

# PETFOOD FORUM EUROPE

*Strategies to Improve European Pet Food Production*



#petfoodforum

How do rendered ingredients compare to novel ingredients in pet food from an environmental perspective?

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Co-located with  **Interzoo 2026**

# Our Purpose

## Better Food. Better Health. Better World.

- Part of Institut Mérieux and driven by **Mérieux** family **public health vision**
- Leveraging 50+ years of expertise in Food Safety, Quality & Sustainability.
- A 360° approach to providing high-value, **science-based solutions** at every stage of the **agri-food value chain**.



# About Mérieux NutriSciences | Blonk

- International leader in food system sustainability
- Pioneers in **Environmental Footprint Management** in the agri-food sector
- Comprehensive solutions: **consultancy, software** and **data**



## Research & Methodology

- Scenario studies
- Standards development



## Equip the market

- **Product Footprinting (LCA) and related claims & labels**  
*Life Cycle Assessments and claims/labels substantiation or verif.*
- **Corporate Carbon footprinting**  
*Scope 1+2+3 emissions calculation, especially when agri hotspots*
- **Environmental Footprinting strategies & training**  
*Target setting, Mitigation strategies, Frameworks & reporting, Training, Secondment (eg. data collection/maintenance)*



## Digital Solutions

- Data solutions
- Softwares and farm modelling platforms

# About us

- **Anne Gaasbeek**
  - Senior consultant and team lead at Blonk.
  - Owner of two extremely lazy sweet cats,
  - who have convinced us that organic, Italian petfood is the only way to go.
- **Gregorio Brussino**



# Increased adoption of novel foods in pet foods

- The increasing population of humans and animals is pushing the **boundaries of our planet**
- Increased interest and awareness of pet owners in **sustainability**
- At the same time the industry is facing
  - **Rising protein costs**
  - Growing demand for **transparency**
- **Novel ingredients** such as precision fermentation, cultured meat, insect meal are seen as potential contributors to



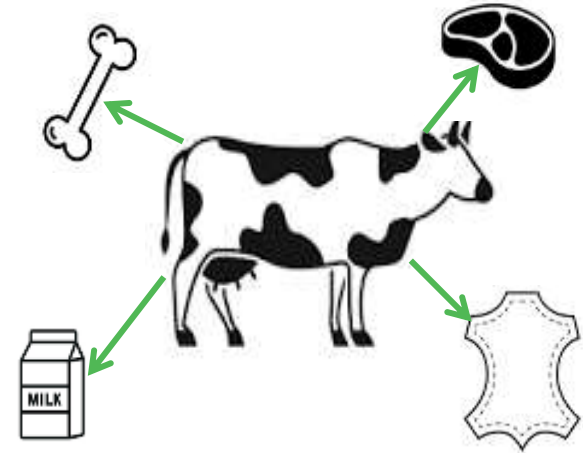
# Pet food market early adopter of novel foods

- Slow regulatory approval for novel foods for human consumption in Europe, pet food great starting point
- Novel foods large basket of ingredients
- Initiatives to speed up are emerging – but long journey ahead

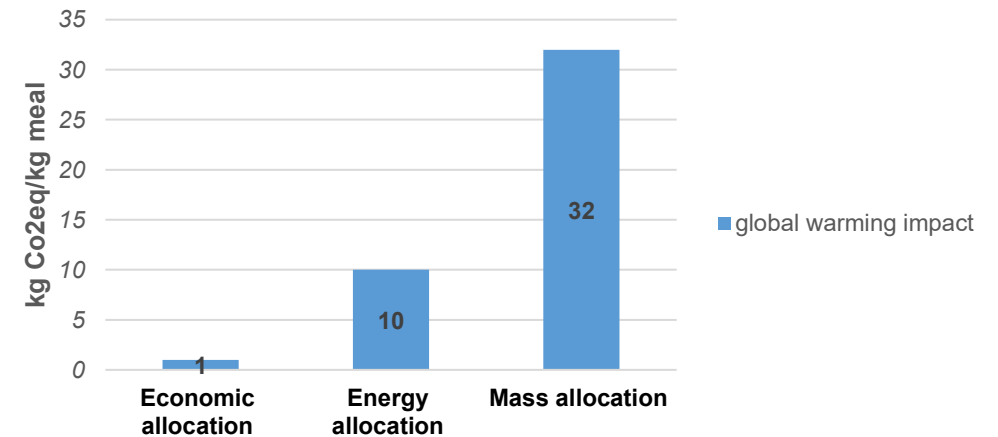
	Regulatory app human consumption	Consumer acceptance	Use in pet food	Main perceived limitations in pet food
<b>Insect meal</b>	√	X/=	√	Price, nutritional imbalance, palatability
<b>Cultured meat</b>	X	X/=	X	Scalability, high cost
<b>Precision fermentation</b>	X/√	=	=	Scalability
<b>Single cell proteins</b>	X/√	=	=	Palatability

# Rendered ingredients are very low impact ingredients

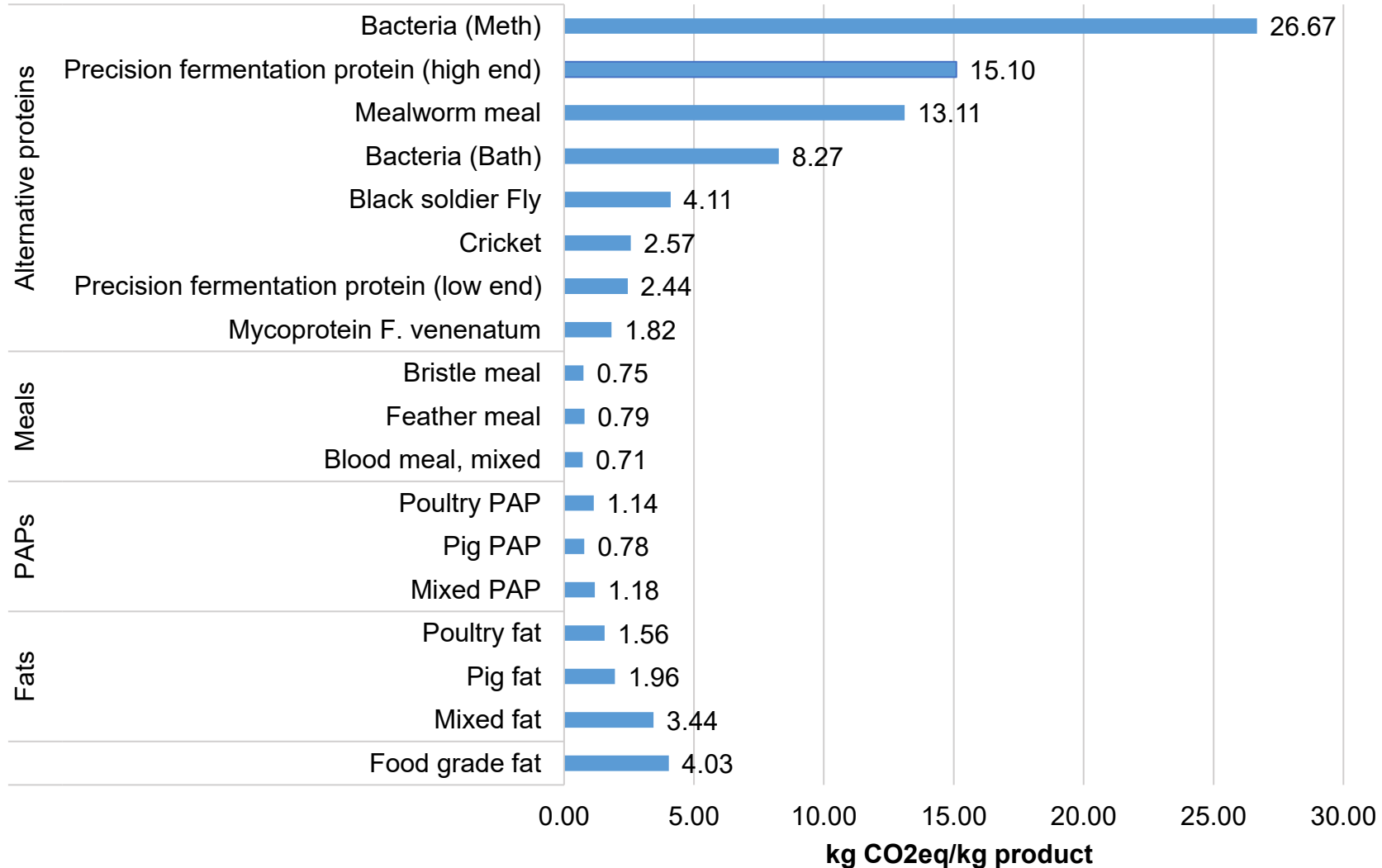
- The pet food industry has a long history of using rendered ingredients
- They are the byproducts from the human food chain.
- Most common allocation is to divide the environmental impact over the products on basis of the economic value
- Rendered ingredients have relatively low economic value and as such a relatively environmental impact



Carbon footprint of EU bloodmeal for mixed species



# Novel foods currently higher carbon footprint

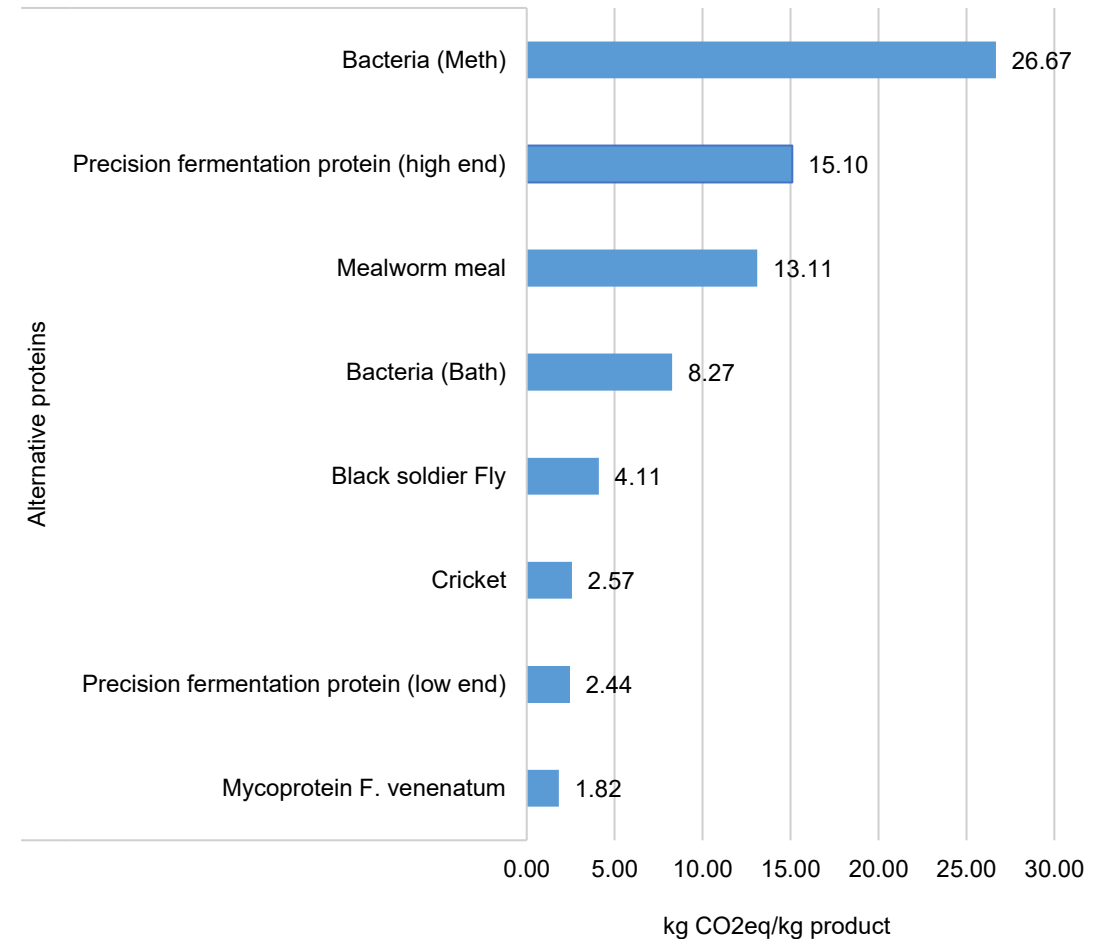


- **GHG emissions:** outcome of combined research<sup>1</sup> show higher emissions for the novel foods compared to rendered ingredients
- **Economic allocation** rendered by-products typically have a low economic value
- **Low Technology readiness level** and **production scale** negatively influences the environmental performance of many novel foods
- **Significant differences** exist both between and **within novel food categories**; environmental performance depends heavily on the specific food type and the production setup (e.g. feedstock and scale)

<sup>1</sup>The GHG emissions displayed in this graph were retrieved from multiple sources. GHG emissions for rendered ingredients were obtained from EFRA 2024 study conducted by Blonk Consultants. GHG emissions of novel foods were retrieved from: Pillarella et al. 2019, Behm et al. 2022, Thévenot et al., 2018, de Boer et al. 2014, Maiolo et al., 2020, Halloran et al., 2017, Smetana et al., 2017, L. Hamelin 2024 (Bon Vivant/Verley LCA), Perfect Day 2021.

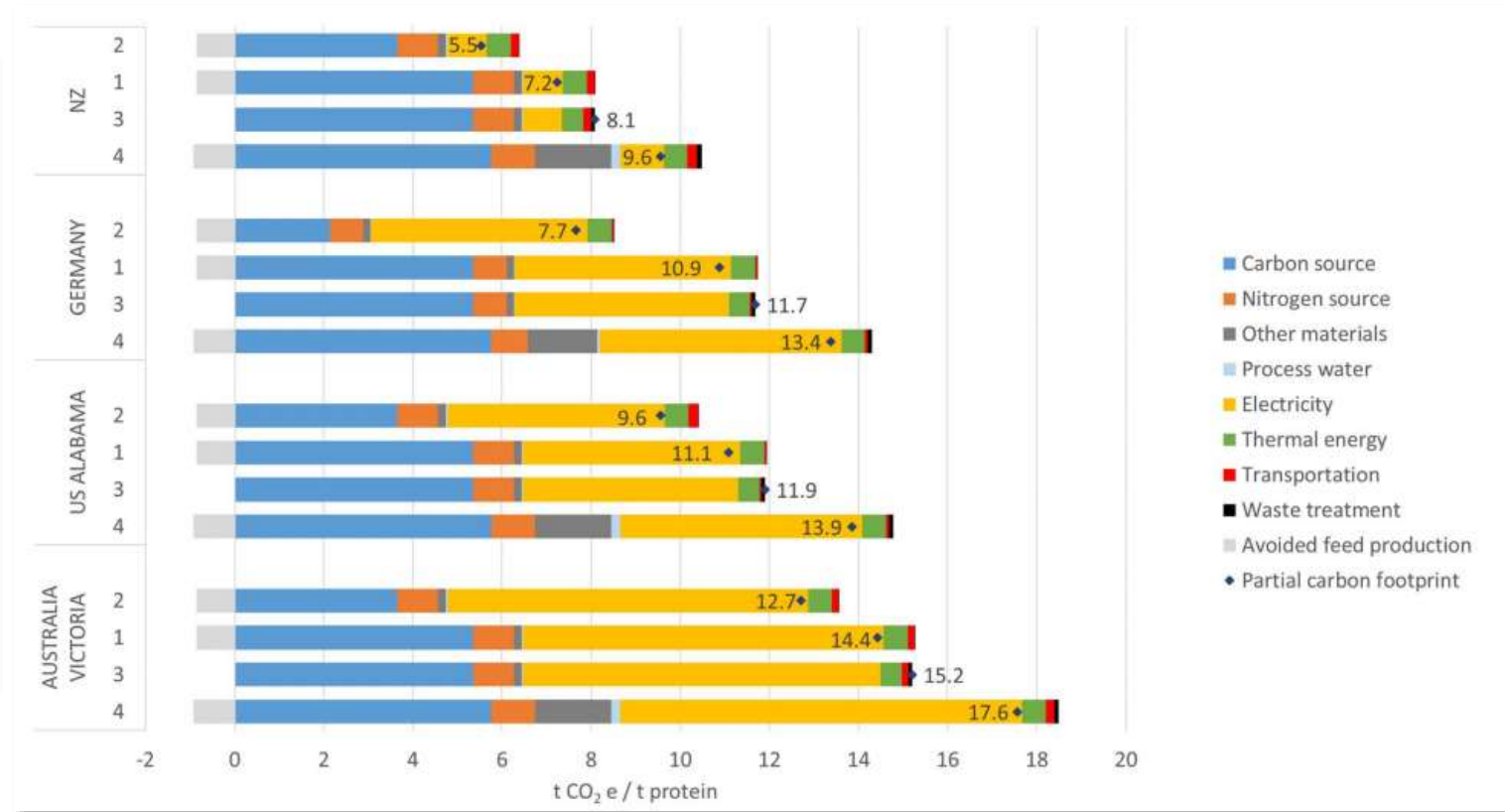
# Large variations within novel foods – why?

- Not all novel foods are the same – product nature is intrinsically different (bacteria vs cricket)
- Within the same category large variations occur due to variability in processing, scale...
- Different conclusions depending on the type of novel food



# Drivers carbon footprint novel ingredients

Focus on precision fermentation



<sup>1</sup>The GHG emissions displayed in these graphs were retrieved from Behm et al. 2022 and Perfect Day 2021.

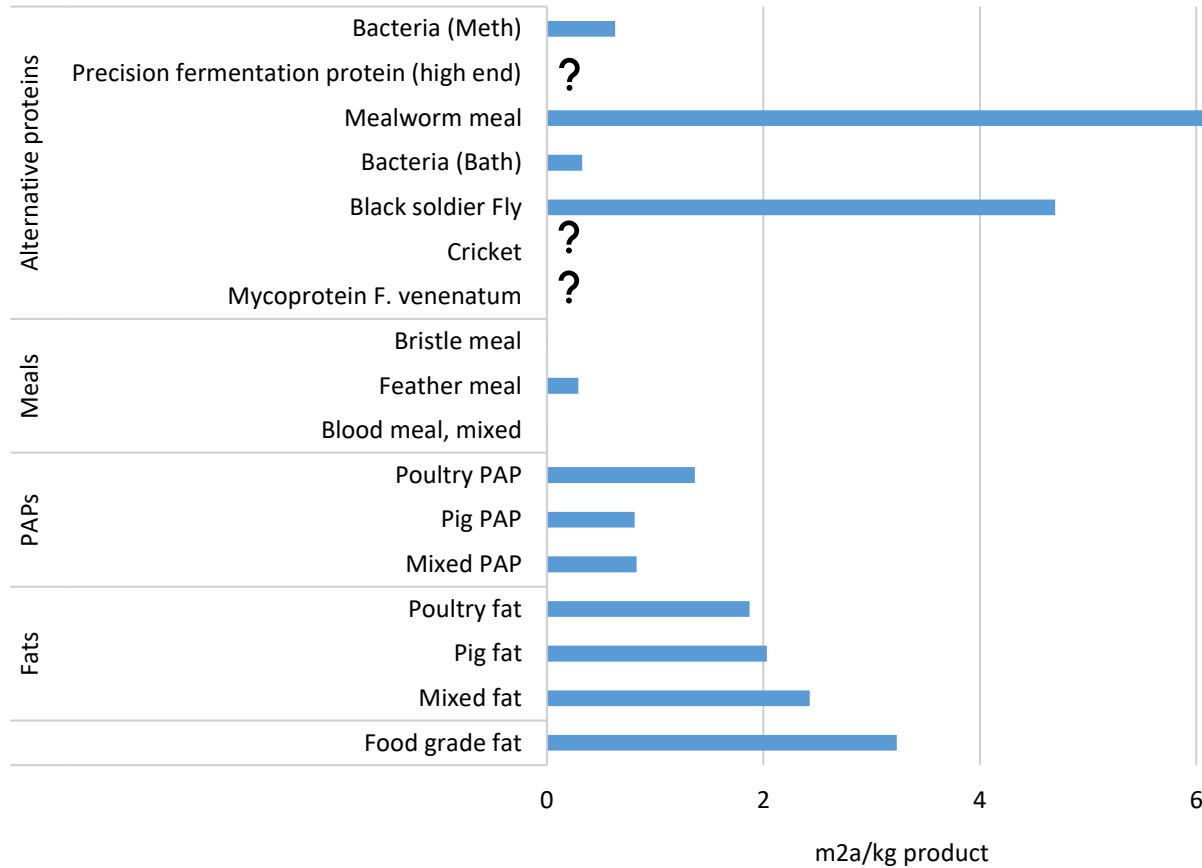
# The gap with rendered ingredients

- **Full environmental impact** ,With novel ingredients all impact of production go to the novel ingredients, due to no or limited by products
- **No large-scale production**, efficiency in production will lower the environmental impact.
- **Robustness of LCA** , Cultivated meat and precision fermentation are relatively new techniques for which there is still discussion on how to conduct the LCA

## Methodological discussions when comparing novel and rendered ingredients

- **Unit of comparison**: novel ingredients with meat for human consumption in petfood
- **Level of maturity**: comparing fully matured production (rendered) with start-up technologies
- **Type of allocation**: mass, economic, no allocation

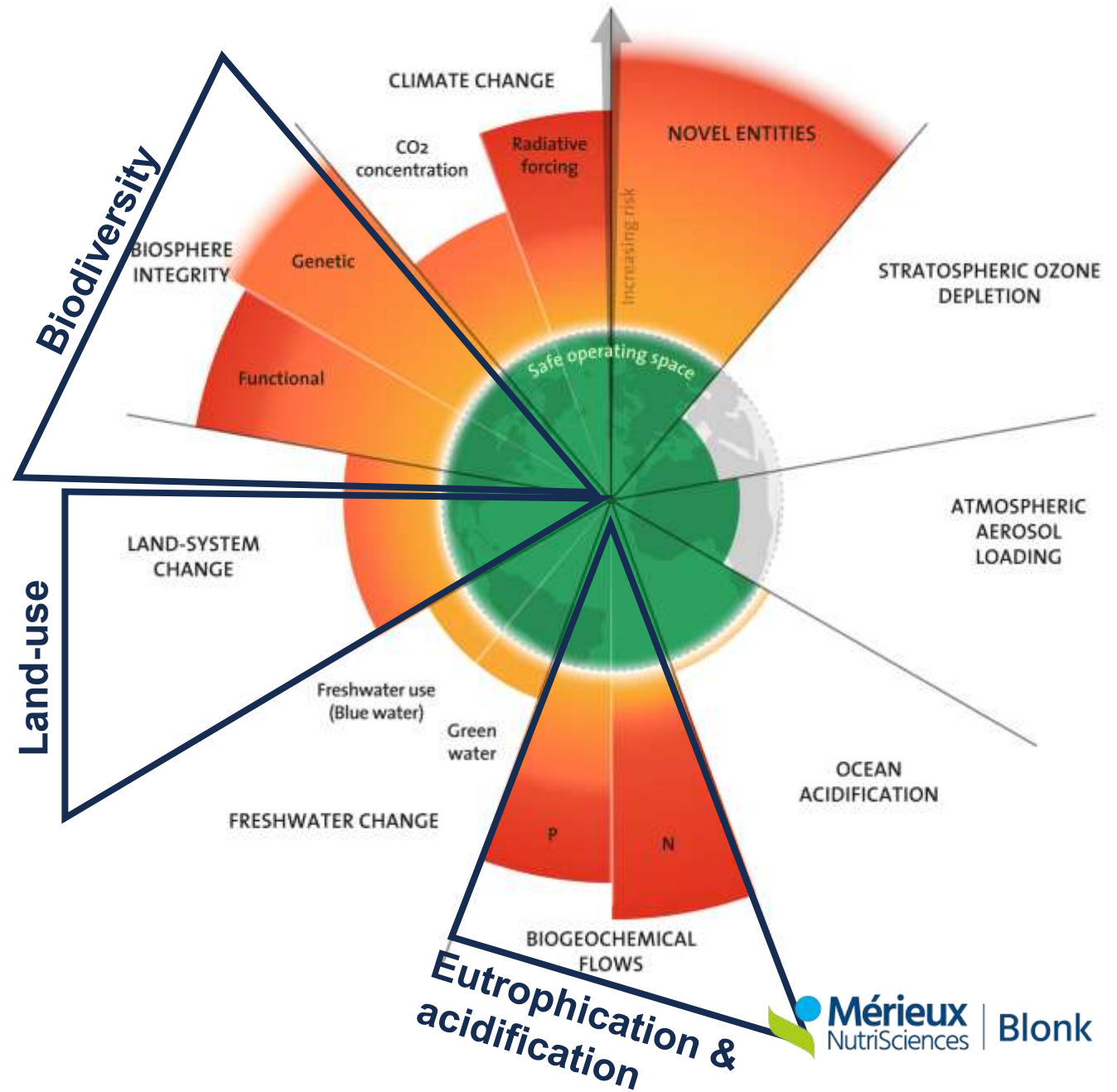
# Beyond Carbon Footprint



- **LCA is a multi-impact framework** - focusing solely on carbon provides a reductive view and fails to account for critical environmental trade-offs
- In studies of novel foods, **environmental impacts other than carbon** are frequently under-reported or treated as secondary considerations – are we neglecting relevant environmental aspects when assessing novel foods?
- To fully evaluate novel foods, it is essential to integrate **a broader range of indicators** rather than prioritizing a single metric.

# Beyond carbon

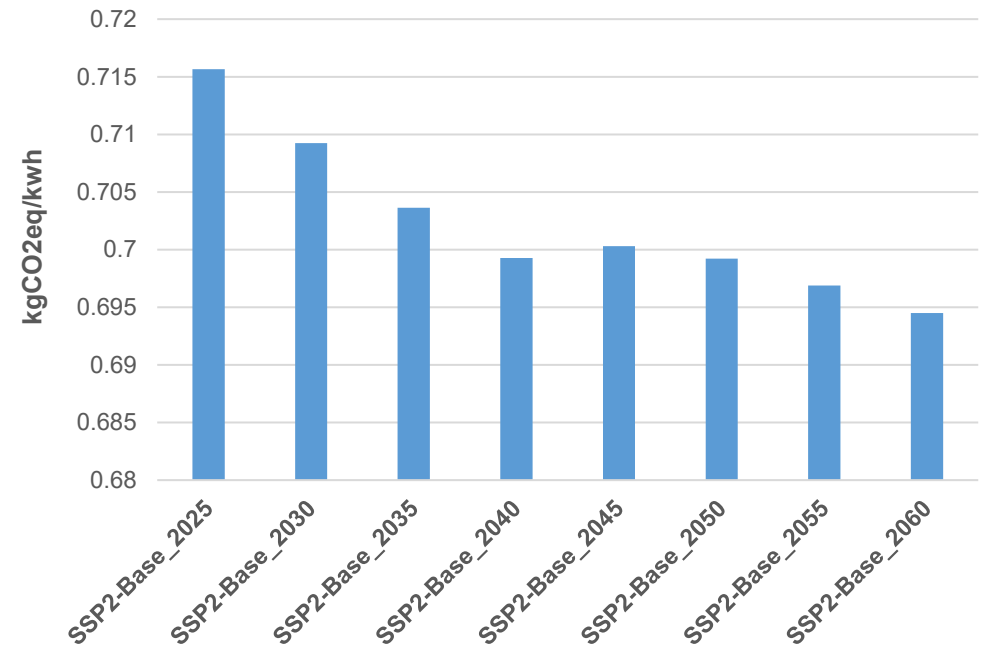
- Climate change is only one indicator; a more holistic view should be considered:
  - Biodiversity
  - Land-use
  - Eutrophication & acidification
- Environment but also:
  - Animal welfare
  - Human health- antibiotic resistance



# Beyond attributional LCA

- **Forward-Looking Analysis:** prospective LCA models emerging novel foods at a future, mature stage of development rather than at their current experimental or lab-scale state.
- Ensuring a **fair comparison** requires accounting for both direct technological advancements in novel foods and the indirect benefits provided by the **green transition** in linked sectors, such as the energy grid
- **Strategic decision support:** conducting prospective LCA at early stages helps identify environmental "hotspots" and design risks before large-scale production, guiding investment toward truly sustainable pathways.

EF v3.1 / climate change / global warming potential (GWP100) – NL residual energy mix



# Conclusions

- **Novel foods** are becoming relevant ingredients in the pet food market
- **Rendered ingredients** in general have a lower carbon footprint
- Sustainability decisions should be made on basis of a **holistic set of indicators**, not just carbon footprint
- Rendered and novel ingredients should be viewed as **complementary sustainable ingredients**



# The future

- The novel ingredient field to mature significantly and become an important strategy for frontrunner pet food companies.
- Advances in production efficiency, feedstock sourcing, and energy use will help lower the environmental footprint of novel ingredients.
- Customer adoption of novel ingredients is likely to increase
- Taken together, these developments will shape a more diversified and resilient pet food industry, one that balances rendered and novel ingredients to support sustainability goals
- Maybe our pets will beat us to a full sustainable diets