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Strategic Impact Assessment

Moving from gut feeling to data-driven decisions

Determining the environmental impacts of RIJKS and Wils

Contents

Chef’s foreword

Moving from gut feeling to data-driven decisions

I am proud to present the first report of our review of the environmental impact of the restaurants RIJKS and Wils. It reflects how our day-to-day operations and the ingredients we use affect the environment.

As the hospitality sector, we play a crucial role in the food value chain. Our responsibility goes beyond ensuring that our customers receive delicious food. We also need to acknowledge, assess and manage the impact we have on the environment and broader society to become a more responsible business.

At RIJKS and Wils we started a journey towards becoming more sustainable. The combination of culinary excellence with ecologically friendly commitments; by considering the origin and seasonality of ingredients, looking to reduce waste when cooking, using entire animals and less popular cuts of meat. But I felt something was missing in my approach: the executive decisions I was making felt right, but I was lacking the scientific data to back up my gut feeling. Understanding the impact of the choices we make, be that in terms of the ingredients we choose, or our use of utilities, is a step towards enabling us to make informed, data-driven choices to manage our environmental footprint.

For this review we collaborated with Deloitte NL and PRé Sustainability to assess the environmental impact of the two restaurants. For me the exercise has yielded valuable information on the operational management of the two restaurants. Perhaps the most surprising finding was the far deeper environmental impact due to the other air emissions associated with the ingredients – particularly beef, pork and butter – than that of carbon emissions. Interestingly, water consumption was highest in non-animal derived ingredient use. Those findings confirmed some of our initial assumptions, but also highlighted other hotspots to be considered for future decision-making.

Through this assessment we hope to inspire our peers so that together we can create a better, more sustainable food sector where we drive positive change. I hope you find the insights valuable and practical and that you can use them to enact positive change in your own business.

Joris Bijdendijk

Executive summary

Key results and takeaways

Executive summary (1/3)

Key insights

RIJKS and Wils are Michelin Star restaurants based in Amsterdam. Having an intrinsic motivation to understand their footprint, and be proactive in terms of their sustainability choices, they have collaborated with **Deloitte NL and PRé Sustainability** to assess their environmental impacts.

The basis for the assessment was set out by Deloitte's proprietary Strategic Impact Assessment framework (SIA), which supports organisations in assessing and managing their social, economic and environmental performance. Life cycle assessments (LCAs) have also been used, as part of the impact measurement of the ingredients.

During this assessment phase, the focus has been on the utilities of both restaurants, and the ingredients they have sourced throughout 2022.

For these activities, the following environmental impacts were considered: **CO_2e emissions, other air emissions, land use, water consumption and water pollution.** Each impact was quantified in terms of its monetised environmental impact. The analysis highlights the cost to society of the ingredients and utilities the restaurants used.

Key insights of the assessment that should be considered:

Data

To regularly assess their impact and improve accuracy, restaurants should obtain supplier-specific data on the ingredients sourced. In addition, they must keep track of their use of utilities, for a more accurate assessment of own operations.

Ingredients

Depending on the impact of ingredients, restaurants can experiment with different menu options, to decrease their environmental impacts and engage with farmers that have improved sustainability practices.

Communications

For a broader impact, restaurants should collaborate with internal and external stakeholders, and engage with other restaurants, to create a more sustainable and transparent food supply chain.

Executive summary (2/3)

Key insights

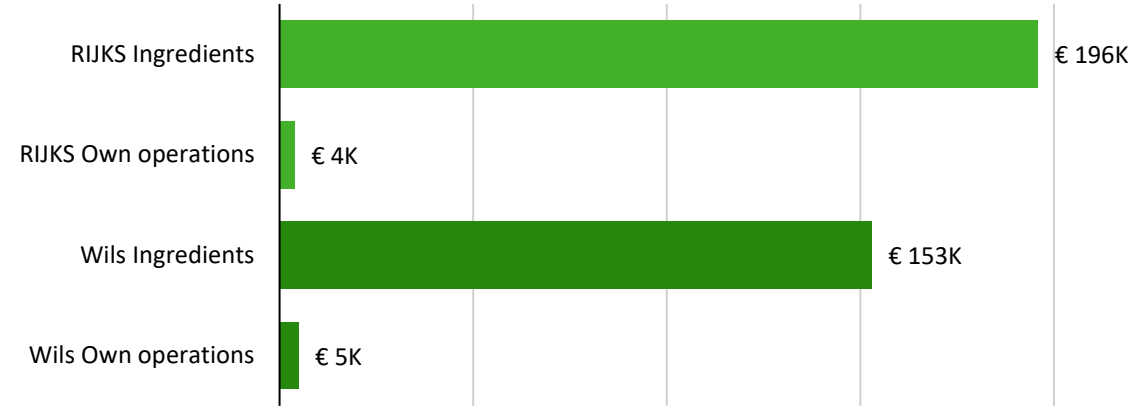
The Strategic Impact Assessment of RIJKS and Wils provided valuable insights into the restaurants' total environmental impacts and the impact per guest in 2022.

Environmental impacts of the restaurants

- The total **monetised environmental impact** of the utilities and ingredients for RIJKS is €200K, whereas for Wils it is €158K. This shows that **RIJKS** has a **higher absolute impact** on the environment compared to Wils.
- For both RIJKS and Wils, the environmental impacts of **the utilities** of the restaurant (e.g., electricity use, water use, etc) are **significantly smaller** than the impacts caused by the used ingredients. The monetised environmental impacts of the utilities of RIJKS and Wils are €4K and €5K, respectively.

Although the total absolute monetised impact is higher for RIJKS than Wils, Wils has a larger impact per guest. This is due to a significantly higher number of guests served at RIJKS in 2022.

Total monetised impact ingredients and own operations



RIJKS **Wils**

Monetised impact per guest

€6 **€12**

Executive summary (3/3)

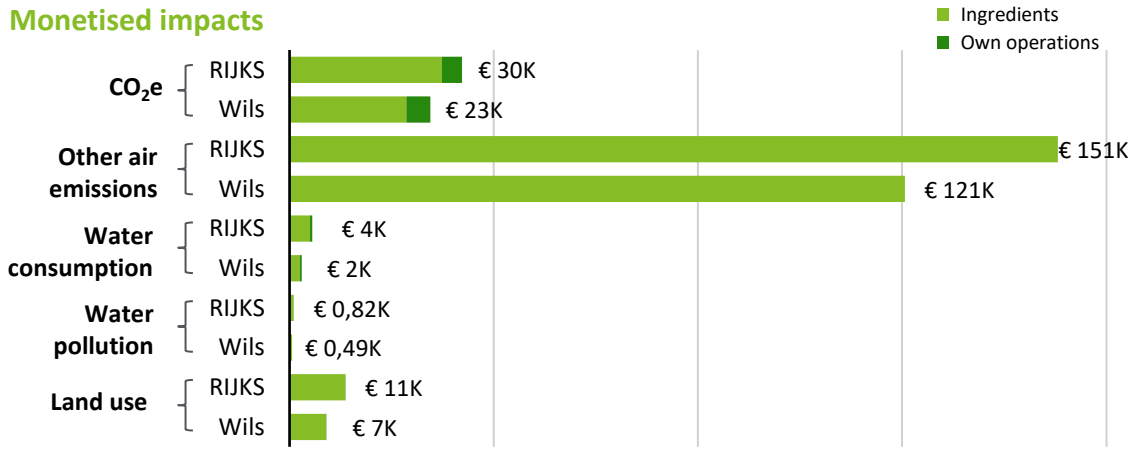
Key insights

The restaurant assessments also provided insights into the hotspots, highlighting which ingredients caused the greatest impact and required most attention. For example, the assessments indicated that both restaurants generate most of their impact through other air emissions, and that beef consumption has the highest impact on the environment.

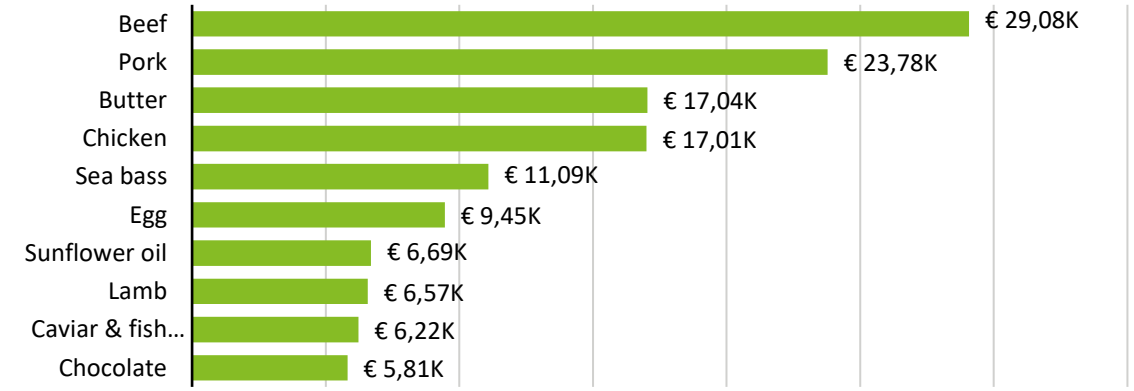
Environmental impacts deep dive

- The monetised impacts split out per impact show that both restaurants contribute most significantly through **other air emissions**, while also having a considerable impact through **CO_2e emissions**.
- **Beef** has the most material impact on the environment, followed by **pork.**
- In the highest-impact category (other air emissions), the following ingredients contribute the most: **beef** and **pork** at RIJKS, and **beef** and **octopus** at Wils.
- Within the CO_2e impact category, the following ingredients contribute the most: **beef** and **butter** at RIJKS, and **beef** and **pork** at Wils.

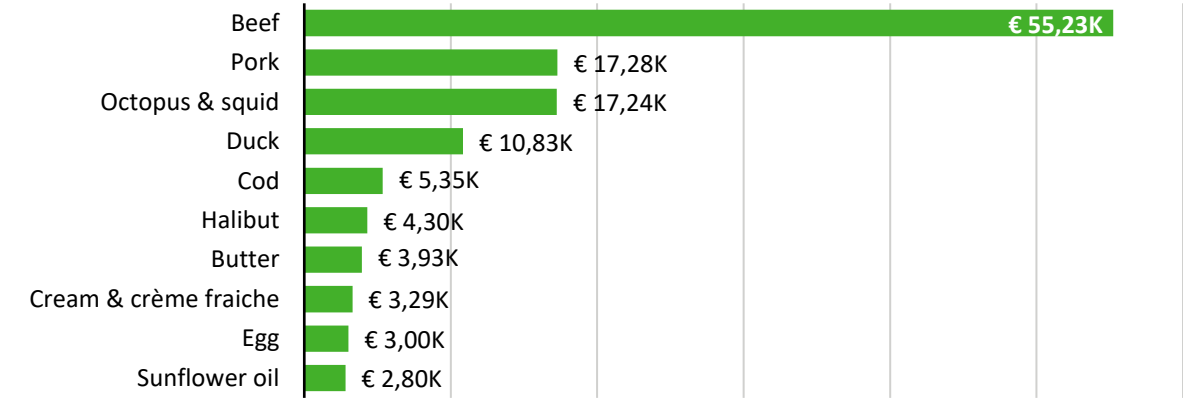
Monetised impacts



Top 10 ingredients for RIJKS



Top 10 ingredients for Wils



Project context

Sustainability-related challenges restaurants are facing

Project context

Understanding the importance of assessing the environmental impacts of restaurants

Why sustainability matters to restaurants

Both restaurants have the ambition to become more sustainable, but face challenges in understanding what actions they could take, and why.

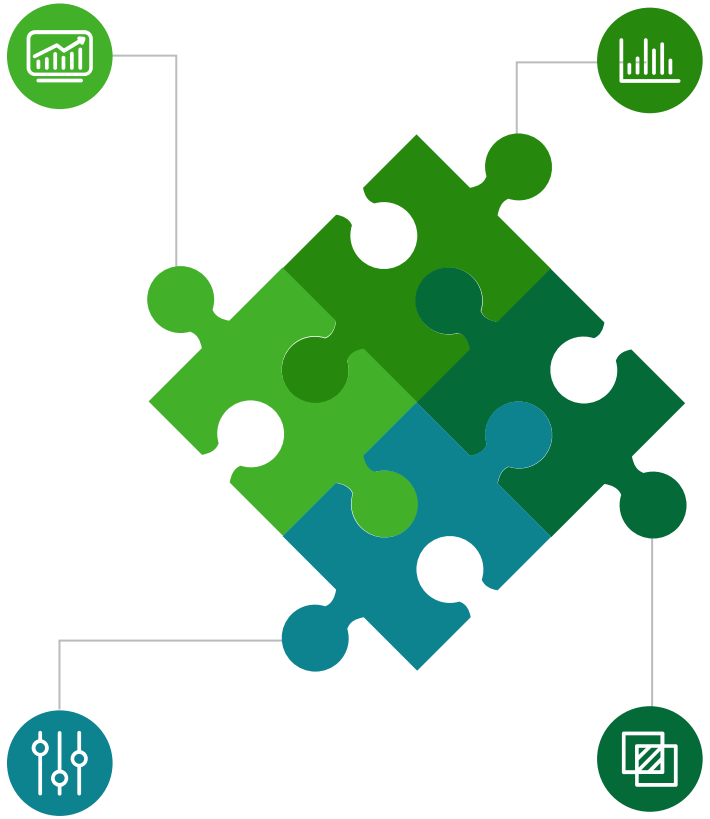
This project is designed to act as proof of concept for RIJKS and Wils, for them to understand where they are now in terms of sustainability of their operations and the ingredients they purchase, and which actions they should take to improve their environmental performance. The project's long-term goal is to have more high-end restaurants follow this approach and better manage their environmental footprint.

High-end restaurants are typically trend setters, and therefore have an influence (which could be positive or negative) on the wider restaurant and catering industry.

The figure on the right reflects challenges restaurants face on their journey to contribute to a more transparent and sustainable food chain.

Reliable metrics
Restaurants need reliable metrics to be able to measure and manage their holistic impact

This involves a process of defining realistic and insightful metrics, which requires iterative input from multiple stakeholders



Data availability
There is scarce data availability of the environmental footprint of ingredients – especially those with a complex supply chain involving several actors and limited data transparency and traceability

Complexity of the food chain
Food supply chains are very complex and comprise multiple stakeholders. It is important to seek input from relevant ones to ensure activities are accurately recorded.

Lack of holistic view
The impacts in the food sector are presented in disparate metrics, which are hard to compare (kg, m^2, etc)

Project background

Restaurants overview

Participating restaurants

RIJKS and Wils are Michelin Star restaurants based in Amsterdam. Both restaurants took part in the impact assessment process to understand the current state of their environmental footprint.

	RIJKS	Wils
		
Overview	RIJKS opened in 2014, and is situated in the Philips Wing of the Rijksmuseum in Amsterdam	Wils opened in 2019, and is located beside the Olympic Stadium in Amsterdam
Cuisine	Its Low Countries' cuisine is centred on local Dutch produce	The restaurant's cuisine is inspired by fire, and food is cooked on an open flame
Ranking	RIJKS received a Michelin Star in 2016 and was included in the '50 Best Discovery' restaurants in 2019*	Wils was awarded a Michelin Star in 2021 and is listed by Lekker as one of the 500 best restaurants in the Netherlands**

*50 best discovery
** Lekker 500 best restaurants

Methodology

How to assess environmental impacts

Methodology

Scope of the assessment

Impact	Corresponding impact description	Source of impact from ingredients	Source of impact from own operations
CO_2e emissions	Impact of CO_2e emissions on human health, infrastructure and ecosystem services	Emissions resulting from producing and transporting the food product	Emissions from utilities and cooking processes (electricity consumption and charcoal used at Wils)
Other air emissions (SO_x, NO_x, $PM_{2.5}$)	Impact of other air emissions (SO_x, NO_x, $PM_{2.5}$) on human health		
Water consumption	Impact of corporate water consumption, which results in water scarcity, malnutrition for the wider society	Water used to grow and treat the food product	Water consumed at the restaurants when cooking and serving, and washing the dishes
Water pollution (P, N)	Impact of water polluted on human health and other species due to direct or indirect discharges of substances into water as a result of company activity	Water polluted due to direct or indirect discharges of substances into water as a result of production of an ingredient (e.g., pesticides)	n/a
Land use	Economic value of lost ecosystem services associated with the conversion and occupation of natural land areas	Land used to produce the food item	Land occupied by the restaurant

The scope of assessment was defined in accordance with impact assessment standards (Value Balancing Alliance, Capitals Coalition) to understand what environmental impacts should be considered when making decisions on how to reduce a restaurant's environmental footprint. The impacts were also selected in alignment with material topics in this sector.

Based on industry specifics and reliability of the data, we decided to incorporate the following impacts: **CO_2e emissions, other air emissions, water consumption, water pollution, and land use.**

As a first phase of this assessment, the focus has been placed on the environmental impacts related to the ingredients purchased by the restaurant, and its own operations.

Restaurants also create social and economic impacts, such as job creation and the health impact of food on the customers. These factors will be included in the next iteration of the assessment.

Methodology

Scope of the assessment

The individual ingredients (more than 6.000) sourced by the restaurants were mapped to the eight high-level categories showcased below, while, in total, our assessment considers **135 granular categories** (see page 31 for the full list). To assess the restaurants' own operational impacts, we analysed data on utilities and occupied land.

Ingredient category

- Seafood
- Other protein
- Fruit
- Vegetable
- Dairy
- Meat
- Carbohydrate
- Oil and miscellaneous

Environmental impacts

- CO_2e emissions
- Other air emissions
- Water consumption
- Water pollution
- Land use

Own operations

- Electricity consumption
- Gas/heating
- Water consumption
- Occupied land

Methodology

Approach

How to assess environmental impacts of a restaurant

Restaurant activities and the ingredients they purchase lead to environmental impacts, which subsequently might spur positive and negative changes in the wellbeing of wider society. So, the use of different resources, production, transportation of products and execution of services – which imply CO_2e emissions, water consumption and other impacts that accompany the value chain – create external (or hidden) costs or value for communities and wider society.

These changes can be measured and expressed in monetary values, which makes them intelligible to stakeholders, and allows businesses to manage their impacts – to increase positive ones and decrease the negative ones.

Life cycle assessment (LCA)

LCA is an established, science-based method to assess the environmental impacts related to a product or service. LCA focuses on all life cycle stages of a product: raw material extraction, manufacturing, distribution, use, and disposal. This method was used to obtain impact volume multipliers per ingredient (e.g., kg SO_x/kg beef).

Strategic impact assessment (SIA)

Deloitte NL's Strategic Impact Assessment (SIA) enables restaurants to quantify and understand their most material environmental impacts and their corresponding key drivers. Impacts are monetised by multiplying the impact's volume with a corresponding impact-specific price. More information on selecting the impact price is discussed in the Appendix.

Methodology

Process of assessing environmental impacts

Process of assessing environmental impacts of own operations

Get utilities data

- Collected the data on electricity usage, water consumption, land use and volumes of charcoal

Assess monetised impacts

- Applied SIA to obtain a holistic overview of monetised impacts
- Analysed the impacts, and identified hotspots

Define next steps

- Formulated potential strategic decisions and next steps towards decreasing environmental impacts of restaurants' own operations

Process of assessing environmental impacts of ingredients

List ingredients

- Collected the lists of ingredients purchased by RIJKS and Wils from their suppliers throughout 2022

Determine impact volumes

- Leveraged the **ingredient-specific impact volume multipliers** (obtained in collaboration with PRé Sustainability) to calculate the total impact volumes based on the ingredients sourced

Assess monetised impacts

- Applied SIA to obtain a holistic overview of monetised impacts
- Analysed the impacts, and identified hotspots

Define next steps

- Formulated potential strategic decisions and next steps towards decreasing environmental impacts of ingredients

Results

Insights from environmental impact assessments

Results

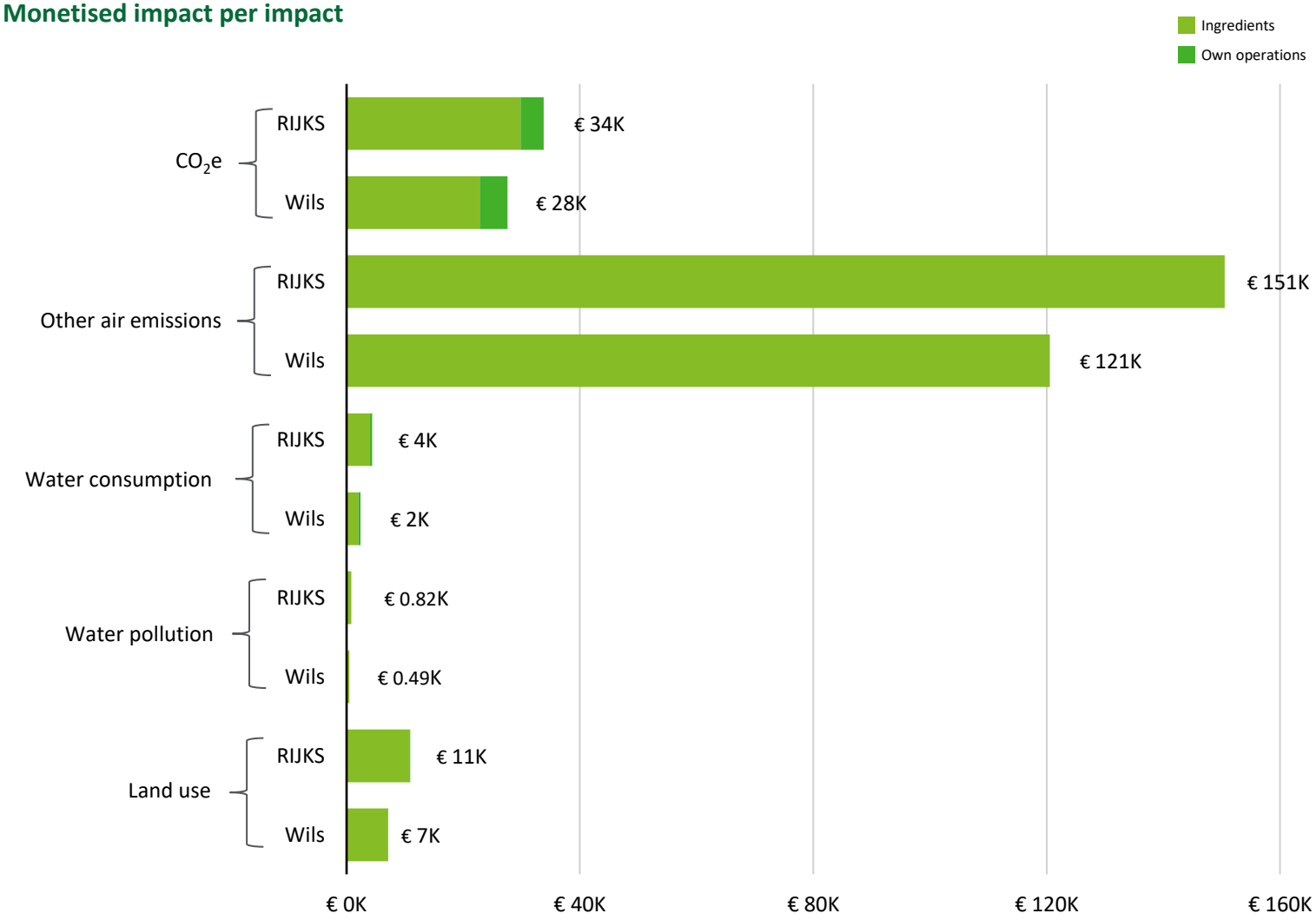
Comparing RIJKS and Wils per environmental impact

Based on the assessment, both restaurants have the highest monetised impact from the ingredients purchased. Comparatively, impacts of own operations are not material. The most impact is in the form of **other air emissions** (NO_x, SO_x, $PM_{2.5}$). The **ingredients** are the largest contributors, due to the **equipment and fuel used for machinery and transportation vehicles in fishing and farming**, which emit significant volumes of these other air emissions into the atmosphere.

Additionally, the CO_2e impact of the ingredients has the second-highest impact, due to transportation and the overall use of heavy machinery in the food sector.

The following pages contain deep dives into each impact, and what the key drivers behind the impacts are.

Monetised impact per impact



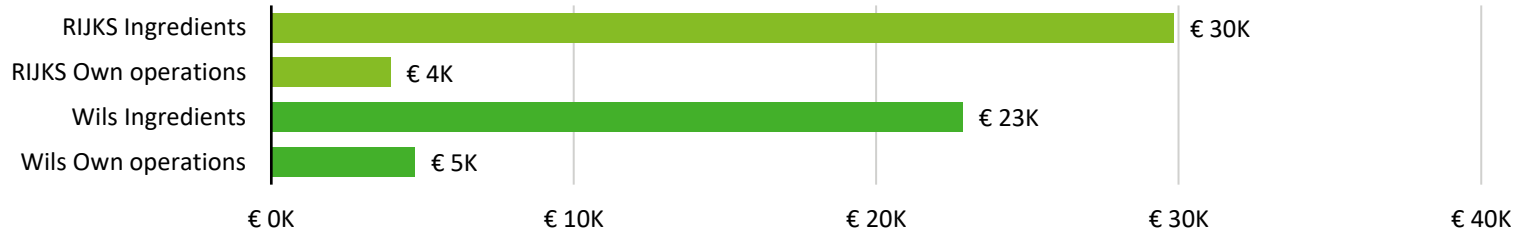
Results

CO_2e emissions

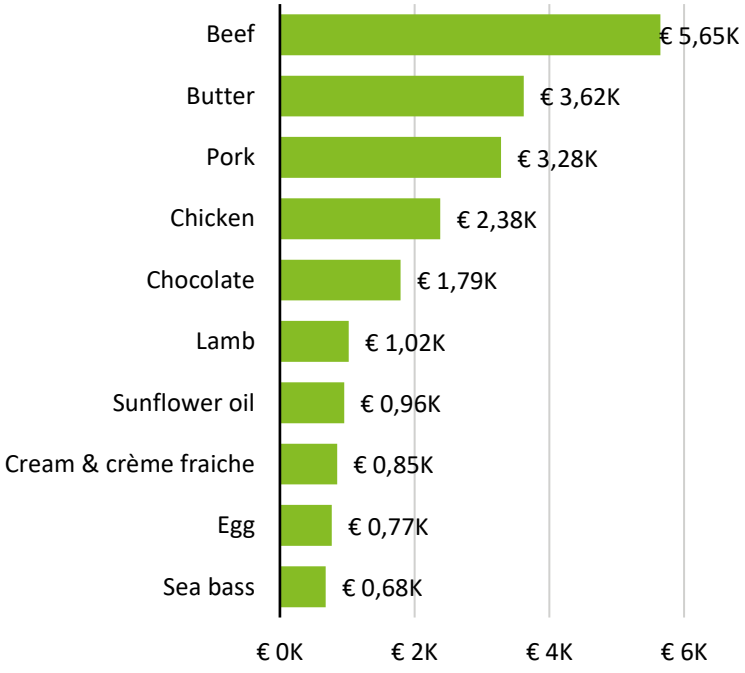
Key insights

Regarding the CO_2e emissions, the following ingredients contribute the most:

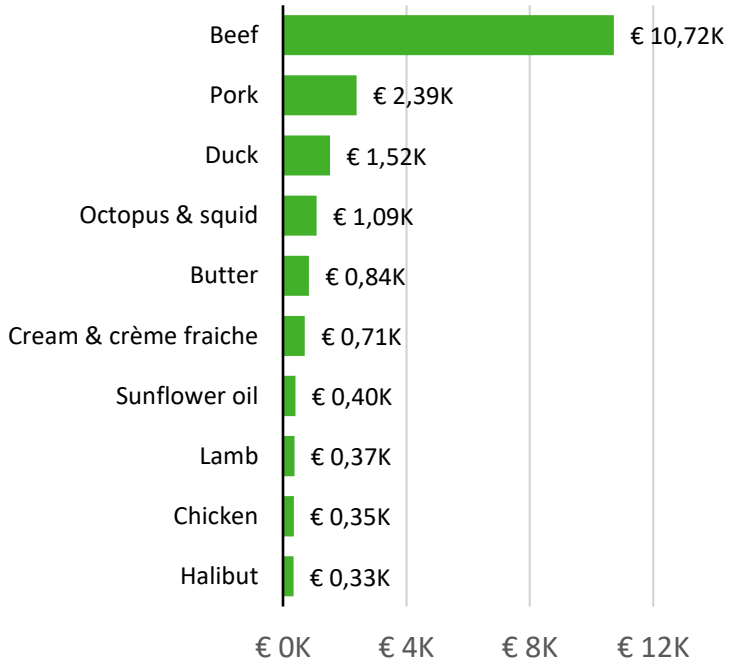
- The impact of CO_2e emissions from beef at Wils is approximately double that of RIJKS, due to greater consumption of this product. Beef at Wils accounts for 47% of the total CO_2e emissions impacts arising from ingredients.
- At RIJKS, butter is the second-largest contributor to CO_2e emissions, due to high consumption (being the main ingredient in all dishes), and the CO_2e-heavy production process.
- Animal-based ingredients account for 64% of the CO_2e impacts across both restaurants.



Top 10 ingredients - RIJKS



Top 10 ingredients - Wils



Results

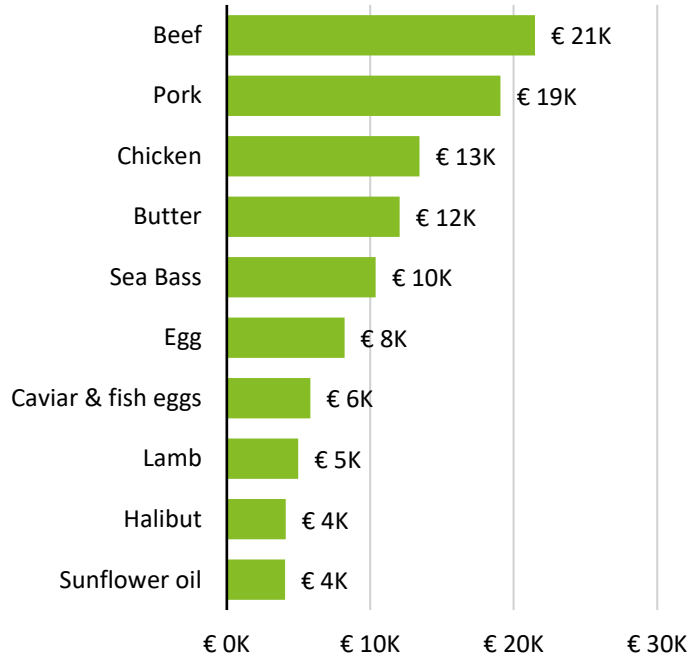
Other air emissions

Key insights

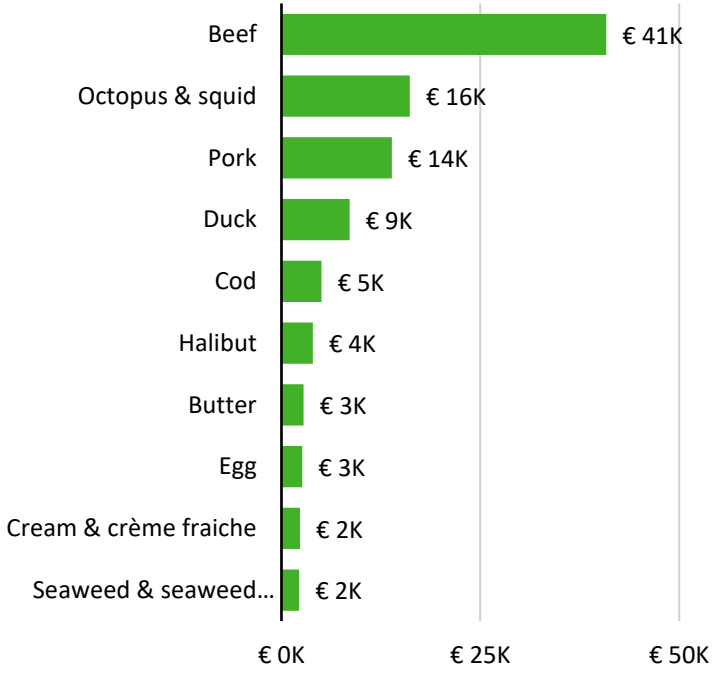
The ingredients below account for most impact of other air emissions in both restaurants:

- At RIJKS and Wils, beef accounts for most of the impact of ingredients, corresponding to 14% and 34%, respectively.
- Pork is the second-most impactful ingredient (13% of total) at RIJKS, whereas at Wils, it is octopus and squid (also 13% of total).
- Animal-based ingredients account for 55% of the other air emissions impact across the two restaurants.

Top 10 ingredients - RIJKS



Top 10 ingredients - Wils



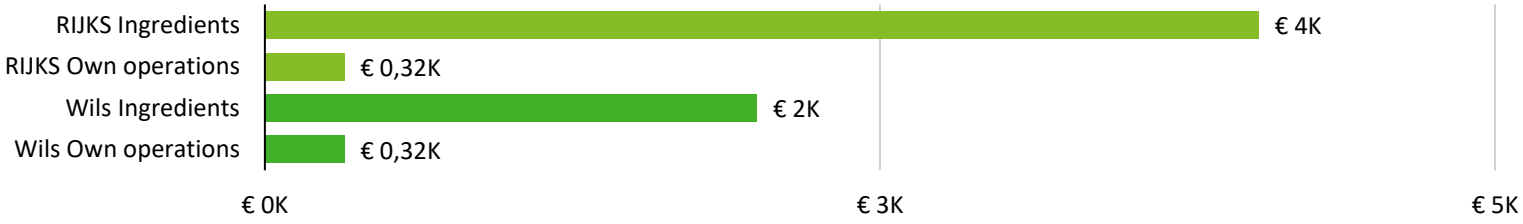
Results

Water consumption

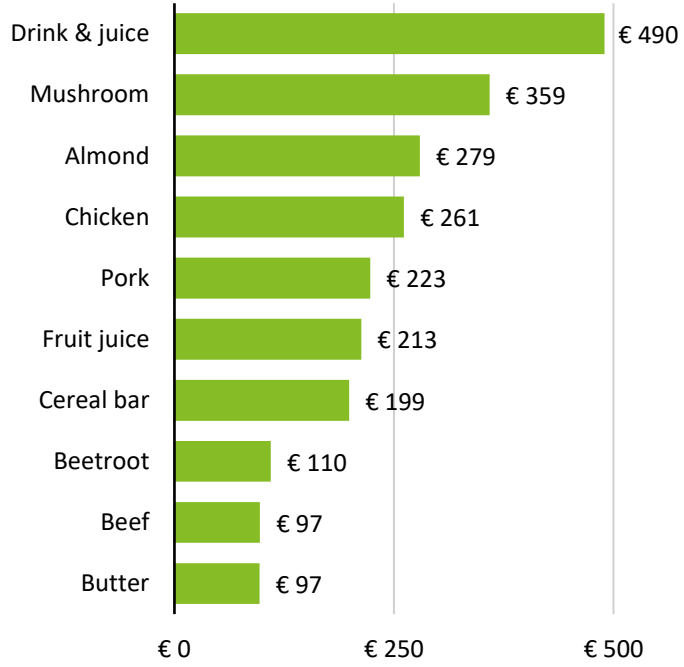
Key insights

In contrast with the other impacts, the ingredients that have the highest impact are not animal-based ingredients:

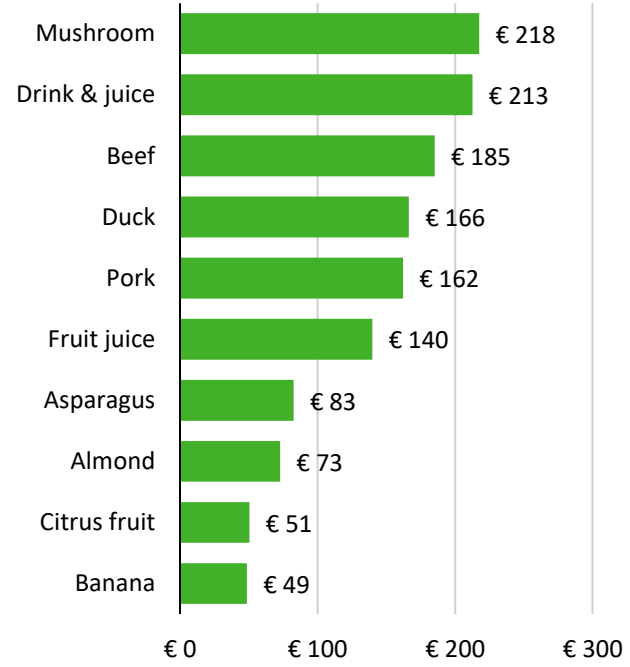
- Mushroom and drink & juice top the list at both restaurants, with almond coming in third for RIJKS.
- The water-intensive nature of certain ingredients can explain these findings. For instance, mushrooms use 0,85m^3 of water per kg, drink & juice use 0,50m^3 per kg, and almonds use 2,5 m^3 of water per kg.
- Animal-based ingredients are still present in the top 10 for both restaurants, as they are resource-intensive ingredients. They account for 14% of the impact, due to water consumption.



Top 10 ingredients - RIJKS



Top 10 ingredients - Wils



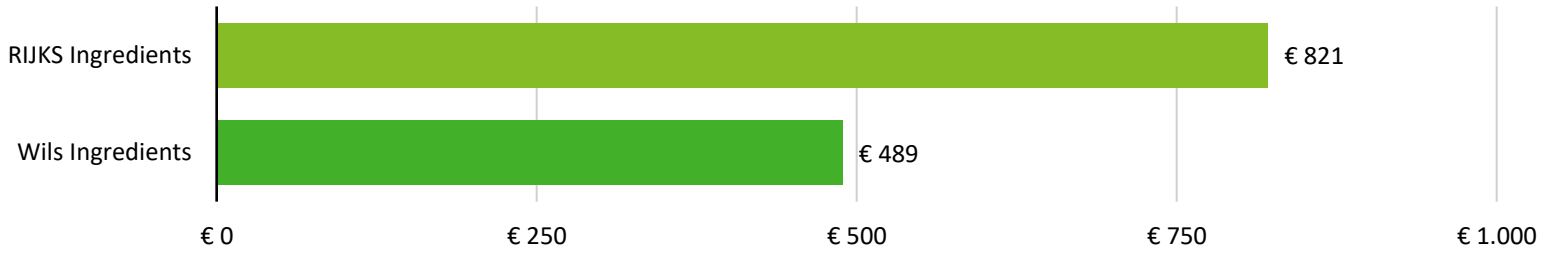
Results

Water pollution

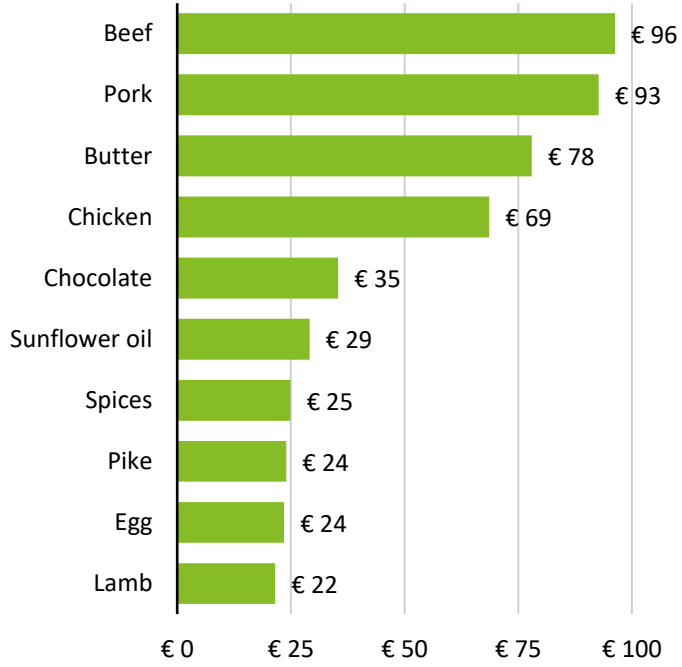
Key insights

The following ingredients contribute the most to water pollution:

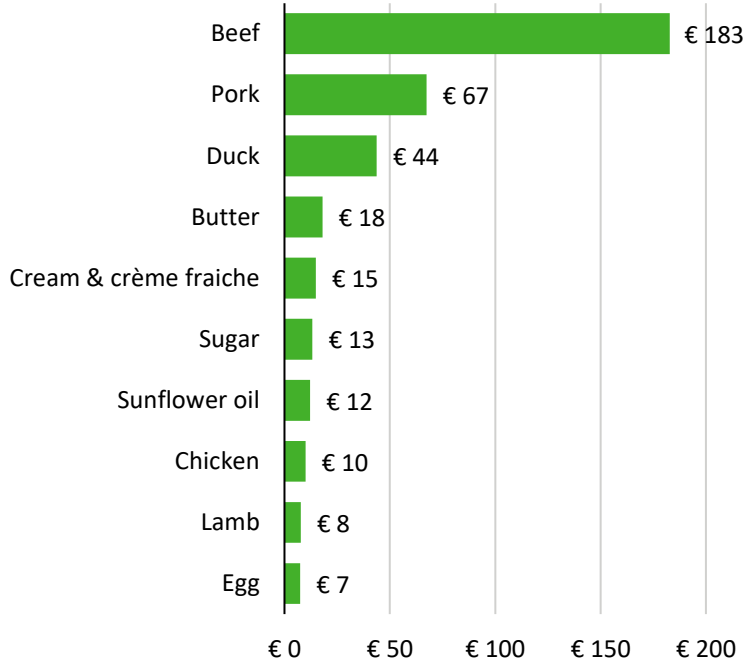
- Beef, pork and butter make up most of the impact for both restaurants.
- For RIJKS, these three ingredients represent 32% of the impacts, while for Wils, beef and pork represent 51% of the impacts.
- Animal-based ingredients account for 55% of water pollution impacts across both restaurants.



Top 10 ingredients - RIJKS



Top 10 ingredients - Wils



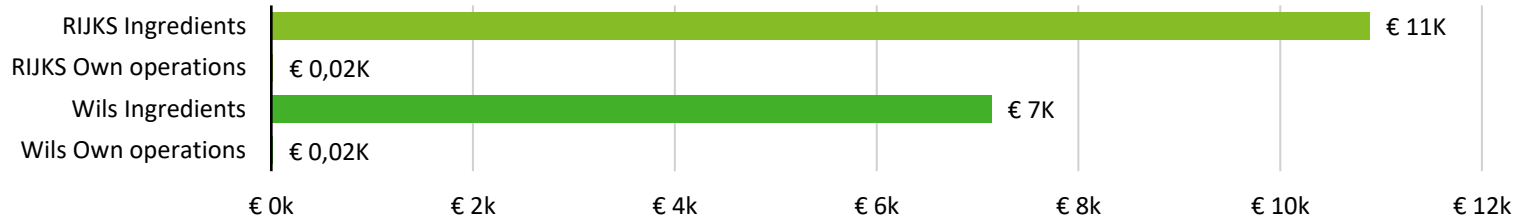
Results

Land use

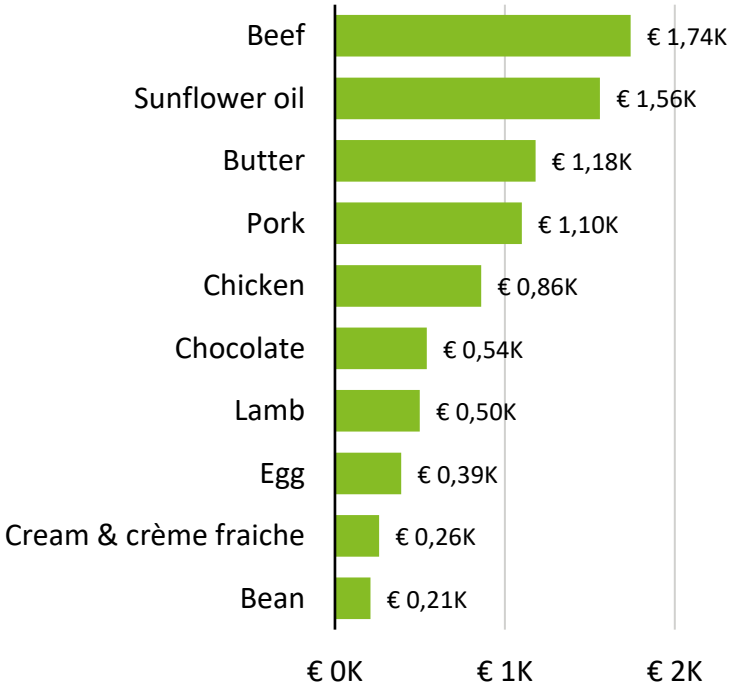
Key insights

With regards to land use, the following ingredients contribute the most:

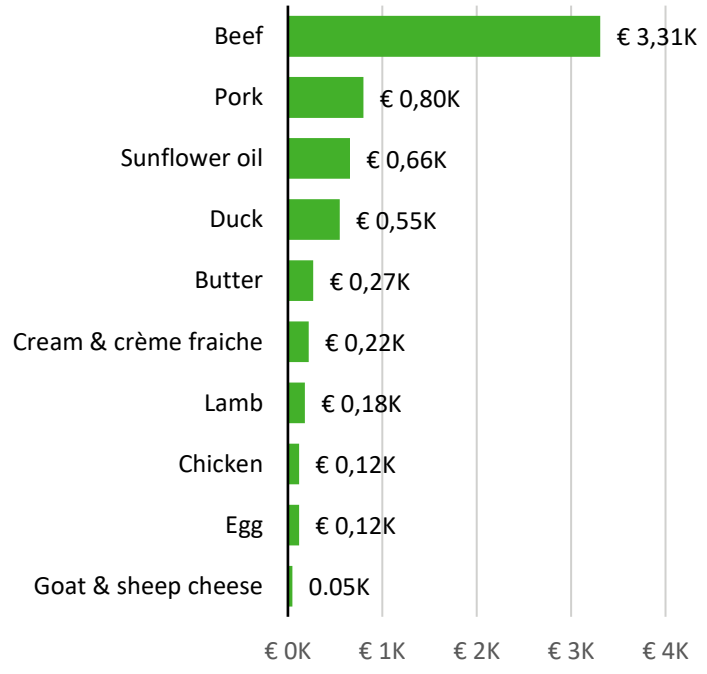
- Beef accounts for 43% of the impact on land use for Wils. At RIJKS, beef contributes to 16% of the land use impact, which is lower due to less consumption of beef at RIJKS.
- As with other impacts, animal-based ingredients represent a large part of the impacts – specifically, 58% across both restaurants.



Top 10 ingredients - RIJKS



Top 10 ingredients - Wils



Case study

Comparing the carbon footprint of sustainable chicken to conventional chicken

Caste study

Collaboration fosters the reduction of negative environmental impacts

According to the World Economic Forum, there are five ways to transform the food system to benefit the people and the planet, and to reduce the overall environmental impact of food.

More than half of them are related to direct engagement with farmers, and engaging with those suppliers that incorporate sustainability and circularity practices in their operations.

To assess the above, we took a deep dive into a chicken farm in The Netherlands that has a focus on sustainability and circularity practices.

The case study presented on the following pages reflect the benefits of direct engagement with farmers

Five ways to positively transform the food system

- **Regenerative agriculture**: focus on land restoration, biodiversity protection and water cycle improvement.
- **Stronger local and circular food system:** avoid food waste, and use excess products as compost or nutrients; be mindful of waste consumption/ pollution.
- **Support of farmers:** empower farmers to drive solutions for sustainable and regenerative agriculture. Engage them directly within your supply chain.
- **True cost:** raise consumer awareness on the real cost of food.
- **Cross-sectoral collaboration:** foster and encourage dialogue between the food supply chain's various players.

Case study: Oranjehoen

Comparing the impact of Oranjehoen's chicken to an average Dutch chicken

In this case study, we conducted a deep dive into Oranjehoen – a farmer adopting innovate practices to reduce its environmental impact. Oranjehoen is a crop and chicken farm that applies circular principles. Vegetables and wheat are used to enrich chicken feed, while chicken manure is used as fertilizer for the crops.

Oranjehoen focus areas

- Climate: energy-neutrality of the farm, by using solar panels.
- Circular agriculture: using excess and 'ugly' vegetables/wheat for chicken feed, and for soil nutrition.
- Quality meat: only organic and nutritional feed is used for the chicken, which adds to consumer's daily nutrition.
- Animal friendly: providing animals with space, comfort, a better climate and heathy feed.
- Super healthy: no antibiotics used to produce the meat, and the chicken get the time and space to grow.

We compared the carbon footprint of three types of chicken: a conventional chicken, a Beter-Leven Keurmerk* chicken and an Oranjehoen chicken.

The assessment showed that the Oranjehoen chicken has lower carbon footprint than an average broiler chicken with both types of feed (please refer to the next page to observe the results). The focus areas of the Oranjehoen farm presented above contribute to this overall reduction of CO_2e.

* Beter Leven Keurmerk (BLK) is a label for chickens that have more space, distraction material and opportunities to exercise their natural behaviour compared to chickens from conventional livestock farming.

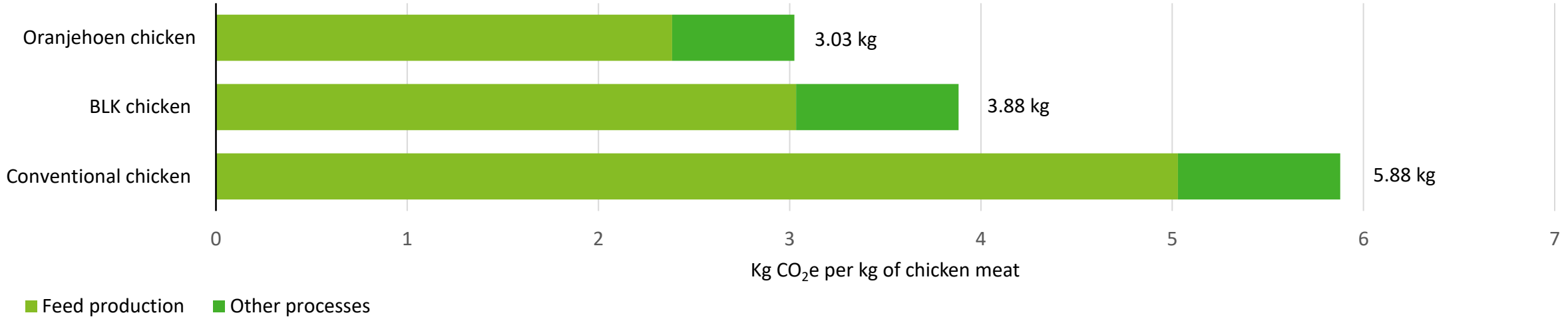
Case Study: Oranjehoen

How we measured the environmental impact of Oranjehoen

We conducted an LCA, as described in the Methodology section, to compare the carbon footprint of the three types of chicken. The impacts of the conventional chicken and BLK chicken were retrieved through LCA databases. To compare the figures with the Oranjehoen chicken, we used specific input from the Oranjehoen farm, such as its energy usage, production processes, resource consumption and waste production. We assessed its corresponding CO_2e footprint, and compared it to the conventional and BLK chickens. The results show that for all types of chicken meat, the footprint of the feed is the most material. With its custom-made feed, Oranjehoen significantly decreases its total CO_2e emissions compared to the other chicken meats.

The graph below shows the differences in impacts between three types of chicken and the processes from cradle-to-slaughterhouse. To showcase the impact of chicken feed production, we divided the processes into feed production and 'other processes'. Other processes contain processes such as broiler fattening and slaughtering.

Case study results: The comparison of CO_2e emissions per kilogram chicken



Conclusion and next steps

Key insights and how restaurants can improve their impact

Conclusion

The analysis highlighted the need to move beyond CO_2e 'tunnel-vision', to focus on ingredients, and be particularly aware of the impact of beef

Avoid CO_2e tunnel-vision

Avoid CO_2e tunnel-vision: The **holistic assessment** method used highlighted that **CO_2e** is **not** the **only environmental impact relevant** to restaurants. In fact, although CO_2e did have a material impact, **other air emissions**, which are associated with negative health outcomes for humans, were **more impactful**.

This demonstrates the **need to stop focusing too much on CO_2e**, and consider a wider range of impacts when assessing impacts in the restaurant and catering sector.

Ingredients are key

The assessment incorporated impacts associated with ingredients and the restaurants' own operations**. Ingredients consistently showed a substantially more material impact** across impacts.

Furthermore, the **choice of ingredients** is **highly relevant** to the overall impact. Different **ingredients** have **varying** levels of environmental **impact**, and even for the same ingredient, the impact can vary considerably. Engaging with **sustainable suppliers** has proven to be **beneficial**, as demonstrated by the case study.

Beef highly material

Beef is highly material: **Beef** consistently showed a highly material **impact** across multiple environmental impacts in both RIJKS and Wils. This is true for the highest-impact impacts, including **other air emissions** and **CO_2e**.

In terms of **'low-hanging-fruit'** to improve the environmental performance of both restaurants, beef is the **obvious ingredient category to focus on for impact reduction.**

Next steps

How restaurants can build upon this framework and seek to improve over the short, medium and long-term

	Short Term (6 months)	**Medium Term** (1 – 2 years)	**Long-Term** (3+ years)	**Key stakeholders**
Data	**Improve** • Request supplier-specific data on the ingredients, focusing first on those which appear to be most material	**Follow up** • Conduct a follow-up assessment with more representative/ supplier-specific data • Incorporate social impacts	**Embed** • Annual benchmark based on the environmental performance of peers	• Restaurant staff • Suppliers • External Analysts
Ingredients	**Decide** • Make ingredient choices based on their environmental performance, without impacting the quality of food	**Adapt** • Include environmental performance in procurement criteria • Experiment with different menu options based on ingredient performance • Establish long-term contracts with sustainable farmers	**Review** • Continuous monitoring of how to improve	• Restaurant staff • Suppliers • Farmers
Communication	**Tell** • Engage with peers and key suppliers, and further (through social media) disseminate key insights	**Inspire** • Display insights to all customers • Call to action to other restaurants	**Maintain** • Maintain a consistent (social) media presence • Jointly display success stories with other restaurants working competitively	• Customers • Other restaurants • Media

Appendix

Granular list of ingredients & assumptions

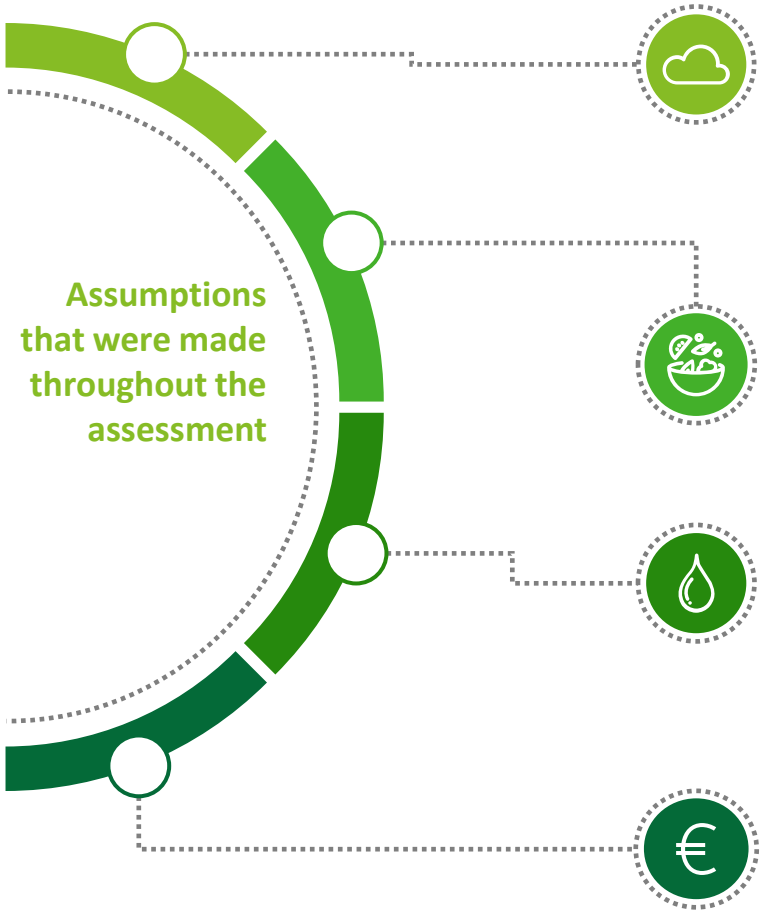
Appendix

List of ingredients evaluated for the impact assessment

Meat	Seafood	Fruit	Vegetable	Dairy	Carbohydrates	Other proteins	Oil & misc.
Beef	Caviar & Fish Eggs	Apple	Artichoke	Bloomy-Rind Cheese	Bread	Almond	Beer
Beef Bones	Cod	Avocado	Asparagus	Blue-Veined Cheese	Cake & Muffin	Almond Milk	Bottled Water
Chicken	Crab	Banana	Aubergine	Butter	Cereal Bar	Bean	Candy
Duck	Halibut	Citrus Fruit	Beetroot	Butter Milk	Corn	Cashew	Drink & Juice
Goose	Herring	Coconut	Bell Pepper	Chocolate	Crackers & Pretzels	Chestnut	Fried Snack
Lamb	Lobster	Fig	Broccoli	Condensed Milk	Crisps	Chickpea	Herbs
Lamb Bones	Mackerel	Fruit Juice	Brussel Sprout	Cream & Crème Fraîche	Dried Pasta	Egg	Nut-Based Oil
Pork	Octopus & Squid	Fruit Puree & Jam	Cabbage & Silverbeat	Fermented Milk Products	Fresh Pasta	Hazelnut	Olive Oil
Pork Bones	Oyster, Clam & Mussel	Grape	Carrot	Fresh Cheese	Grains	Lentil & Pulse	Salt
Rabbit & Hare	Pike	Kiwi	Cauliflower	Goat & Sheeps Cheese	Pancake & Waffle	Macadamia Nut	Spices
Venison	Salmon	Mango	Celery & Leek	Hard Cheese	Pita & Flatbread	Mushroom	Spread & Other Sauce
	Sea Bass	Melon	Cucumber	Ice-Cream & Gelato	Potato, Sweet Potato & Yam	Oat Milk	Sugar
	Shrimp & Crayfish	Olive	Garlic & Ginger	Milk	Rice	Peanut	Sunflower Oil
	Trout	Other Berry	Lettuce	Natural-Rind Cheese		Pecan	Syrup & Honey
		Passionfruit	Onion & Shallot	Semi-Hard Cheese		Pine Nut	Vegetable Oil
		Peach Nectarine & Apricot	Peas	Soft Cheese		Pistachio	Vinegar & Soy Sauce
		Pear	Pumpkin	Washed-Rind Cheese		Seaweed & Seaweed Products	Wine & Other Alcohol
		Pineapple	Spinach	Yoghurt & Frozen Yoghurt		Seed	
		Plum	Tomato			Soy Milk	
		Strawberry	Turnip, Radish & Parsnip			Tofu, Tempeh & Tofu Products	
			Zucchini			Walnut	

Appendix

Assumptions



CO_2e:

- With only limited energy consumption data available for RIJKS and Wils, it was assumed that these restaurants consumed the average amount of electricity that restaurants of roughly the same size in the United Kingdom use, which is 55.000 kWh. The United Kingdom was used as a reference point due to data availability and the economic and industry similarities between the UK and the Netherlands. To assess the corresponding amount of CO_2e, an emission factor of 0,46 kg CO_2e/kWh was used, based on the Dutch electricity grid.
- For Wils's Scope 1 footprint, the amount of wood and charcoal used by the restaurant was incorporated. The emission factor of charcoal was taken as 0,002 tons of CO_2 per kg of charcoal.

Ingredients

- For the life cycle assessment (LCA), it was assumed that all the ingredients were locally sourced.

Water consumption

- Due to limited visibility into the water consumption of both restaurants, the US average water consumption for restaurants of equivalent size to RIJKS and Wils was taken, which is 2.440 m^3 per year. The US was taken as a reference point due to data availability.

Impact prices

- The prices of the different impacts were selected to reflect the Dutch context, as it is assumed that the ingredients are sourced locally. As such, prices determined by CE Delft and EPA (for CO_2e) were factored into this assessment.

Contact

In case of suggestions or questions, feel free to contact one of the persons of the contact list

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