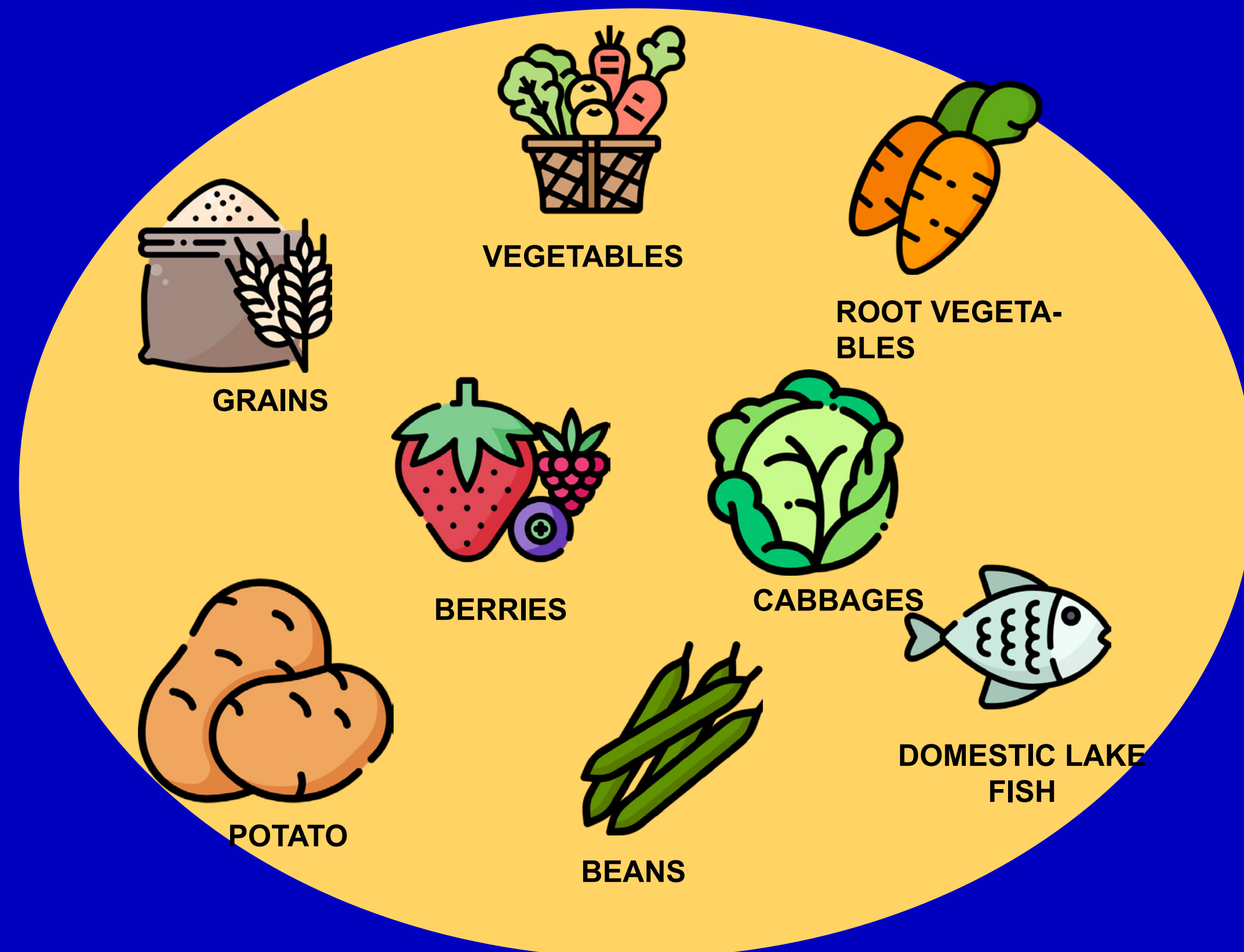
The carbon footprint of a meal consists of greenhouse gas emissions throughout the manufacturing chain. Greenhouse gases are generated during, for example, the cultivation and processing of ingredients and their transportation. In addition, in a restaurant, the storage of ingredients and the preparation of meals consume energy, the production of which produces emissions. The transportation and handling of waste generated in a restaurant also contributes to the carbon footprint of a meal.



The carbon footprint of ingredients

The criteria for calculating the carbon footprint of food are not fully consistent, so the values calculated using different methods are not always comparable. When examining the carbon footprints of products from different sources, different values can be obtained for the same ingredient, and individual issues related to the production chain such as soil type also affect the carbon footprint.²³

LOW-CARBON INGREDIENTS



A **climate-friendly diet** includes a lot of root vegetables, vegetables, legumes, fruit, berries and grain products.^{24, 25, 26, 27}

Low-carbon ingredients include domestic vegetables and seasonal foreign vegetables and fruit. The share of the transportation of ingredients in the carbon footprint of a meal is often rather small, as the transportation is often carried out by freight ships. For this reason, foreign vegetables and fruit can also be used as part of a low-carbon menu.^{20, 22}

The carbon footprint of Finnish vegetables grown in greenhouses has decreased significantly (56 per cent between 2004 and 2017). This is because greenhouses are increasingly heated with renewable energy instead of oil.^{23, 28}

The plate model provides a good example of a climate-friendly meal.²⁹

The plate model of the National Nutrition Council of Finland



Photo: The National Nutrition Council of Finland

The Planetary Health Diet

A potential solution for reducing the carbon footprint associated with a restaurant's ingredients is the Planetary Health Diet. The Planetary Health diet is an EAT-Lancet Commission proposal for a diet that takes into account environmental, social responsibility and health aspects.

The idea of the planetary health diet is that it can feed the world's growing population sustainably. In the plate model of the planetary health diet, the plate is filled half with fruit and vegetables, while the other half consists of whole grain cereals, vegetable proteins and unsaturated vegetable oils. In this diet, the consumption of sugar and red meat should be reduced by more than half, but is not completely prohibited.^{30, 31}



FOOD INGREDIENT CARBON FOOTPRINTS CO₂-eq/kg³²

BEEF



25-50 kg

SHRIMP



6-40 kg

CHEESE



5-15kg

BROILER



5-9 kg

PORK



3-7 kg

SALMON



3-5 kg

TOFU



0,5-2,5 kg

BREAD



0,5-1,5 kg

**POTATO &
VEGETABLES**



0,3-1 kg

Large carbon footprint ingredients

Among Finns, food consumption makes up approximately 20 per cent of the total carbon footprint. Most of the carbon footprint of food consumption is caused by the consumption of beef (45%) and dairy (20%).²¹

The digestion of ruminant animals produces methane, and manure and fertiliser processing causes nitrous oxide. These greenhouse gases warm the climate tens or hundreds of times more than carbon dioxide. In addition, the cultivation of animal feed causes greenhouse gas emissions and requires the crop area that could be directly used for the production of plant-based food for humans.²⁰

The carbon footprint of animal-based products is clearly higher than that of plant-based ones²¹, and reducing the consumption of red meat in particular is desirable for both climate and health reasons.³ To ensure that Finnish diets are sustainable for the climate, average meat consumption should decrease.³³ However, Finns should reduce their use of red meat and processed meat by up to 85 per cent in order to achieve a healthy diet.²⁸

In EU countries, more red meat is consumed than is healthy or environmentally sustainable. This is particularly true for consumers (one in three) who do not want to eat less red meat. As Europeans do not seem to be interested in insect food or cultured meat, consumers are likely to favour vegetarian 'burgers' and traditional vegetarian foods (e.g. legumes) as alternative protein sources.²⁹ Restaurants can reduce their carbon footprint with practices related to ingredients such as the following:

- Replacing products of animal origin with plant-based alternatives introduced to the market.
- Introducing new plant-based dishes to the restaurant menu.
- Avoiding the use of frozen foods and freezing, as this consumes a lot of energy.
- Replacing ingredients imported with air cargo with others because aviation has high climate emissions.

Based on the following sources: ^{3, 20, 21, 22, 34, 35}



What about game?

Game meat is an ingredient with a low carbon footprint because game animals do not graze and therefore do not produce greenhouse gases. Carbon emissions related to game are mainly caused by emissions from hunting trips and game transportation. At the moment, many game animal populations are well resilient to hunting. However, as there is not enough game available to cover our entire meat consumption, other solutions are also needed.³⁶



Useful links - the carbon footprint of food

- [Climate choice: Climate-friendly consumption as part of everyday life through lunch dining, in Finnish](#)
- [Recipe bank for professional kitchens from the Climate Sustainability in the Kitchen project, in Finnish](#)
- [WWF meat guide and fish guide, in Finnish](#)
- [Playbook for Guiding Diners toward Plant-Rich Dishes in Food Service](#)
- [The Planetary Health Diet](#)
- [Knorr Future 50 Foods: a recipe book for professional kitchens](#)
- [The Climate-friendly food programme of the Ministry of Agriculture and Forestry](#)
- [Vegetarian food and carbon footprint in small and medium-sized nutrition providers \(“Veget ja hiilet haltuun”\) project materials, in Finnish](#)

Food waste in restaurants

The Food and Agriculture Organization of the United Nations (FAO) has estimated that around a third (1.3 billion tonnes) of food produced for human consumption is discarded annually worldwide. It has been estimated that this amount could feed up to two billion people.

In the European Union, approximately 88 million tonnes of food is discarded each year, which is about 20 per cent of the food produced in the region. In monetary terms, the value of food that has ended up as waste in the EU is about EUR143 billion. The EU countries, including Finland, are committed to the UN Sustainable Development Goal to halve food losses by 2030.

In Finland, the restaurant and catering sector generates 78 million kilograms of food waste every year. In the restaurant sector, about one fifth of food intended for consumption ends up in biowaste. In food services, wasted food also means wasted work and money. In addition, it causes unnecessary burden on the environment.

Based on sources



78
million kg

In Finnish catering services food waste is generated annually 78 mlj kg

2030

Finland has set a national goal of reducing food waste to halve by 2030

20%

20% of food produced in the restaurant sector ends up in biowaste



Food wasted in catering services is also wasted work and money, and that unnecessarily burdens the environment

What is food waste?

Food waste is defined as food that has originally been edible but which, for one reason or another, is left uneaten and ends up as biowaste. For example, bones, vegetable and fruit peels and coffee grounds are not food waste. From a business perspective, all food that is not sold at the planned price is food waste.

Food waste in restaurants

In restaurants, food waste is generated in connection with the preparation of food as kitchen waste, as service waste especially in buffet line dining, and as diners' plate waste.

Service waste makes up the majority of food waste generated by restaurants. As a rule, service waste is caused by waste from buffet line meals and over-prepared food that cannot be reused due to legal restrictions. Reasons for service waste include the difficulty of anticipating actual food consumption and a lack of knowledge of customer preferences.

Plate waste is food that ends up as biowaste from the customer's plate. However, the role of restaurant customers as producers of food waste in food services is lower than estimated. The reasons for plate waste are partly concerned with customers' taste preferences, food quality or other factors such as rush.

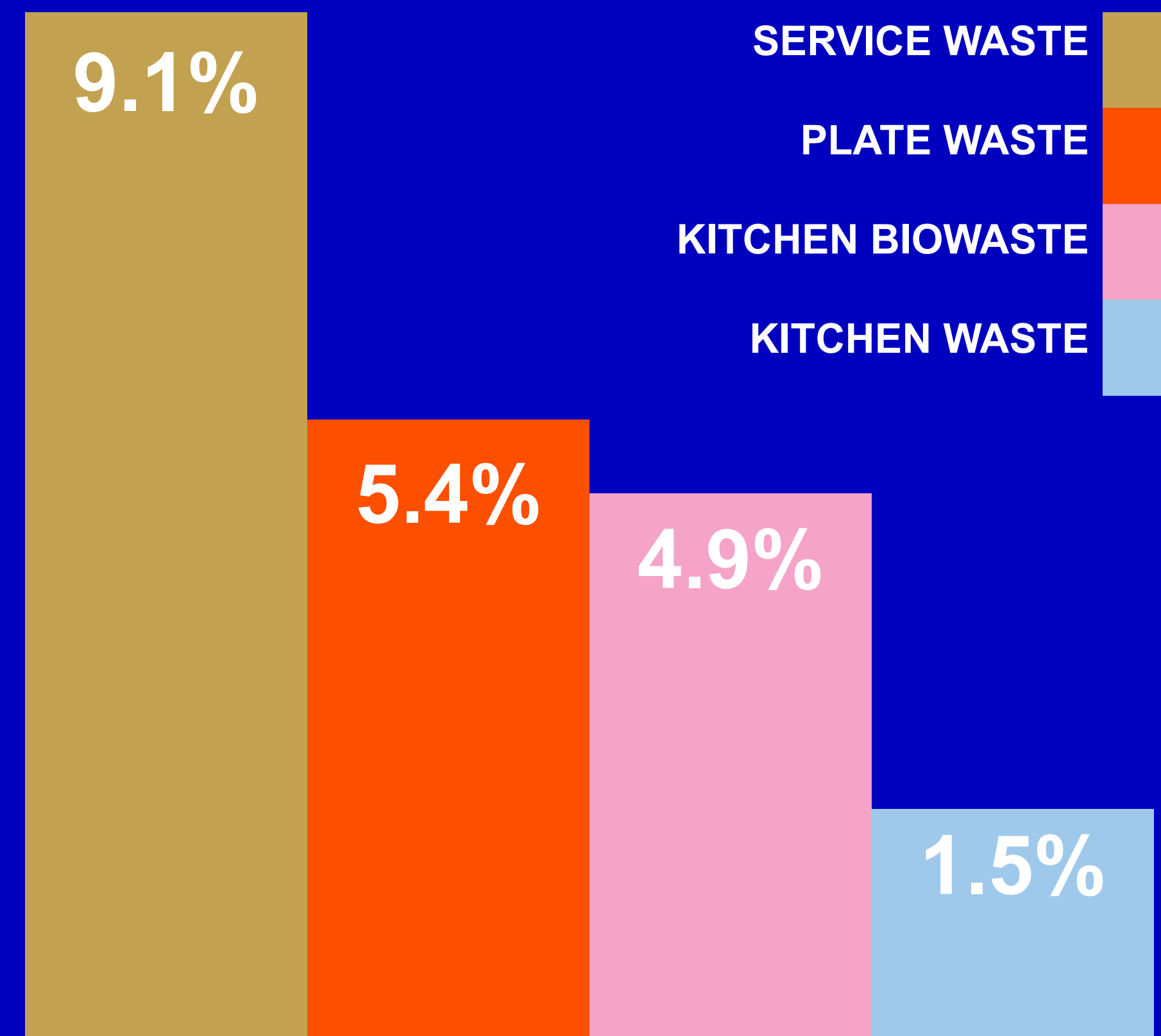
Non-edible waste such as fruit and root vegetable peels and all waste from preparation that is not edible are considered **kitchen biowaste**.

Kitchen waste is generated when, for example, an ingredient cycle or recipe does not work, these are misinterpreted or ingredients are used incorrectly. Essential ways of reducing kitchen waste include accuracy, care and guidance, and support from supervisors.

Based on sources ³⁷

The Natural Resources Institute Finland project Food waste and losses and roadmap (2020) examined the amount of foodstuff waste and unavoidable food waste and developed monitoring methodology in 78 different food service units with the Lukeloki application.

Distribution of food waste



Source: Food waste and losses and roadmap ("Ruokahävikin seuranta ja vähentäminen – tiekartta kohti kustannustehokkaita, kokonaisvaltaisia ratkaisuja") 2020, Kirsi Silvennoinen, Natural Resources Institute Finland, in Finnish¹⁵

It is easy to avoid potential food waste by making food available through food waste applications or donating it to a food bank.

Things to keep in mind when you sell or donate food waste:

- Only donate or sell food as waste when its sensory quality is impeccable
- Food that has already been served once **MUST NOT** be offered again or sold out after cooling
- However, food that has been served once may be donated to a food bank on the same day after fast cooling (max. 4h in max. + 6°C)
- Store the food in the correct temperature until the customer or food aid worker picks it up
- Unpacked, readily perishable food may be served once and for a maximum of four hours, including food sold out of a buffet line
- If the food served hot is kept above +60°C, there are no restrictions on the serving time
- Information on food allergens should also be provided for donated food
- More detailed information can be found in the *Make the most of your food waste guidebook*

Assembled from sources ³⁹ and ⁴⁰





Useful links about food waste:

Hävikki hyödyksi- näin myyt tai luovutat ravintolan tai ruokapalveluyksikön hävikkiä (Make the most of your food waste) guidebook [in Finnish](#) and [in English](#)

Hävikistä hyvikiiksi- Konsteja keittiölle ruokahävikin vähentämiseksi (tricks for reducing food waste), [in Finnish](#)

Natural Resources Institute Finland - research data on food waste in restaurants, [in Finnish](#)

Natural Resources Institute Finland - Food waste and losses and roadmap (Ruokahävikin seuranta ja vähentäminen – tiekartta kohti kustannustehokkaita, kokonaisvaltaisia ratkaisuja), [in Finnish](#)

Natural Resources Institute Finland, Restaurant Forum: Ruokahävikin määrä ja laatu ravitsemispalveluissa (the amount and quality of food waste in restaurants), [in Finnish](#)

Natural Resources Institute Finland - research data on food waste in restaurants in Finland, [in Finnish](#)

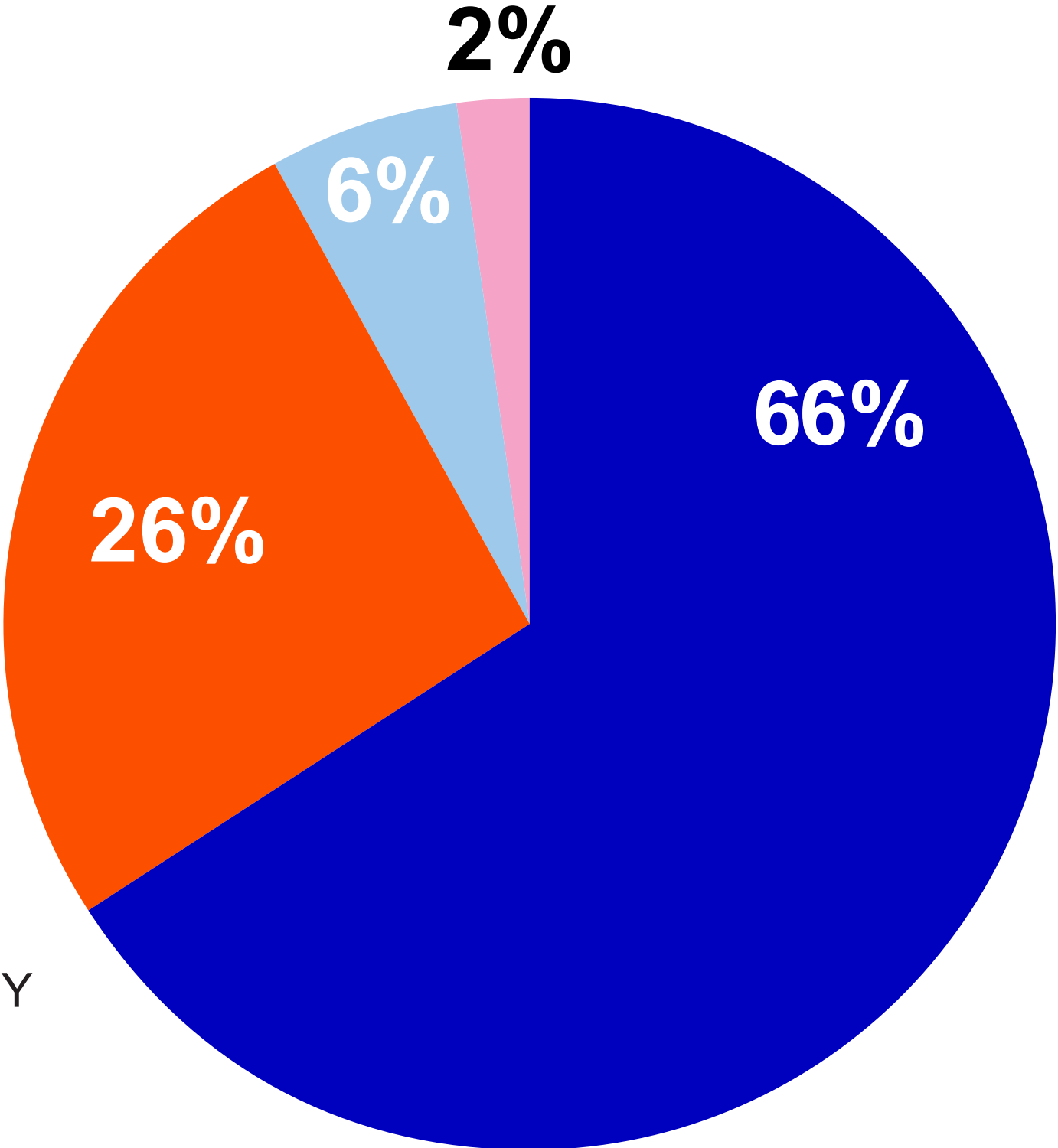
Ruokahävikki (food waste), Natural Resources Institute Finland, [in Finnish](#)

Hävikkiä häättämään, Ruokahävikin vähentäminen ravintoloissa (how to reduce food waste), MARA, [in Finnish](#)



Energy efficiency in restaurants

The energy consumption in restaurants is approximately five times higher than in a business facility of the same size. When the price of electricity continues to rise, it is reflected in the operating costs of restaurants. Energy efficiency means saving energy, and improving it has a direct impact on energy costs and the restaurant's CO2 emissions.



- HEATING ENERGY
- AIR CONDITION
- LIGHTING
- MEAL PREPARATION, COLD STORAGE AND DISHWASHING

Photo: Energy use in Finnish professional kitchens (Motiva, 2016)⁴¹

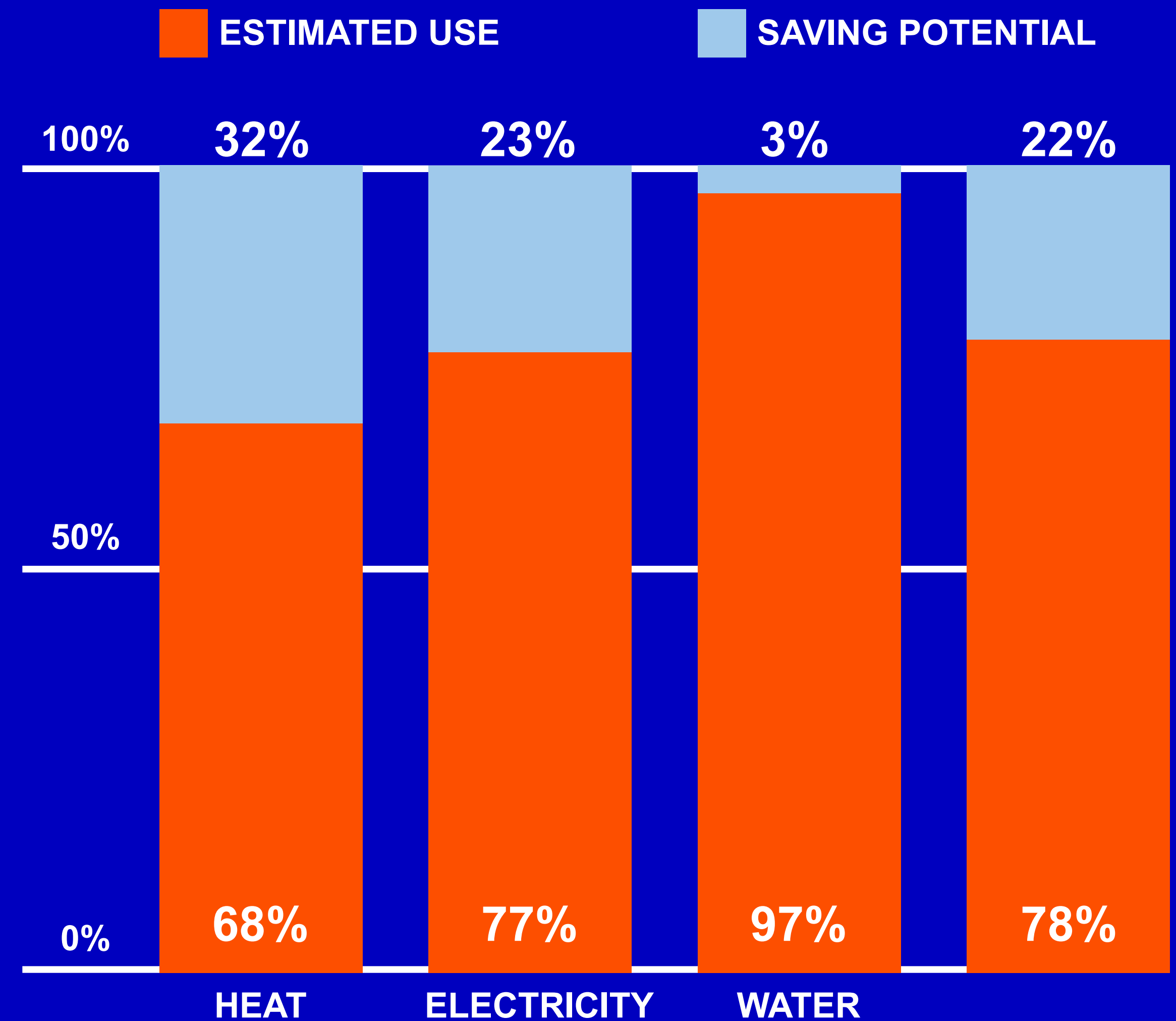


According to Motiva's *Energiatehokas ammattikeittiöopas* (energy-efficient professional kitchen guide), 60% of the potential energy savings of professional kitchens can be achieved by updating the ways people work.

The energy efficiency of professional kitchens is improved by:

- Correct and functional design solutions for working areas,
- Development of approaches and schedules.
- Equipment upkeep, regular maintenance and appropriate use.
- Purchase of new energy-efficient and appropriate equipment.

AVERAGE ENERGY SAVING POTENTIALS IN THE FOOD SECTOR (MOTIVA 2018)



Energy saving potential in the restaurant sector ⁴²

The energy efficiency of restaurants requires an understanding of the role of joint operating approaches in the big picture and systematic monitoring.

Businesses can affect the environment by favouring electricity contracts with companies that use renewable resources. Magnus Nilsson, the manager of the MAD-Academy and Head Chef Fäviken, a former two-Michelin-star restaurant, noted in a recent Nordic Kitchen Manifesto webinar that when he had asked restaurant owners if they knew where their electricity came from, nine out of ten did not know. Especially in the Nordic countries, green electricity is not much more expensive, so more environmentally friendly energy is just a phone call away. When selecting gas, domestic, environmentally friendly biogas can also be favoured. If the electricity contract is tied to the lease agreement, check your lessor's corporate responsibility plan and whether you can influence the choice of a renewable energy source through it.

New Nordic Food c/o Ministry of Agriculture and Forestry of Finland. Nordic Kitchen Manifesto webinar, 27 September 2021. Accessed on 17 June 2021



Photo: Ed White, Pixabay



Useful links about restaurant energy efficiency:

With the help of an Energy Efficiency Agreement by the Finnish Hospitality Association MaRa, companies can not only contribute to combating climate change, but also make savings on energy costs. In Finnish.

The EcoCompass environmental management system and certificate are built with expert support for the organisation's own needs and allows you to save your own and natural resources.

Motiva's Energiatehokas ammattikeittiö (energy-efficient professional kitchen) is a comprehensive guide that provides practical solutions and tips for the energy-efficient use of professional kitchen appliances. In Finnish.

Motiva's Energiakatselmus kannattaa – Säästöjä kunnille ja pk-yrityksille (energy auditing for municipalities and SMEs) is a thorough and comprehensive report on the use of energy and water and the possibilities for improving their efficiency. In Finnish.

PART 2:

Operating model for
Restaurants:

How to Reduce Your
Carbon Footprint?



Introduction to the Operating Model

Restaurants can influence their own carbon footprint in different ways, and there are many methods for reducing your carbon footprint. As restaurants are different, the challenges related to food waste are very different, for instance, in pizzerias, cafeterias and fine dining restaurants. For this reason, different measures are suitable for different restaurants. However, in any case, it is important to identify the issues that the restaurant can best influence and what the benefits these measures will bring. The objective of this section is to provide one model for operating principles that restaurants can utilise when taking steps towards lower carbon operations. This operating model may be applied as a whole or only partly. The aim is to encourage restaurants to consider their own possibilities for making a difference and taking action!

The operating model of the Mission Zero Foodprint project has been developed in collaboration with restaurant industry actors in project workshops, and by interviewing actors in the field and experts in energy efficiency, carbon footprint and food waste, and by exploring research and publications in the field. Creating the model involved benchmarking Finnish pioneering restaurants. Their activities were observed during the project.





1. Explore topics



2. Think about your current status



3. Think about solutions together with your staff



4. List the actions and your objectives!



5. Monitor the implementation and success of the measures!

OPERATING MODEL

Stage 1 of the operating model

Explore topics:

What affects

the carbon footprint of restaurants?

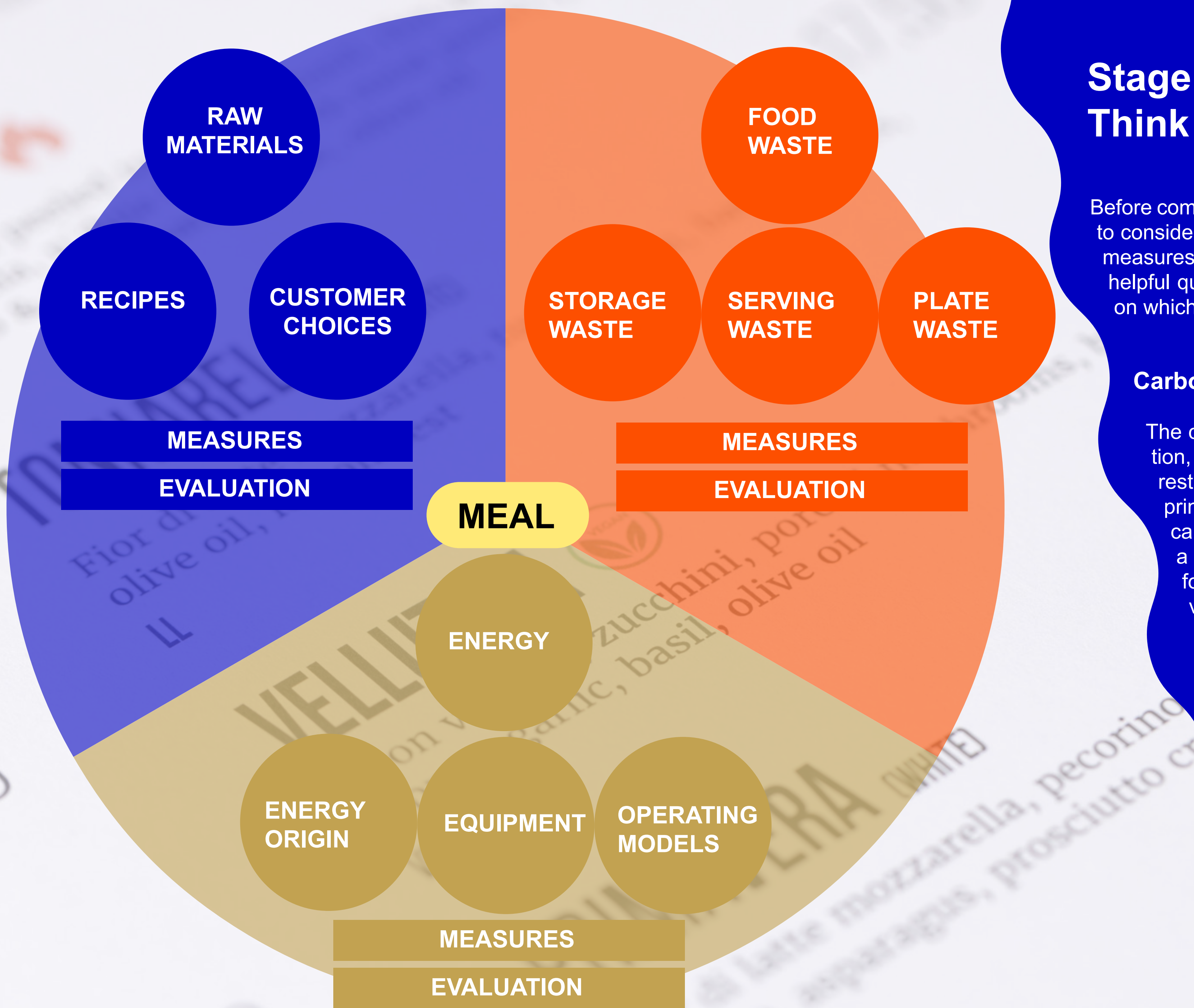


Carbon footprint of a meal: The carbon footprint of a meal is influenced by factors such as the ingredients used as well as food waste and energy consumption. The carbon footprint of meals can therefore be influenced, for example, by reducing the use of red meat and increasing vegetable protein. For more information, see page 29.

Food waste: Food waste originally refers to edible food that, for some reason, ends up in biowaste. It is important to find out where food waste is generated and why it is necessary to reduce its amount. For more information, see page 29.

Energy efficiency: Restaurants use energy for purposes such as food preparation and cold storage. They can reduce their emissions from energy consumption, for example, by changing working methods, investing in energy-efficient equipment and using zero-emission or low-emission energy sources. For more information, see page 30.





Stage 2 of the operating model

Think about your current situation?

Before coming up with ideas and planning the actual measures, it is good to consider what measures should be taken at the restaurant and what measures have already been taken. This page contains a number of helpful questions under various themes that you can use in reflecting on which measures your restaurant could focus on.

Carbon footprint of a meal

The carbon footprint of a meal consists of ingredients, transportation, the amount of food waste and the energy consumption of the restaurant. Since several different factors affect the carbon footprint of a meal, the best way to start thinking about reducing the carbon footprint would be to first calculate the carbon footprint of a meal and then consider how to reduce it. Even if the carbon footprint of a meal is not known, the restaurant can still take various measures to reduce the carbon footprint.

- Calculate the carbon footprint of a meal or define factors affecting it.
- How could the carbon footprint of meals be affected?
- How do the choices made on ingredients affect the carbon footprint of your meals?

The carbon footprint of food ingredients

Cooking ingredients is often the biggest factor affecting the size of the carbon footprint of a meal. Replacing products with a large carbon footprint with other ingredients enables you to reduce the carbon footprint of meals. Here are a few questions to help you understand how to reduce the carbon footprint of ingredients:

- What kinds of ingredients do you use?
- In your recipes, is it possible to replace meat, for example, with a vegetable protein?
- Do red meat and dairy like cheese play a big part of the restaurant's recipes?
- Do you know which ingredients cause most burden on the climate?
- Do you offer meal alternatives for vegetarians and vegans?
- How much vegetarian food is consumed in your restaurant compared to meat?
- Are you advertising your vegetarian dishes? How?
- What kind of feedback have you received on the vegetarian dishes?
- Do you offer customers an opportunity to increase the proportion of vegetables in food portions/meals?



Food waste

When we start thinking about reducing food waste, it is important to consider what its significance is in your restaurant and how it can be influenced. Here are a few questions to help you understand your restaurant's situation regarding food waste:

- How much food waste is produced in the restaurant?
- Where does the biggest amount of waste originate from? Why?
- Which dishes cause most waste?
- How do you monitor the amount of food waste in your restaurant?
- What is the monetary value of food that ends up in waste?
- How do you follow the inventory cycle? Are the ingredients expiring often?
- How do you use extra food? Is it possible for you to sell food or donate it to charity?
- How have you tried to reduce food waste? Has the reduction of food waste been successful?



Energy efficiency

In a restaurant, energy is consumed in areas such as food preparation and cold storage. The amount of CO₂ emissions caused by energy consumption depends on the consumption of energy and the used energy source. The energy efficiency of equipment and approaches used in the restaurant affect energy consumption, and the energy used affects emissions from its production. Below are a few questions that your restaurant can use to investigate its own energy consumption:

- Do you know how much energy you consume?
- What does your energy consumption consist of?
- How much energy is consumed by refrigerators and cooking food?
- What kind of energy do you use?
- What options do you have for switching to low-emission energy sources?
- How do you take the energy efficiency of equipment into account when purchasing equipment?
- Are your current practices causing energy to go to waste?



Stage 3 of the operating model Think about solutions together with your staff

Ideation session

It is a good idea to consider solutions together to gather the views and experiences of all employees. You can also base the brainstorming on feedback from customers, experiences and examples from other restaurants. An idea bank for inspiration can be found in the appendix to this workbook. You can make use of the ideas as such or use them as bases for coming up with measures that suit your restaurant activities.



IDEATION

ME-WE-ALL OF US

Sometimes when you come up with ideas in a group, the most talkative participants keep the discussion going. The Me-We-All of Us method allows all participants to have their ideas and thoughts heard. The session starts with each participant writing down their ideas on a piece of paper for about 3 minutes. The participants then go through the ideas with a pair, combine their ideas and develop them further for about 10 minutes. At the end of the pair work session, the pairs must choose 3–5 ideas they have selected, which are written on post-it notes and attached to a wall. Each couple briefly presents their own ideas to everyone, after which the ideas are discussed in the group. The group can use methods such as voting to decide which ideas to introduce to practice at the restaurant.

REFLECTION SESSION:

Three large papers are put on a wall and given appropriate titles, such as "reducing food waste", "reducing the carbon footprint of meals" and "ways to reduce unnecessary energy use". All participants write their own ideas on the wall, after which everyone reads and continues the ideas by other participants, highlighting new perspectives, ideas for further development and comments. You are not allowed to speak during the session! The workshop ends once you have run out of ideas to add on the wall. After the session, the ideas are reviewed, and you can reflect together which ideas you can put into practice at the restaurant.

BRAINSTORMING WITH A PAIR

The purpose of brainstorming with a pair is to come up with ideas for measures in pairs. The group is divided into pairs and each pair comes up with as many ideas as possible to reduce the restaurant's carbon footprint. These can be small, large, existing examples or entirely new ideas. Each pair writes down their ideas, for example, on a large piece of paper attached to a wall. At the end, the ideas are reviewed and the group can vote together on the measures introduced to practice at the restaurant. This brainstorming can also be carried out as a competition: Which pair comes up with the most ideas?

Stage 4 of the operating model List measures and what you aim to achieve with them

It is a good idea to collect all the ideas you have come up with and make up a plan for their implementation. Examples of how a restaurant can adopt various measures are presented below.



FOOD WASTE

Monitor and measure how food waste is generated.
Which restaurant activities cause food waste?

STORAGE & KITCHEN WASTE	SERVICE WASTE	PLATE WASTE
Match your inventory and order sizes with anticipated customer numbers	Anticipate the amount of food to be served	Reward customers if no food is left over
Take stock rotation into account (FIFO & FEFO)	Nudge customers to take less food by using smaller dishes and utensils	Inform customers that they can have another serving
Monitor which products sell and which do not	Sell take-out food from the buffet line after lunch	Communicate to customers about food waste and how to prevent it

EVALUATE THE IMPACT OF THE MEASURES

For example, in reducing food waste, it is important to know which restaurant functions are particularly prone to producing food waste and to consider what kinds of measures can be used to influence this. The figure shows an example of what kinds of measures can be taken to influence the reduction of food waste.

REDUCING THE CARBON FOOTPRINT OF INGREDIENTS

Find out which things have the biggest impact on your carbon footprint.

AFFECTING THE CARBON FOOTPRINT OF INGREDIENTS	AFFECTING CUSTOMER CHOICES
Replace beef with low carbon protein sources in recipes (chicken, vegetables, beans)	Improve the appearance of low-carbon foods
Learn about plant-based meat substitutes and use them	Give vegetarian dishes delicious-sounding names and place them higher on the menu
Offer more vegetarian options in the menu	Consider the set-up of low-carbon foods on your buffet table and in your display cabinet

EVALUATE THE IMPACT OF THE MEASURES

Reducing the carbon footprint of ingredients can be influenced, for example, by making recipes more climate-friendly and also by experimenting with different measures to make customers choose more vegetarian dishes. The above examples show different ways of reducing the carbon footprint of ingredients.

ENERGY

Find out what the restaurant's energy consumption is and think about how you can affect it.

ENERGY SOURCE	MEASURES	EQUIPMENT
Switch to green electricity	Do not leave devices on for no reason	Replace old equipment and lighting
Switch to biogas	Turn devices off when not in use	When purchasing new equipment, consider the energy class of the equipment
	Use correct size food preparation containers	Equipment health check / Maintenance schedule

EVALUATE THE IMPACT OF THE MEASURES

Emissions from energy consumption can be influenced, for example, by using renewable energy sources, changing operating approaches and investing in energy-efficient equipment. A few examples of how energy consumption can be influenced are given above.

When you create a plan, merely writing down measures is not enough. To actually carry out the plan, it is important that you discuss together how the measures will be taken and who will be responsible for them. Below is an example of what should be taken into account when planning measures:

- Select the persons responsible for the implementation of the measures
- When and how will the measure be implemented in the restaurant?
- What is needed to implement the measure?
 - Do you have to make purchases?
 - Whose working time is needed?
 - Is training required? What kind?
 - How will the measure be introduced to practice?
- How will you measure the success of the implementation?
 - How will the implementation be monitored?
 - How do you know that the implementation has been successful?

Measures	Person in charge	Date of implementation	Resources required	Success of implementation
Fill out the selected measures	Agree who is responsible for each measure	When will the measure be taken? Is it an experiment you carry out for a fixed period of a continuous process?	Do you need to make some purchases? Does someone need to spend their working time on the measure? Do the staff need training? How will the measure be introduced to practice?	How do you track progress? How do you know that the implementation has been successful?

Stage 5 of the operating model

Monitor

the success of the measures



The success and implementation of the measures should be monitored at regular intervals. This enables you to consider what challenges you have encountered and which aspects have worked well. Here are some tips for monitoring the measures:

- ◆ Discuss the plan and its implementation regularly with the staff.
- ◆ Have you encountered any challenges? Discuss how to resolve them.
- ◆ Remember that not all measures work in all restaurants, find a way that works for you!
- ◆ Also follow the concrete figures: amount of food waste, food consumption, sales and energy consumption.
- ◆ Interact with customers: How do customers experience the new measures?
- ◆ Also pay attention to where you have succeeded!
- ◆ Keep up with the good work towards reducing your carbon footprint!



Overview of food industry trends

Food trends that are in at a given moment may be temporary or short-term. When talking about food, there are also long-term trends or guidelines that guide consumer choices more extensively than just as a momentary experiment. Trend reviews of different food sector actors reveal four broader areas whose significance for consumers is sure to grow and continue to guide consumer choices in the future.

Food trends also emphasise simplicity, comfort and ease. Consumers value products that make their busy everyday lives easier. Digitalisation is also visible in the food sector, and it also provides new opportunities for increasing the transparency of food origin and supply chains.

The section is compiled based on trend reviews carried out by various actors in the field: ^{12, 13, 14, 15} and ¹⁶

Responsibility

Responsibility as a whole is a broad and multidimensional theme. Food production methods and consumption habits will inevitably change so that food can be sustainably produced for the entire world population.

For a long time by now, responsible choices have been influencing consumer choices. As a result of increasing awareness, consumers' demand for responsibly produced food will also increase. For example, consumers have increasingly positive attitudes towards vegetarian food, and the demand for vegetarian products is increasing. However, responsibility means different things for different people. It can mean ethical values, animal welfare, avoiding palm oil or following a climate-friendly diet.



Knowledge of food origin

Consumers' interest in food origin is increasing. This is partly due to the COVID-19 pandemic and consumers' desire to support local producers and business. Local and clean food are also important values for consumers, and there is growing interest in finding out where food comes from.



Health and well-being

While health and well-being is an ongoing food-related trend, its focus areas are constantly changing. For example, avoiding sugar has been trendy for a long time, but now the emphasis is moving more towards healthy vegetable fats. In addition, there is an interest in diets that also support mental well-being. Interest in the medicinal use of food has also increased.

Self-expression as part of food choices

Food is one way to express your identity. There are different diets, and people can use them to reflect their set of values. Instead of a single specific plate model, each consumer tailors a personal plate model used to showcase their specific values. For example, keto diets may differ very much from the so-called planetary health plate model. People also use social media to draw attention to food and their identity. In this case, food and individual choices are part of the person's own narrative.



How to communicate about carbon footprint measures to customers

Customers are becoming more and more aware of the climate and other environmental impacts of the food system, and an increasing number of them pay attention to how food is produced, where it comes from, and whether it is good for health and the entire planet. There is a slight change in the eating habits of European consumers such as a decrease in the consumption of red meat and an increase in demand for organic food. Price, lack of information and challenges in identifying sustainable food alternatives and their limited availability are the main obstacles to climate-friendly eating.³⁵

More than half of consumers report that climate-friendly food has some (42.6 per cent) or much (16.6 per cent) impact on their eating habits. Two thirds of consumers are open to changing their eating habits for environmental reasons, and slightly over 40 per cent of consumers report that they have either stopped eating red meat or reduced eating it.³⁵

In Finland, food consumption accounts for 20–25 per cent of the average consumer's climate impacts. With their choices, the average Finnish consumer can reduce the climate impact of their diet by 30–40 per cent, but this requires a change in the entire diet. With a wide-ranging dietary change, consumers can reduce their climate impact by about 10 per cent.²⁵



Restaurants have an opportunity to influence customers' eating habits. Customer choices can be supported by producing and providing information on environmentally friendly food. Customers would like to buy sustainable products, but up to six out of ten consumers have reported that it is difficult to know whether a product is responsible or not.⁴⁶

Customers perceive messages that make reference to individual sacrifices as negative⁴⁸. Instead of blaming, it is worth informing the customer about the benefits or how responsible actions make the customer's life easier.⁴³ Blaming should also be avoided, because customers may feel guilty at the time of the purchase decision if they are unable to make choices based on their values and emphasise responsible products.⁴⁸ Instead of blaming, the communication should, then, be empowering and it should try to create an impression to the customer that they can genuinely make a difference with their choices.

The Behavioural Insights Team has created recommendations in the [A Menu for Change publication \(2020\)](#) on how a restaurant can promote environmentally friendly food choices:⁴⁴

1. Market plant-based products as delicious and attractive alternatives. Change the way you communicate, do not talk about meat free food but rather highlight the pleasure of plant-based foods.
2. Make use of offers and promotions. Introduce positive ways of influencing choices, take advantage of gamification, for example, by introducing a vegetable passport or by offering vegetable dishes for a special price to loyal customers.
3. Raise awareness. Leverage influencer communications and raise awareness through training.
4. Build a brand for plant-based alternatives to make them appeal to the mainstream consumer. Bring attention to traditional vegetable foods.
5. Make plant-based alternatives part of your regular food selection. Do not offer a separate vegetarian menu.
6. Simplify the change for the customer with tips and recipes. Only serve red meat once a week and communicate that meat is a food for special occasions that is consumed less often.
7. Change how you serve climate-friendly food by increasing its availability, making it the default alternative and placing it as the first alternative.



Menu of the Future

In workshops on communicating to consumers, restaurant industry professionals produced the Menu of the Future, which helps restaurants consider how to communicate with customers about making responsible choices in a restaurant and provides ideas on how to influence consumers.

Restaurant's climate actions - Provide information about how your restaurant promotes responsible choices

Menu content - Emphasise responsible alternatives, reduce the share of meat

Meal of the day - Present the most responsible choice of the day and its background

Meal sizes - Offer an opportunity to combine products and choose a meal size based on hunger

Visual aspects - Display visual symbols for carbon footprint and health; better for nature, better for you. Show model meals.

Language - Use attractive descriptions and names for good choices. Encourage customers to participate in reducing food waste using playful, relaxed language.

Placement - Offer vegetarian options as a part of your normal selection. Place good choices first.

Positive tone - Avoid blaming, encourage participation in responsible actions.

Sources of information - Share how to find more information, make sources transparent.

Stories and origin - Provide information about the background of local food in an interesting way, highlight that it is local and what its origin is.

During the project, some restaurant customers were interviewed about their attitudes towards vegetarian food. The biggest prejudices about vegetarian food were related to poor experiences, the appearance and composition of vegetarian food, and its nutritional content, especially regarding protein. However, the interviews revealed that the availability of vegetarian supply has improved in recent years.

Many of the interviewees also said that they do not necessarily think about climate issues when making choices in a restaurant, but that the most important factor in choosing is "which option looks the best". However, some of the interviewees replied that they have aimed to select a vegetarian alternative at least from time to time. One interviewee also replied that selecting vegetarian meals is influenced more by the related health benefits rather than climate impacts.



CASE: Climate Meal campaign

Mission Zero Foodprint project implemented the Climate Meal campaign in autumn 2021. The aim of the campaign was to encourage restaurants to calculate the carbon footprint of their meals and to offer their customers climate-friendly alternatives. During the campaign, restaurants had access to tools for calculating the carbon footprint of meals and the Climate Meal label developed together with the restaurant industry in the project.

The Climate Meal label can be given for a meal with a total carbon footprint of no more than 1.0kg CO₂e, which puts it well below the Finnish average. Currently, the average carbon footprint of Finnish meals is about 4.8kg CO₂e a day. According to Sitra, the Finnish Innovation Fund, the carbon footprint of food should decrease by 60 per cent in the future if we want to achieve the climate targets set.⁴⁴

Restaurants welcomed the campaign with enthusiasm, and it involved some 50 restaurants from the Helsinki Metropolitan Area. The Climate Meal label and its criteria are also openly available for the restaurants after the campaign. More information on Climate Meal: www.ilmastoannos.fi



PART 3:

Promoting the Change with Digital Solutions



The project tested digital solutions that support the management of carbon footprint and food waste. Three companies were selected for the experiment. Their solutions were tested and developed together with the project's pilot restaurants.



The Norwegian TotalCtrl provides restaurants with a digital inventory management system that allows them to manage their inventory in real time. Read more: <https://totalctrl.com/>



Hukka AI: A digital application that allows restaurants to measure and reduce their food waste - while saving costs. Read more: <https://hukka.ai/>



Clonet Oy developed a meal climate counter based on OpenCO2.net intended for restaurants and cafés. The calculator enables operators in the sector to assess the size of their carbon footprint and so develop their communications and activities. Read more in Finnish: <https://www.clonet.fi/palvelut/aterian-ilmastolaskuri/>

Other tools that support restaurant activity

TIP: Other digital solutions designed for food waste management:

- Lukeloki, in Finnish (<https://www.luke.fi/ravintolafoorumi/lukeloki-2/>)
- Hävikkimestari, in Finnish (<https://www.cgi.com/fi/fi/tuoteratkaisut/aromi/havikkimestari>)
- Biovaaka (<https://biovaaka.fi/en/>)

TIP: An enterprise resource planning system for restaurants developed by Jamix also provides information about the carbon footprint of used ingredients. The Unilever web browser counter also enables users (<https://fi.co2ufs.com/autostart#/main>) to view the carbon footprint of different ingredients.



HUKKA AI food waste management application

Reducing food waste is one way of reducing the climate impact of restaurant operations. For being able to manage food waste, it is essential to understand how much food is consumed and where the food waste comes from. The first step in the management of food waste is to measure the amount of food produced and the amount of waste generated at different stages. While you can track food waste with just a scale, and a pen and paper, Hukka AI offers a digital solution for tracking and managing food waste. This makes it easier to track and analyse data, and helps optimising the amount of food you order and cook. Monitoring and optimising food waste and consumption will help you reduce food waste and the resulting CO2 emissions, as well as save you some money.

This is how you use Hukka AI to measure food waste:

To get started, you need a scale that allows you to weigh food waste and a terminal device (for example, a mobile phone / tablet) to enter the data in HUKKA AI.

1. Entering lunch lists and costs in Hukka. The cost information enables you to later track the amount of money spent on food waste.
2. Every day, the amount of food produced and the food waste generated must be recorded in the Hukka system. Food waste can include storage and kitchen waste, serving or buffet line waste and customer plate waste. You also add the daily number of customers to Hukka.
3. Before starting to use the application, you should think about what will be measured and by whom. The daily monitoring of food waste does not take much time, but it is important that the monitoring is part of the restaurant's everyday processes.
4. Start daily food waste tracking! At the beginning,, all you need to do is to enter food waste quantities to Hukka!
5. Once the application has been collecting data on the amount of food waste for some time, it is possible to go through the information and consider what factors affect the generation of food waste and how it can be changed. With Hukka's visual analytics and recommendations, it is easy to monitor how much food waste is generated and which dishes cause the most waste. In addition, Hukka helps you understand how much customers eat and how this information should be taken into account in the planning of orders, menus and production quantities. You can also use Hukka to track the monetary value of food waste and how much money can be saved by reducing food waste.

OPENCO2.NET Climate calculator for meals

Clonet Oy has developed a simple climate calculator for restaurants and cafés. The data calculated using the calculator can be used for comparing the climate emissions of different food portions, making a recipe more climate-friendly, and for customer communications and marketing. Calculating climate emissions also helps to perceive and understand the most important factors contributing to the emissions of a meal. During a trial period, the restaurants testing the calculator noticed that the calculator helped them to better understand the climate impacts of their activities and meals, and also to understand what kind of information about their own activities should be examined for the purpose of calculating climate emissions. (www.clonet.fi)



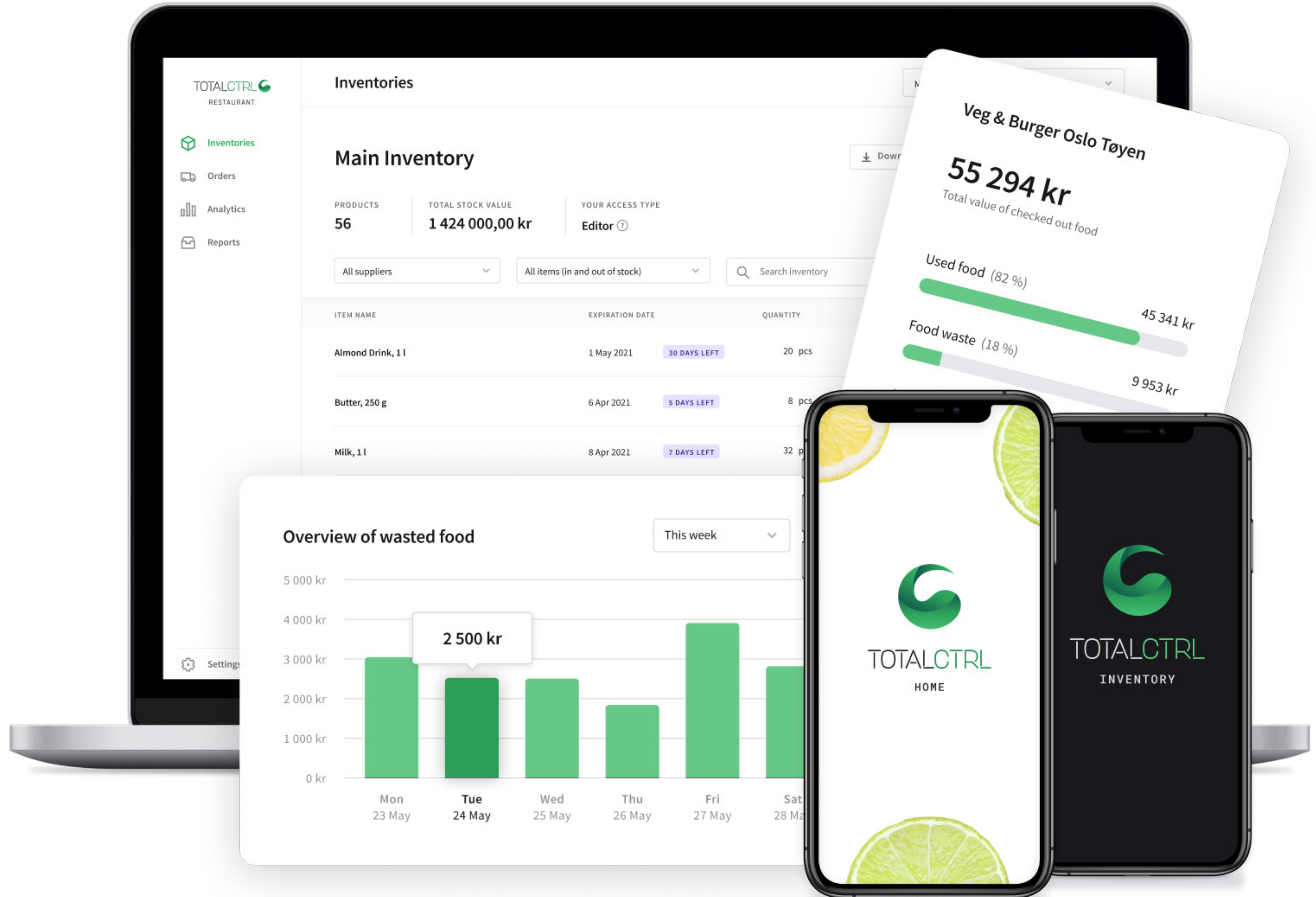
How to get started with calculating your carbon footprint


1. Determining the climate impacts of a meal in a restaurant or a café requires information on both the company's operations and the ingredients used. You can start the calculation with these steps:
2. Select the meal and recipe for which you want to calculate climate emissions.
3. Determine the quantities of ingredients used in the preparation of the meals and their origin.
4. Figure out the details and quantities of electricity, heat, cooling and gas used in the restaurant.
5. Enter the above information in the Climate Counter to obtain the climate emissions of one meal in kilograms and a comparison with car emissions.
6. By changing the ingredients or the meal size in the counter, you can learn about the climate impacts of different choices and develop a more climate-friendly recipe.
7. Decide how you want to take advantage of the results of the calculation in your customer communications.

TotalCtrl

A restaurant can save time and money and reduce emissions by digitalising its inventory management. The TotalCtrl Restaurant tool gives restaurants a real-time view of their storage: the system tells you what ingredients are in the restaurant's storage, when they should be used at the latest, and what they are worth. The tool also helps users check the contents of loads arriving at the restaurant and to monitor the contract prices of the ordered ingredients.

To enable the tool, the restaurant needs the delivery lists of incoming ingredients in PDF format. The system scans the required data from the list and exports the data to the system. Restaurant staff can access the application on their mobile phone or computer to view the current storage situation and its economic value.





PART 4:

Restaurants and Carbon Footprint - Examples of Measures Taken by Restaurants

A total of nine restaurants from the Uusimaa region participated in the project. This section provides examples of measures that help restaurants reduce their climate impact.

Reducing unavoidable food waste:

CASE: Measuring and managing food waste in BarLaurea

Food waste has been monitored in the teaching restaurant BarLaurea of Laurea University of Applied Sciences for several years. Waste management begins at the food ordering stage, so that not too much food is ordered in relation to the number of customers. This enables preventing excess food from spoiling. The stock cycle is also taken care of at the food preparation stage, i.e. ingredients that are easily perishable or those whose best before date is approaching are used first. Food waste is also managed during service by anticipating the amount of food to be served, especially at the end of lunch. At the end of service, the service waste is weighed and marked up every day. The weighing process runs faster thanks to information about the tare weights of the serving dishes provided at the weighing point.

The amount of plate waste from customers is also weighed at the end of the day. At a daily afternoon meeting, the staff review the amount of food waste together and the reasons for the waste and how it could be prevented are discussed. At the end of the day, the staff get to eat the remaining food and can also take some home. As a result, the amount of food that is wasted is actually less than the amount weighed.

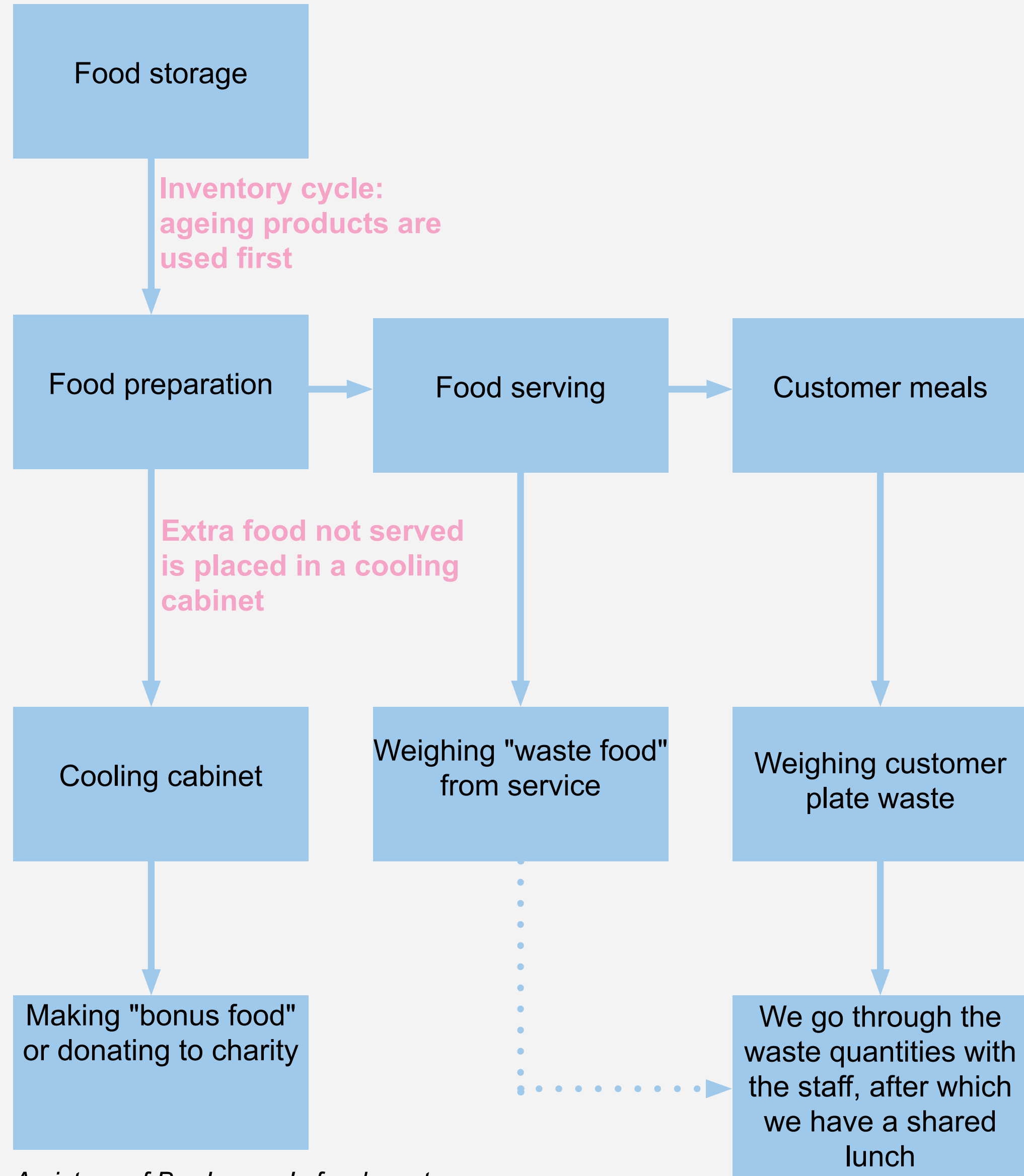
TIPS FOR MONITORING WASTE:

- Think about what to weigh, when and by whom
- Make shared rules for weighing, what quantities are marked, where and how?
- Make weighing a part of the restaurant's normal daily activities
- Digital applications facilitate monitoring and analysis of food waste quantities, making it easier to plan measures to reduce waste



Photo: From BarLaurea's weighing point and the visible tare weights on the wall. The tare weights speed up weighing surplus food.

Order quantities for food are proportional to customer quantities



A picture of Bar Laurea's food waste process.



Anticipation and planning in reducing food waste

Anticipation and planning play a major role in reducing food waste. When we know how much customers eat and what foods they eat, we can also better anticipate how much food we should cook.

At the end of lunch, it is also a good idea to consider how much and what food should be served. In the final stage of service, only one buffet line can be used and the amount of food served can be reduced, for example by reducing the size of serving dishes. This means that the extra food left in the kitchen can be cooled down and used, for example, for lunch the following day.

Case ROIMA: Cutting down the menu, towards less food waste

Restaurant Roima reduced its lunch menu as a means of managing food waste. One warm lunch option was removed from the restaurant lunch list. Instead, customers often have one extra option that makes use of the food that has been left over from the previous day, ingredients whose expiry date is approaching or other small quantities of food left in the storage, the least likely to be used. This flexibility in food preparation enables reducing both service and storage waste. In addition, food waste in Restaurant Roima is taken into account in the planning of lunch menus. By tracking food waste, it is possible to take into account which dishes are not consumed and they can be excluded from the menu.



At the end of lunch in Restaurant Roima, coffee is also served from smaller containers to avoid food waste

CASE: Bonus food in BarLaurea

BarLaurea anticipates the amount of food to be served and uses only one buffet line at the end of the service. Smaller quantities of food are also served. If too much food has been produced, extra food that has not been served can be used later. In BarLaurea, this extra food, which has already been prepared, is offered the following day as so-called "bonus food", meaning that customers are offered an extra lunch option the following day.

Reduce plate waste - involving customers in reducing food waste

Customers contribute to food waste. For example, in buffet canteens, it is easy to accidentally put more food on your plate than you can actually eat. However, efforts can be made to influence the activities of customers, for example by means of nudging and by communicating the importance of reducing food waste.

What on Earth is nudging?

The purpose of nudging is to guide the customer's behaviour in the desired direction without any prohibitions or regulations. The aim is to guide the person discreetly to make the desired choices. One example of nudging in restaurants is the use of smaller serving dishes, utensils and plates. The aim is to guide the customer to take smaller portions in an aim to reduce the amount of uneaten food left on the plate.⁵²

Restaurants have experimented with nudging with good results:

1. A hotel reduced food waste generated at its breakfast service by nearly 20 per cent by urging customers to return to the buffet later for more food if necessary and by reducing the plate size..⁵³
2. In Sweden, in Café Taube, vegetarian dishes were placed first on the menu and presented as favourite dishes using signs. When the name of one vegetarian portion was changed to a more attractive one, its sales increased by 275 per cent. As a result of the measures, the total consumption of vegetarian foods increased by 76 per cent.⁵⁴
3. In Sweden, the GamifyUs conference served vegetarian food as the default option, and 90 per cent of visitors chose the vegetarian dish. In the previous year, when a meat dish was the default option, vegetarian food consumption was 12 per cent.⁵⁵
4. A Finnish study increased the supply of vegetarian food in a restaurant and placed vegetarian food first on the buffet line, resulting in a 10-per-cent increase in vegetarian food consumption.⁵⁶



Examples of nudging

In Mili's Food and Cafe, smaller serving dishes and utensils were introduced to the salad buffet. Dividing the food into smaller serving portions enabled presenting only the required quantity of food. If not all food cooked for the buffet was not consumed during the first day, it could be offered to customers the following day. Reducing the size of the dishes also made it possible to make the salad buffet more versatile and attractive to the customers.



At Krapihovi's dinner buffet, smaller utensils, plates and serving dishes were used to guide customers to take smaller quantities of food on their plates.



At Mili's, the size of the biowaste container used by customers was also reduced and it was placed in a prominent location at the recovery point of the plates. The aim is to make the amount of biowaste generated visible to the customers and aim to influence their behaviour in this way.

Nudging can also be used to influence the behaviour of restaurant staff. For example, smaller biowaste containers were introduced in Mili's Food and Cafe kitchen and placed in a visible location. This way, during food preparation, the chefs constantly see how much food waste is generated.

When the amount of biowaste generated from the processing of ingredients is always visible in the kitchen, it helps to pay more attention to the amount of waste generated and to consider ways of making more efficient use of ingredients.



CASE: Communicating about food waste (BarLaurea)

BarLaurea communicates about food waste to customers and informs them about how they can influence the reduction of food waste themselves. BarLaurea is a lunch restaurant, so perhaps the most important message to customers is that you can always come and get more food, so there is no need to put extra food on the plate just in case. In addition, the customers are informed daily about the amount of food waste generated. It may be difficult to get a concrete sense of amounts presented just in kilos and grams, which is why the amount of waste generated in BarLaurea has always been reported using a concrete example.

TIPS FOR CUSTOMER COMMUNICATION:

- Openly describe the objectives of the restaurant to reduce food waste and what role customers play in achieving the objectives.
- Avoid using a blaming tone.
- It is also good to communicate about things that are self-evident to the restaurant. For example, customers may not know whether they can get more food or not.
- Think about when communications should be continuous and when you should organise a campaign.
- Avoid long text. Pictures and short, concise text are the best way to get the message across.
- Think about where communications reach the customer the best.



AMMATTIKORKEAKOULU
University of Applied Sciences



**Asiakashävikki 17.2.2021
oli 6,7kg. Ruokailijoita oli
115, joten lautastähdettä
kertyi n. 58g per henkilö
eli yhden rainbowin
vaniljadonitsin verran.**



CASE: Restaurant Dylan's customer communications

Restaurant Dylan communicated the restaurant's food waste reduction targets to customers: which measures the restaurant has taken and how the customer can help achieving the goal, as well as reminders about selling surplus food after lunch. For customers, finishing the plate seems to be self-evident, but they had rather neutral attitudes towards the subtle reminder. The customers also felt that the communication creates an image of a responsible business.



VÄHENNÄMME HÄVIKKIÄ 20%

SINÄ VOIT AUTTAA!

Ota vain sen verran ruokaa, kuin jaksat syödä.

RUOKAA SAA HAKEA LISÄÄ!

Muistathan, että voit aina santsata.

HÄVIKKIRUUAN MYYNTI

Hävikkiruokaa on myynnissä lounasajan jälkeen. Kysy lisää henkilökunnalta.

What if too much food is left over anyway?

Even if we try to anticipate and predict how much food should be prepared and served, food is sometimes left over. Especially in restaurants where customers serve themselves, anticipating and evaluating the amount of food consumed may be challenging, for example due to changing customer numbers. However, restaurants have different possibilities for their surplus food.

CASE: Kotipizza & ResQ Club

Kotipizza uses the ResQ Club application to sell its food waste pizzas. Food waste pizza can mean a pizza made with wrong fillings or pizzas that do not exactly meet the Kotipizza's quality standards; the pizza may be slightly torn or the wrong shape. Fluctuations in demand also mean that, sometimes, the best before dates of ingredients start to approach. In this case, pizza sold through the ResQ Club can be prepared from these fillings. Selling waste pizza through the ResQ Club app saves both the environment and money. Because of the use of the ResQ Club, small mistakes in the kitchen are not so serious, as pizzas with small defects can still be used and do not end up as food waste.

In fact, Kotipizza rescued a total of 21,000 pizzas in 2020, all of which would have otherwise ended up as food waste. This has reduced food waste in restaurants as much as by 25 per cent.



CASE: Mili's Food and Cafe food waste display case & Unwasted application

Mili's Food and Café makes ready-made portions of surplus food and sells them to its customers from a food waste display case in the restaurant. Food waste is also sold through the Unwasted application. In addition to food portions, the Unwasted application can also be used to sell "surprise food bags" containing, for instance, products whose expiration date is approaching.

In this way, the Unwasted application can reduce food waste caused by both for extra food and for old products and ingredients. Although the Unwasted application is currently mainly used in the Turku region, it can also be introduced in restaurants elsewhere in Finland. This way, all the restaurant has to do is let its customers know about the application.





CASE: Take away lunch at Roima and Dylan Corner

The food on offer can also be sold as take away after the end of the lunch service, which enables reducing food waste that would otherwise end up thrown away. This is an excellent way to reduce the amount of food waste that usually ends up in the waste bin.

After lunch at Restaurant Roima, you can buy discounted take away food.

Dylan Corner's goal is to reduce waste by 20 per cent, and one way to reduce waste is to sell surplus lunch at a reduced price after lunch.

CASE: Pizzeria Via Tribunali & pizza crust

As the plate waste from customers cannot be used in food preparation, efforts should be made to reduce the plate waste in advance. In Pizzeria Via Tribunal, it was noted that a large proportion of food waste consists of uneaten pizza crust. As a result, the restaurant began to consider how this could be reduced. Consequently, a new "pizza sauce" product concept was developed in the pizzeria. The new product consists of Italian sauces that fit the restaurant's brand, to which customers can dip their pizza crusts. At best, a new product concept increases turnover and reduces food waste at the same time.



CASE: Donating BarLaurea food to charity

For a long time, BarLaurea has been striving to pay attention to food waste and minimising it. One way to reduce food waste is to donate food to charity. BarLaurea donates leftover soup to Manna Apu Ry, which distributes usable products donated by shops and food business operators to those in need.



Reducing the carbon footprint of meals

CASE: Making recipes more climate-friendly in Mili's Food and Cafe

The lunch buffet offered by Mili's Food and Cafe is specifically aimed at young athletes. They have two options on weekdays, one of which is completely vegan. The customer base consists of a large number of athletes, and when updating the restaurant's recipes it is important to make sure that the athletes will get necessary nutrients from both lunch options.

Mili's Food and Cafe used the Meal Climate Calculator developed by Clonet to calculate the carbon footprint of its food served in the lunch buffet and ensure that a vegan option is always the better option for the customer. At the same time, the recipes used for the buffet were renewed and the carbon footprint of the meals reduced, for example by replacing beef with pork, chickpeas, and by adding vegetables to the meat. In addition, information about the more climate-friendly vegan alternative is provided to customers on a signboard.



Climate-friendly alternative for young athletes

CASE: Introduction of renewable in Kotipizza restaurants

The energy consumption of restaurants has a significant impact on the carbon footprint of meals. Efficient equipment and manufacturing methods can reduce energy consumption. While energy is used in cooking and storing food, using low or zero-emission energy sources can reduce emissions caused by energy consumption.

Kotipizza has started to reduce its carbon footprint in its restaurants by gradually switching to green electricity in its restaurants. The aim is that pizzas are baked with climate-wise electricity whenever possible in all Kotipizza restaurants by the end of 2023. This also supports the long-term goal of Kotipizza to produce completely carbon-neutral food by 2030.



Photo: Tero Peltoniemi

Increasing the availability and marketing of vegetarian and vegan alternatives

Vegetarian and vegan products often have a lower climate impact compared to meat and dairy. This is why increasing the availability of vegetarian and vegan products and communicating about their availability can have an impact on the choices made by customers and it can also bring new customers to the restaurant.

According to a survey commissioned by Verso Food, 43 per cent of approximately 1,000 respondents were interested in increasing the amount of vegetables in their diet, and 48 per cent of the respondents felt that experimenting with vegetarian dishes in a restaurant was easier than when cooking them at home.

CASE: Oat milk as a vegan alternative

Krapihovi increased the availability of vegetarian and vegan alternatives in their menu. In addition, oat milk was offered a vegan alternative to regular milk.



CASE: Vegan label

Pizzeria Via Tribunal has introduced a green vegan label to clearly inform customers about the vegan meals available at the restaurant.

CASE: Vegan cheese

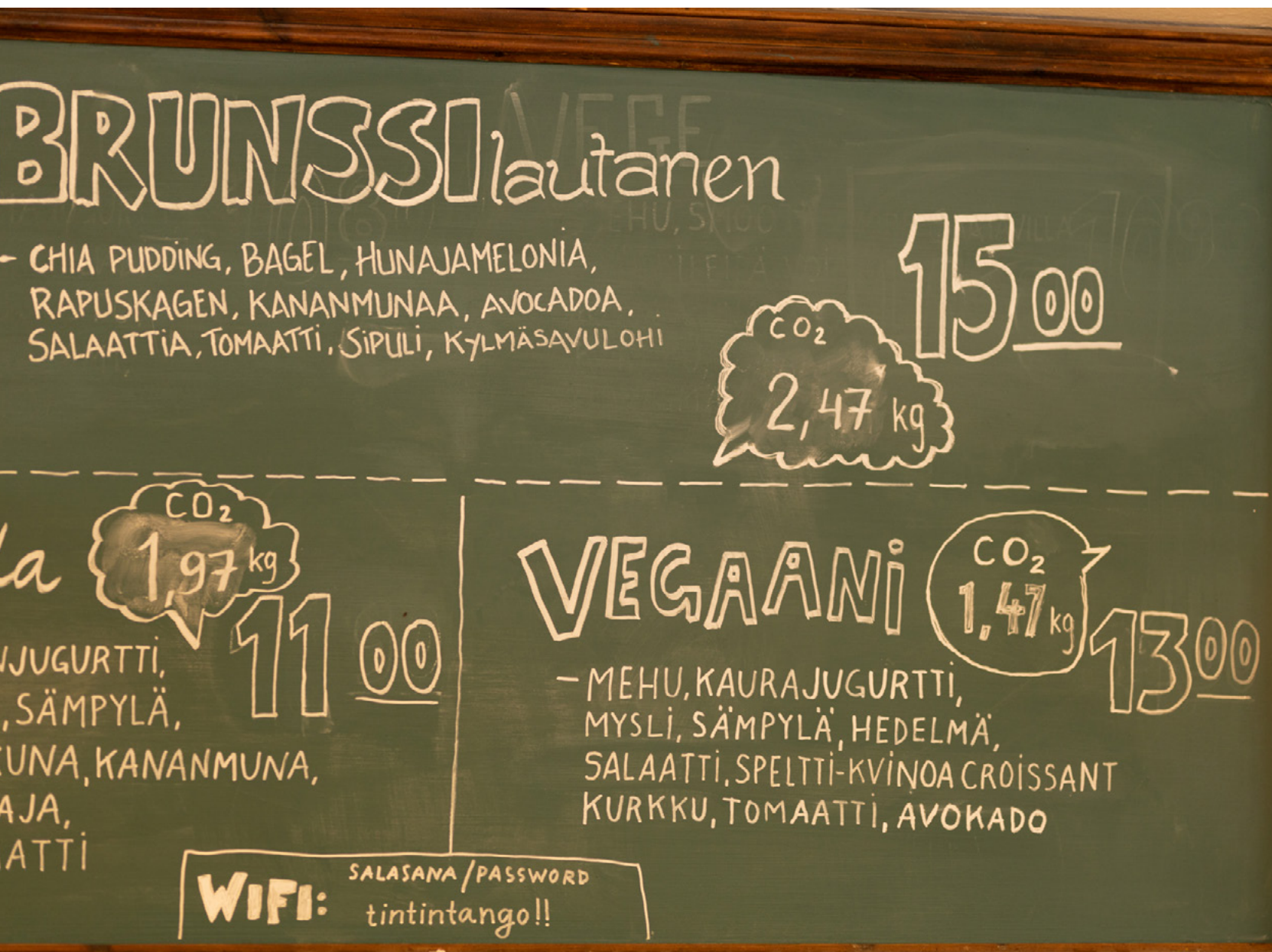
Kotipizza tested the Clonet carbon footprint counter to calculate the carbon footprint of their pizzas. A surprising result was how much the cheese used in pizza affects the carbon footprint of pizzas. Customers can now choose to replace the cheese used in Kotipizza's pizzas with Valio's vegan cheese product without an additional charge. As a result, any customer can try vegan cheese without additional costs.



Photo: Kotipizza

Customer communication

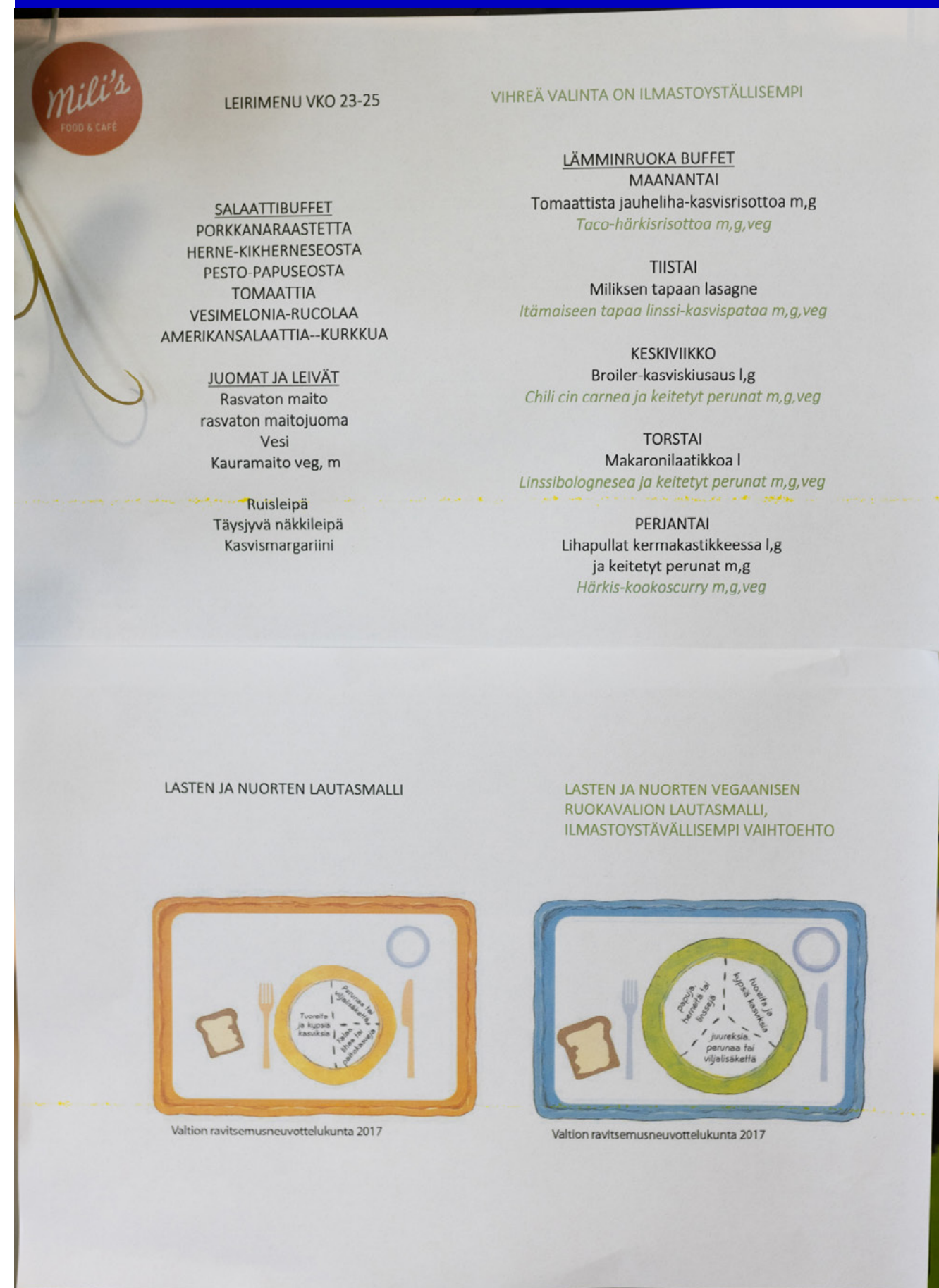
By calculating our carbon footprint, we can gain more understanding of the climate impacts of our products and how to reduce them. Carbon footprint information can also be communicated to customers, and restaurants can provide their customers with information and an opportunity to choose a more climate-friendly alternative.



CASE: Communicating about carbon footprint to customers

Tintin Tango calculated the carbon footprint of its breakfast foods and provides information about the carbon dioxide emissions of meals as part of its menu. Although it may be difficult for many people to comprehensively understand the amount of emissions actually involved, customers have nevertheless thanked the restaurant for its transparency and for its efforts to raise awareness of its carbon footprint among customers.

Mili's Food and Cafe communicates about its climate-friendly dishes using a green colour on the menu. In addition, young people are given instructions on the correct plate model of a vegan diet.



At BarLaurea, you will also find information on the environmentally friendly lunch option on the restaurant's menu board.

PART 5:

Responsibility as Part of the Restaurant Brand: Examples of Responsible Restaurants



Actions speak for themselves

Before long, restaurants that are capable of turning the challenges of responsibility and sustainable development into opportunities will emerge as winners. As many as 83 per cent of Finns would like to favour restaurants with a small carbon footprint when eating out in the Maailman ruokatrendit 2020 (World food trends) report commissioned by Kespro. 62 per cent of Finns would be willing to pay more for restaurant food produced ethically and in a climate-friendly manner.

However, responsibility must be more than just a buzzword in the company's strategy. Actions must speak for themselves. "Responsibility is a continuous approach guiding our decisions and activities", says Luka Balac, Restaurant Nolla. In restaurant Nokka, responsibility is also strongly involved in everyday activities, "Every day, we can learn new things, or at least we must think about how things could be done more sustainably", says Restaurant Manager Terhi Vitikka.

Based on sources: ⁵⁸, ⁶⁵, ⁶⁶ ⁶⁷

A restaurant can make responsibility a highly visible part of its brand in its advertising, or choose to not make any reference to it. Nevertheless, according to Matt Orlando from the top restaurant Amass in Copenhagen, the best way to communicate about responsibility to customers is to make good food. "First of all, we do not want to preach to those who eat here. I believe that the best way to influence people is to offer excellent food and then share how we do it. But the food must be delicious, otherwise our work would be pointless."

This section presents case examples of restaurants in Finland, Sweden, Denmark and United Kingdom. These restaurants have responsibility in common; it has become a part of their brands. The restaurants and restaurant chains may approach responsibility measures in different ways, but they all perceive these as concrete, customer-oriented activities connected to everyday operation.



CASE: Restaurant Nokka - Recipes from nose to tail

Nokka, a restaurant located in an old brick storage building in Katajanokka, Helsinki, has been an advocate for Finnish, responsibly produced clean ingredients since 2002. Their co-operation with small producers, which began almost twenty years ago, continues today.

At the core of restaurant Nokka's ideology is the thorough utilisation of responsible ingredients. The restaurant operates based on three principles: "Forest to table", "nose to tail" and "beginning to end".

"Forest to table" brings versatile Finnish plants, mushrooms, herbs, berries, fish and game to the customer's plate based on the harvest periods. Executive Chef Ari Ruoho hunts some of the game served in the restaurant himself and goes to collect bladder wrack used in the cooking.

According to the "nose to tail" principle, all parts of the animal are used as fully as possible. In Nokka, most of the game comes as whole carcasses that are cut in the restaurant kitchen. All ingredients are used as carefully as possible to minimise food waste. For example, the bones and waste pieces of game animals are boiled for stock and trimming pieces of fish are utilised in other foods. Nokka actively monitors the biowaste accumulation of each kitchen workstation to ensure that no usable ingredients are discarded.

"Beginning to end" means, among other things, doing it yourself. Bread is baked with Nokka's own sour dough starter and cold cuts are cured in the restaurant's own meat container. An artisanal approach is strongly visible in the restaurant's food philosophy.

A while back, Ari Ruoho launched the idea of "eating the Baltic Sea clean", which means changing the status of undervalued fish, including bream and pike, into valued fish. Nokka uses wild fish with a stock resistant to fishing, and the fish is always Finnish.

Nokka's philosophy is visible elsewhere in the restaurant, for example, the work clothes worn by staff are made of recycled textiles. As to tableware, the restaurant co-operates with a ceramic manufacturer, and any broken dishes are sent back to the manufacturer for grinding, after which they can be used in the restaurant as bread plates.

Executive Chef Ari Ruoho brings up one more example of the restaurant's philosophy: "We've also found a way to reuse deer tail hairs; they are used for making lures for fishing."

[Discover Restaurant Nokka](#)

Based on sources: ⁶⁸

#nokastahäntään
#foresttotable



CASE: Restaurant Nolla - Responsibility involved in all choices

Lauri is the hardest worker at Nolla, the first zero waste restaurant in the Nordic countries. Lauri works 24 hours a day without a break in the corner of the restaurant. Lauri is a compost that turns the restaurant's biowaste into dirt. The dirt is delivered to ingredient producers, who make use of it in their own activities. This is what the circular economy is about.

The entire operating principle of Restaurant Nolla is based on minimising food waste and environmental effects, and this principle can be seen in all the restaurant functions starting from food preparation. Restaurant Nolla utilises seasonal organic ingredients from local producers, used to make tasty and innovative food while respecting environmental values. The delicious food and the comfort of customers is of primary importance to Nolla, but this is done through the reflection of responsibility aspects.

The restaurant does not accept ingredients deliveries in single-use packaging; instead, these are returned to the sender. Instead, ingredients are delivered in hard plastic boxes, from which they are transferred to the restaurant's own containers. Small producers have viewed this approach positively, because it is also more cost-effective for them. For larger producers, this has caused more challenges. Of ingredients, oils and vinegars are delivered to the restaurants in large, 200-litre refillable packaging. Dishes with lids are used in the restaurant to avoid unnecessary plastic wrappings.

The objective of Nolla is to produce no food waste at all; used frying fats are made into soap, plant cutting waste is used for making whole vegetable syrup, and water left over in jugs is used in the restaurant for washing floors. In addition, chefs are challenged to consider how to reduce the amount of biowaste, which is why each has a personal container for biowaste generated during food preparation. It is also the responsibility of the chefs to consider how the generated biowaste could be utilised, which has led to creating some new ideas for dishes such as fried fish bones and leek stem chips.

The restaurant's glasses and dish ware are also mainly made of recycled glass and clay. In addition, recycled materials have been utilised in the restaurant textiles, for example, the work clothes are made of old hospital sheets, while napkins are made of old tablecloths. The restaurant has taken energy issues into consideration by using wind power, and LED bulbs are used in the lamps. The goal of Restaurant Nolla is to always select the best available solutions for the environment.

[Discover Restaurant Nolla](#)

Based on sources: ⁶⁹, ⁷⁰



67
Nolla's water containers are made from wine bottles



Chef/owner of Amass restaurant Matt Orlando in his restaurant garden.

Photo: Christian Bach (Team Amass)

CASE: Restaurant Amass - A pioneer in sustainable development

Amass, a restaurant in Copenhagen, Denmark, is one of the world's pioneers in sustainable development and zero waste thinking. Amass is located in a former shipyard area in Refshaleøen, in an old, large industrial storage building.

Amass is originally the creation of an American chef, Matt Orlando. Orlando's has an impressive CV. He has worked in some of the world's most famous restaurants (e.g. Per Se, Fat Duck and Noma). When Orlando opened Amass in 2013, he not only wanted to create a world-class restaurant, but also one that would serve as a pioneer in sustainable development.

Since 2013, Amass has reduced the amount of waste by 75 per cent and the annual water consumption by 5,200 litres. At the end of each day, all the water that has been left over of the customer tables or cooking processes is recovered and used for purposes such as washing floors or irrigating gardens.

All the ingredients used in the restaurant are either fully used up or given a new form. The ingredients that are no longer used are then composted, ending up as dirt in the restaurant's garden. The restaurant's old cooking oil is made into biofuel.

In 2021, Matt Orlando received the La Liste Ethical & Sustainability Award, and Amass got the White Guide Sustainable Restaurant of the Year prize in 2017, as well as first place in the 360° Eat Guide, which focuses on responsibility and gastronomy, in 2019 and 2020. Matt Orlando was also the keynote speaker at the final event of the Mission Zero Foodprint project.

[Discover Restaurant Amass](#)

Based on sources: ⁷¹

CASE: Max Burgers - Climate-friendly hamburger chain

Max Burgers is a Swedish family-owned fast food chain established in 1968 in Gällivare, Northern Sweden. It is Sweden's most popular fast food chain and its expansion began in the 1980s from Northern Sweden to Stockholm. Today, the chain has more than 170 restaurants worldwide.

In 2018, Max Burgers was the first in the world to launch a climate positive menu. Climate positive means that instead of 100 per cent, the company compensates 110 per cent of its entire value chain emissions. To compensate for its emissions, Max Burgers uses Plan-Vivo certified wood planting projects that are carried out in Uganda, Malawi and Mozambique, for example. These projects support local small farmers by providing local employment opportunities and sustainable food and energy sources.

Max Burgers calculates emissions from its operations comprehensively ("from farmers' land to guests' hand"), including, for example, land use, customer and staff's commutes to the restaurant, waste and the cooking process. The restaurant's calculation method complies with the independent carbon neutrality standard ISO 14021.

Before that, Max Burgers has also taken several other measures to reduce emissions. In 2018, all its Swedish restaurants introduced wind electricity, and in the same year, CO2 labelling was launched in the menus of all its restaurants. Max Burger has also focused on reducing food waste with good results, the percentage of food wasted is below 1 per cent.

In 2016, Max Burgers launched the "green burger menus" (lacto-ovo and fully plant-based hamburgers) with explosive sales growth. The company's goal is that in 2022, half of the burgers it sells will be produced without beef. In 2019, Max Burgers was awarded the Global Climate Action award. Max Burgers also encourages other companies to become climate-friendly and works as an adviser on the clipop.org website.

[Discover Max Burgers](#)

Based on sources: ⁷²



Max Burger's plant-based burger has been granted the Quality Innovation Award 2020. Photo: Max Burgers



“Waste is just a failure of imagination.”

Douglas McMaster

CASE: Silo - Closing the loop

One of the principles of Douglas McMaster's Silo restaurant is that there are no waste bins in the restaurant. Restaurant Silo has operated in three different locations. Originally, Silo was opened in Melbourne, Australia in 2011. McMaster, originally from the United Kingdom, got the idea of a waste bin free restaurant from a local artist, Joos Bakker.

In 2014, McMaster moved back to his home town, Brighton, and transferred his restaurant operations there. At that time, the restaurant was Britain's first "zero waste" restaurant. Five years later, in 2019, Silo was opened for the third time, now in a former factory building in East London.

McMaster is known worldwide as a guru of zero waste thinking and approaches, and as a critic of the food industry. His goal is to create a waste-free food production process where compost mass from the restaurant is returned to the earth that produces food for the restaurant, thus closing the circle.

According to McMaster, 85–90 per cent of all ingredients used in Silo end up in people's stomachs (in most restaurants this figure is about 50 per cent). The remaining 5 per cent or so is recycled and the rest end up in a compost in the restaurant premises, which produces up to 60 kg of compost per day. As the amount of food that ends up in a compost in Silo is so small, other restaurants in the neighbourhood also use the compost.

In Silo, everything is carefully considered. In the kitchen, the restaurant's own mill is used to grind bread flour, and butter and oat milk are made in the restaurant. Silo's menu is vegetarian, but there is also meat and fish on offer based on the nose to tail principle, where all edible parts of the animal are used as fully as possible. Ingredients are delivered to the restaurant from local producers in reusable boxes. Wines are stored in barrels and served directly in glasses or recycled wine bottles. A small brewery in the neighbourhood produces fermented drinks for restaurant use, for example, from kitchen mill by-products. The restaurant's furniture is made of recycled materials such as plastic bags and food packaging. The dishes are made of crushed wine bottles.

Although Douglas McMaster is passionate about his zero waste thinking, the most important thing for McMaster is that the customers enjoy Silo. "Customers come to the restaurant to have fun and enjoy. If they want to ask us about the zero waste ideology, of course we will tell them, but it is not our job to teach them. Not during a night out anyway."

Discover Silo London

Source:

Chesse, O. 2021. Meet Douglas McMaster, Chef and Owner at Silo, in London (UK). *Chefs for Impact*. Accessed on 29 October 2021.

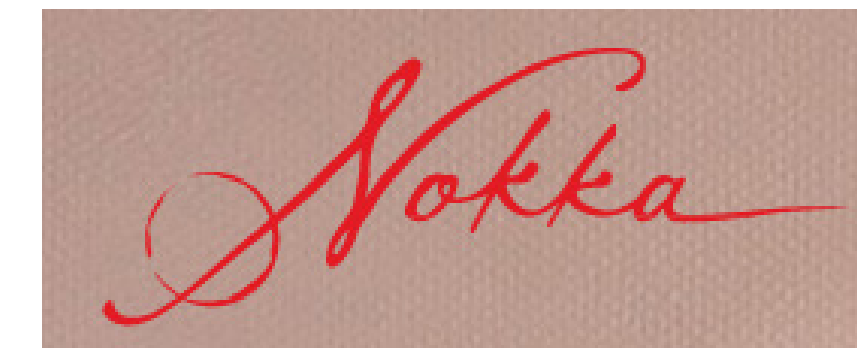
<https://www.chefs4impact.org/post/meet-douglas-mcmaster>



*In restaurant Silo, the menu is projected on the restaurant wall
Images: Restaurant Silo*

Discover Mission Zero Foodprint pilot restaurants

In the Mission Zero Foodprint project, nine restaurants from the Uusimaa region participated in piloting digital solutions and testing operating models. The restaurants experimented with the digital solutions they selected during the project and invented and implemented various practical measures to reduce the climate impacts of restaurants. Visit the restaurants' websites and the Laurea Showcase blog platform, which contains a lot of good blogs on the project themes and the pilot restaurants.





Kotipizza has about 300 entrepreneur-led restaurants around Finland. In the project, the digital solution that Kotipizza tested was Clonet's meal climate calculator. The efforts to define carbon footprint and reduce climate impact will continue, and the aim of Kotipizza is to offer carbon-neutral food products by 2030. One concrete example of reducing carbon footprint is the transition of the Kotipizza restaurants entirely to wind electricity. Kotipizza also strives to reduce food waste by selling pizzas through the ResQ Club food waste application. [A blog about the restaurant](#)



Mili's Food and Cafe is a café and restaurant located in the Leppävaara Sports Park in Espoo, which offers its customers lunch and café products. During the project, efforts were made to reduce food waste, for example, with smaller biowaste containers, and by reducing serving dishes and utensils. In addition, extra food is sold in the restaurant's food waste display case and through the Unwasted application. Mili's Food and Café also offers a climate-friendly vegan lunch without forgetting the nutritional needs of young athletes. In addition, calculating the carbon footprints off meals has made the recipes more climate-friendly. [A blog about the restaurant](#)

Dylan Corner is a lunch restaurant located in Vallila, Helsinki. The restaurant began monitoring the amount of food waste with the digital HUKKA AI. Monitoring food waste helps to understand where waste is generated and to plan measures to reduce it. In fact, Dylan provides information about food waste to customers and what they can do to reduce it. In addition, extra lunch food is sold at the end of the lunch service during the Hävikkipartti (food waste quarter), allowing customers to buy excess food as take away at a lower price. [A blog about the restaurant](#)



Photo: Heikki Sikström

Pizzeria Via Tribunali serves genuine Naples-style pizza cooked in an open-fire oven in its restaurants in Helsinki, Äkäslompolo and Turku. Characteristically to the Naples style, the menu contains a lot of vegetarian pizzas, and a green vegan mark has also been printed on the menu to communicate about completely vegan pizzas to customers. Carbon footprint calculations helped to perceive the environmental impacts of products, and as a result, Pizzeria Via Tribunali develops new products that can help reduce food waste and also carbon footprint. [A blog about the restaurant](#)





Restaurant Roima is a cafeteria in Vantaa. During the project, Restaurant Roima experimented with Hukka AI for monitoring food waste. Roima strives to reduce the amount of food waste generated by better planning and anticipation, using the flexible menu concept and communicating to customers how they can participate in reducing food waste. In addition, after lunch, extra food is sold to customers as take away at a lower price. [A blog about the restaurant](#)

Ravintola Nokka is a restaurant located in Katajanokka, Helsinki. Responsible and domestic ingredients are at the core of its operations. The activities of Nokka are guided by three principles: "Forest to table", "nose to tail" and "beginning to end". The aim is to utilise all ingredients as thoroughly as possible, to make use of natural resources that grow in the wild, as well as to prepare food artisanally in the restaurant kitchen as much as possible. [A blog about the restaurant](#)

BarLaurea is a teaching restaurant located in Leppävaara, Espoo, which offers lunch to its customers on weekdays. For decades, BarLaurea has been monitoring the amount of food waste it generates and taken steps to reduce it. The causes of food waste are discussed daily with staff and students. BarLaurea strives to reduce food waste by anticipating, utilising the remaining food in the next day's lunch service and donating it to a food bank. [A blog about the restaurant](#)

Tintin Tango is a lunch café located in Töölö, Helsinki. During the project, Tintin Tango determined the carbon footprint of its breakfast products using Clonet's meal carbon footprint calculator. Carbon footprint labels for breakfast products are displayed to customers, and customers can make their choices based on the climate impacts of the meal. [A blog about the restaurant](#)



Krapihovi offers both accommodation and restaurant services in Tuusula and organises various events. Krapihovi's activities are guided by the restaurant's own environmental programme and the implementation of its measures. Krapihovi favours seasonal food and local producers; in fact, an excellent example of local production is apples and honey produced in Krapihovi's own garden. [A blog about the restaurant](#)



Project presentation



This section present various measures that can reduce a restaurant's climate impact. You can pick up suitable activities for your own operation and use them as a basis for creating ideas for new activities.



Reducing unavoidable food waste

Storage management:

- Planning storage and orders for the anticipated customer quantity.
- Using the same ingredients for as many meals as possible.
- Using different ingredient parts in recipes (Nose to Tail).
- FIFO (First in - First out) & FEFO (First Expired - First Out) principles for storage management.

Monitoring and taking food waste into account in planning:

- Monitoring and measuring food waste, discussing where food waste is generated and how it could be reduced.
- Keeping a list of food waste and monitoring the dishes that end up as food waste and developing the menu based on demand.
- Anticipating the number of customers is anticipated by comparing it with previous years.
- Flexibility with menus: if one dish runs out, it is not the end of the world, food is not prepared just in case.
- Using small and transparent biowaste containers in the kitchen, and ensuring that everyone working in the kitchen takes responsibility for their own food waste.
- Reducing and bringing out biowaste containers in both the kitchen and the restaurant to make food waste visible to both staff and customers.

Portion sizes:

- Offering different portion sizes (S, M, L, XL).
- Offering an opportunity to buy half a portion.
- Offering an extra serving at a small additional price.
- Offering lower portion sizes in main courses at a lower price. Providing an opportunity to order several portions.
- Changing the plates to smaller ones in a buffet line lunch.
- At the end of the serving, changing to one line and serve smaller quantities of food.
- Reducing pick-up points in the buffet line when it appears that there is a lot of food available, customers tend to leave food on the plate.

Customer communication:

- In the buffet or the line section, informing customers that they are allowed to have an extra serving so that customers do not take too much food at one go.
- Communicating about the amount of plate waste to customers, for example by sharing information about the daily food waste in kilograms.
- Rewarding customers if they do not create food waste, for example, if they return an empty plate, coffee is free of charge.
- Ensuring that staff recommends products that are under threat of being wasted.
- Promoting opportunities for customers to buy food waste.



Reducing the carbon footprint of food:

Recipes:

- Reduce the amount of meat in meals.
- Increase the proportion of vegetables in meat dishes. Example: Add vegetables to Bolognese sauce in addition to minced meat.
- Prefer game and Finnish meat instead of foreign beef (WWF meat guide)
- Favour Finnish fish (WWF fish guide).
- Introduce vegetable protein products.
- Add a source of vegetable protein to the salad table: At the same time, the share of meat can be reduced without reducing the total protein content of the meal, for example, add beans to the salad table if the main course is a vegetarian soup.
- Take advantage of wild natural products.
- Use less frozen food because freezing increases the use of energy.
- Replace rice with domestic cereals.

Building the menu:

- Including vegetarian dishes as part of a normal menu (no need for a separate vegetarian menu), as this normalises vegetarian dishes, or presenting vegan and vegetarian dishes first in the menu to draw the customer's attention.
- More vegetarian dishes on the menu, offering a variety of options
- Having one meatless or vegetarian day a week.
- Improving the taste, structure and appearance of vegetarian dishes - making sure that vegetarian dishes are as attractive as possible.
- Providing an opportunity to add meat to vegetarian dishes for an additional price
- Introducing vegetarian versions of popular meat dishes.
- Offering not only milk but also vegetarian beverages such as oats, soy and almond drinks.

Advertising/communication:

- Boosting vegetarian food campaigns in social media communications, for example, a Meat-free March
- Advertising vegetable alternatives in the restaurant space.
- Offering samples of the new vegetarian dishes.
- Giving special offers for vegetable dishes.
- Using positive adjectives when describing vegetarian dishes on the menu.
- Explaining which vegetable dishes are particularly popular with customers.
- Offering vegetarian food at a lower price than other dishes on the menu.
- Using markings on the buffet line - climate-friendly choice, vegan lunch, responsibly fished.
- Clearly mark vegetarian and vegan alternatives in the menu, for example with symbols.
- It's the taste that counts! Focusing on communicating the good taste of vegetarian food.

- Giving vegetarian foods a visible spot in the buffet line and the buffet.
- Making more room for vegetarian food in the buffet line and in the display cabinets.
- Improving the attractiveness and appearance of self-service dishes containing vegetarian food.

Staff involvement:

- The staff should have an opportunity to taste the vegetarian dishes.
- Vegetarian food training for staff -> Information for staff on the environmental and health benefits of vegetarian food and ready sales speeches to customers.
- Positive attitudes towards vegetarian and vegan food in the restaurant's management team.
- Incentives for staff to sell and prepare vegetarian foods.
- A rotating vegan challenge for staff - everyone takes turns to plan a vegan meal.



Improving energy efficiency:

Energy source:

- Find out the source of the energy used in the restaurant.
- Find out if it is possible to switch to green energy.
- Replace gas with biogas.

Food preparation

- Use properly sized dishes to prepare food, for example an oversized kettle takes unnecessary energy.

Pay attention to how you work:

- Do not run water to defrost frozen foods.
- Ventilation should be used in the kitchen only when needed.
- The heating lamps in the buffet line should be only used when the food is served.
- Not keeping the ovens on when they are not used.
- Not keeping refrigerators and freezers on when empty.
- Monitoring the temperatures of refrigeration equipment (e.g. digitally).

Equipment solutions:

- Motion sensors for lights (wherever possible).
- Pay attention to the energy efficiency of appliances, for example induction hobs are the most energy efficient solution in cookers.
- Take care of the equipment, condition checks and maintenance on time.
- Sensors for refrigeration equipment (alert if door has been left open).

More information about the terms

Carbon footprint

Carbon footprint (CO₂e) refers to the climate load caused by a product, activity or service = the amount of greenhouse gases generated during the life cycle of a product or activity. The concept of carbon footprint is an indicator that can be used to assess the impact of various actions and consumption choices on global warming. Carbon footprint measures the amount of greenhouse gases caused, for example, by eating cheese or driving a car. Carbon footprint usually consists of transportation, food and drink, energy used and the amount of waste. In addition, the use and manufacture of materials causes part of the carbon footprint. The product's carbon footprint or the company's total carbon footprint may vary greatly, and it is calculated on a case-by-case basis. Different companies report their carbon footprint in various ways, which means that different things are included in the calculation of the total carbon footprint.^{59, 63}

Carbon handprint

Carbon handprint investigates the positive climate impacts of products or services that the company can achieve by creating products or services that reduce the customer's carbon footprint. The carbon handprint is the difference between the carbon footprint and the product used. This means a product or service that allows for footprint reduction and its producer 'gets' a handprint. Reducing your own footprint is not a handprint. As an example, if the restaurant offers a vegetarian meal and the customer eats it instead of a meat burger, a carbon handprint will be created for the customer. In other words, the restaurant, in a way, reduces the customer's carbon footprint. The purpose of the handprint is to calculate the positive climate impacts of using a product or service. The handprint indicates a positive environmental impact, so it should be as large as possible. The handprint can be used in a company's marketing and communications and in finding new opportunities for achieving a positive handprint more often. The handprint calculation process provides an opportunity to search for development targets that better meet the needs of customers and the emissions targets of society. The handprint is calculated for the selected situation and user. Without a user who uses the product, there can be no carbon handprint.^{59, 62}

Carbon neutral

Carbon neutrality means that the company's net carbon footprint is zero, i.e. the activity does not change the carbon content of the atmosphere. The carbon footprint of a carbon-neutral product throughout the life cycle is zero. The company can utilise carbon neutrality paths in its business operations and change comprehensively, i.e. better take responsibility aspects into account in all its activities and corporate culture. A business based on carbon-neutral solutions can also help others (stakeholders, customers) move towards carbon neutrality and create a carbon handprint. The smart solutions and tools needed for charting the carbon neutrality of food service companies are used, and the change achieved is made visible to consumers through right kind of communication. For restaurants, complete carbon neutrality can be difficult to achieve without compensation for emissions.^{60,62}

Compensation

Compensation means abolishing one's own climate disadvantage by reducing or binding the amount corresponding to one's own emissions elsewhere. Compensation is therefore not a concrete measure to reduce one's own food waste and carbon footprint, but it is a better option than doing nothing. In compensation, emission units are purchased and cancelled. Various service providers are available for this purpose. They transmit emission units produced by projects in developing countries. The projects focus on the use of renewable energy, forest protection, restoration of swamps or, for example, reforestation. It is also said that the emission reduction must be additional. This means that it would not have been possible to afford this project without the income that came from the sale of emission units and no emission reduction would have taken place without the project. When the emission reduction generated is real and measurable, compensation is genuine.^{61,64}

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The significance of responsibility, and environmentally friendly and meaningful actions will increase as competitive factors in restaurants, and customer awareness and values will add pressure for this. All sectors have their own environmental impacts, but for restaurants, these are quite large. According to the Natural Resources Institute Finland, over one fifth of carbon footprints are created from food production and consumption. Reducing the carbon footprint of operations does not necessarily require you to make huge changes in what you do; everyday choices can play a major role in the environment. You can continue to create experiences for your customers with good food, drink and service, but in a more sustainable way and more cost-effectively.

This is a project Mission Zero Foodprint workbook for you and everyone involved in the restaurant sector, which contains all useful pieces of information for climate action and effective measures in the restaurant sector. The workbook also gives you tips on how to communicate about your climate actions to your customers and partners. Be at the forefront rather than lagging behind. In the end, everyone will participate in the reduction of emissions. We hope you will find these tools for a better future useful!

Mission Zero Foodprint