# Measuring and Communicating Environmental Impacts in Food Supply Chains

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BETTER POLICIES FOR BETTER LIVES

# OECD work on food – some examples…

# Food systems exert important pressures on the environment

### Land use

**50%**

of all ice- and desert-free land is used for agriculture

### Deforestation

**73%**

of tropical and sub-tropical deforestation (2000-10)

### Biodiversity loss

**80%**

of threatened land species are in danger due to habitat loss driven by agriculture

### Water use

**70%**

of global freshwater use

### Water pollution

**78%**

of global eutrophication

### Global warming

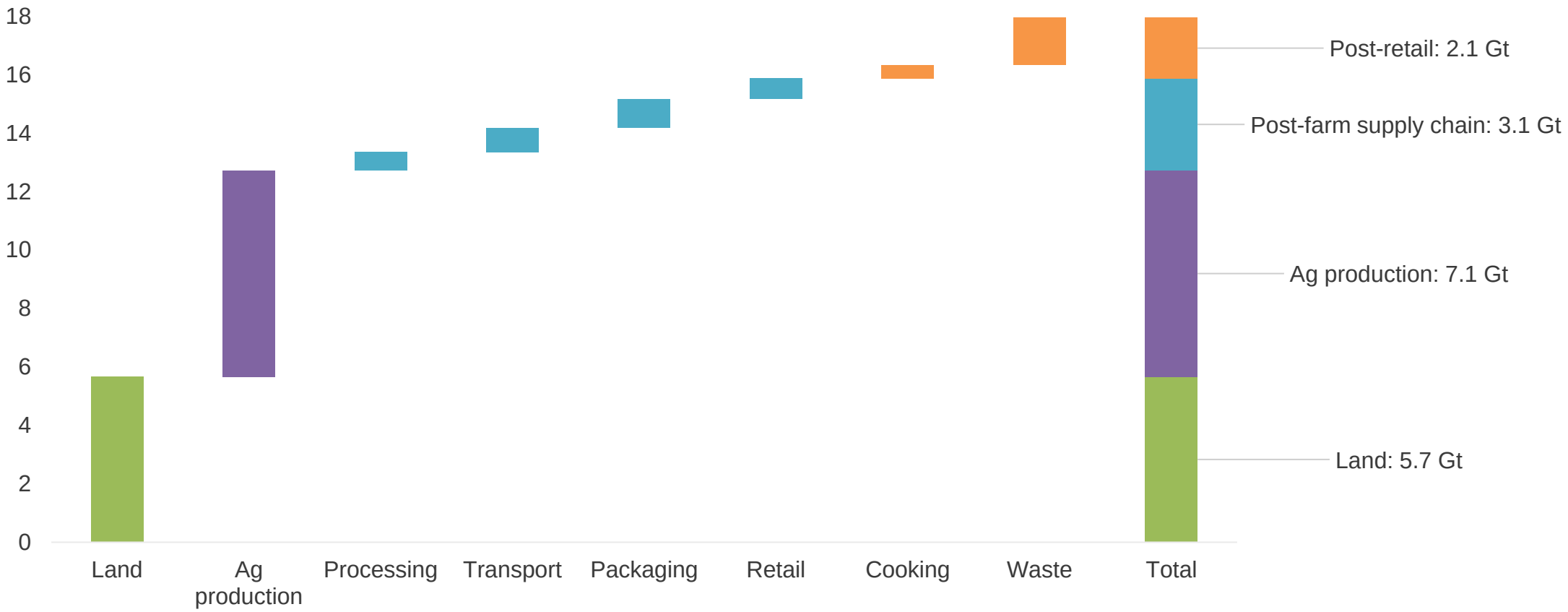
**21-37%**

of man-made GHG emissions

Source: OECD (2021), Making Better Policies for Food Systems; OurWorldInData

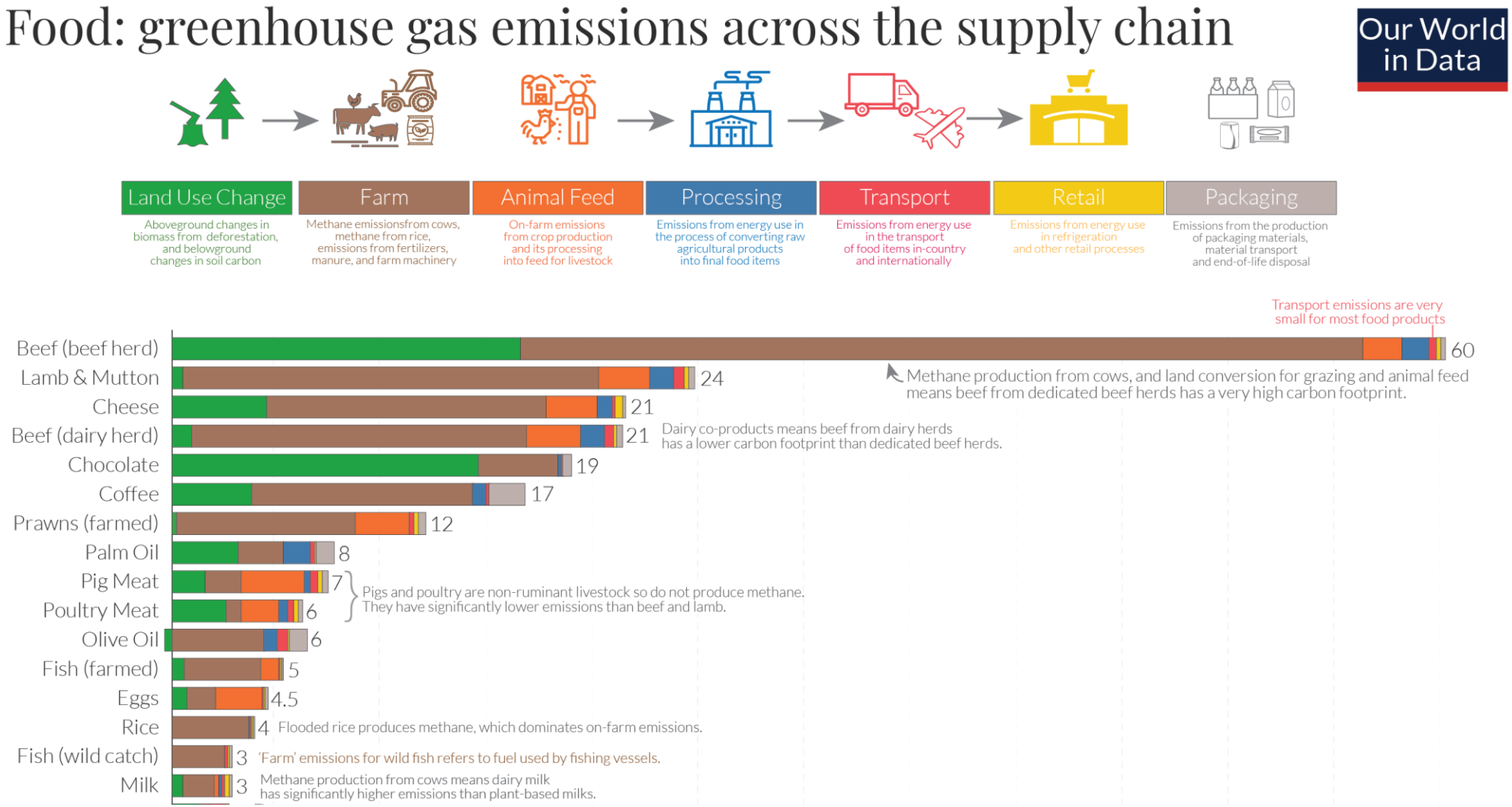
# Globally, most food emissions occur through land use change and agricultural production

**Food systems GHG emissions by supply chain stage, 2015**




Source: Crippa et al. (2021), *Nature Food*. Also see Tubiello et al. (2021) and IPCC (2019)

# Products differ strongly in terms of average impact



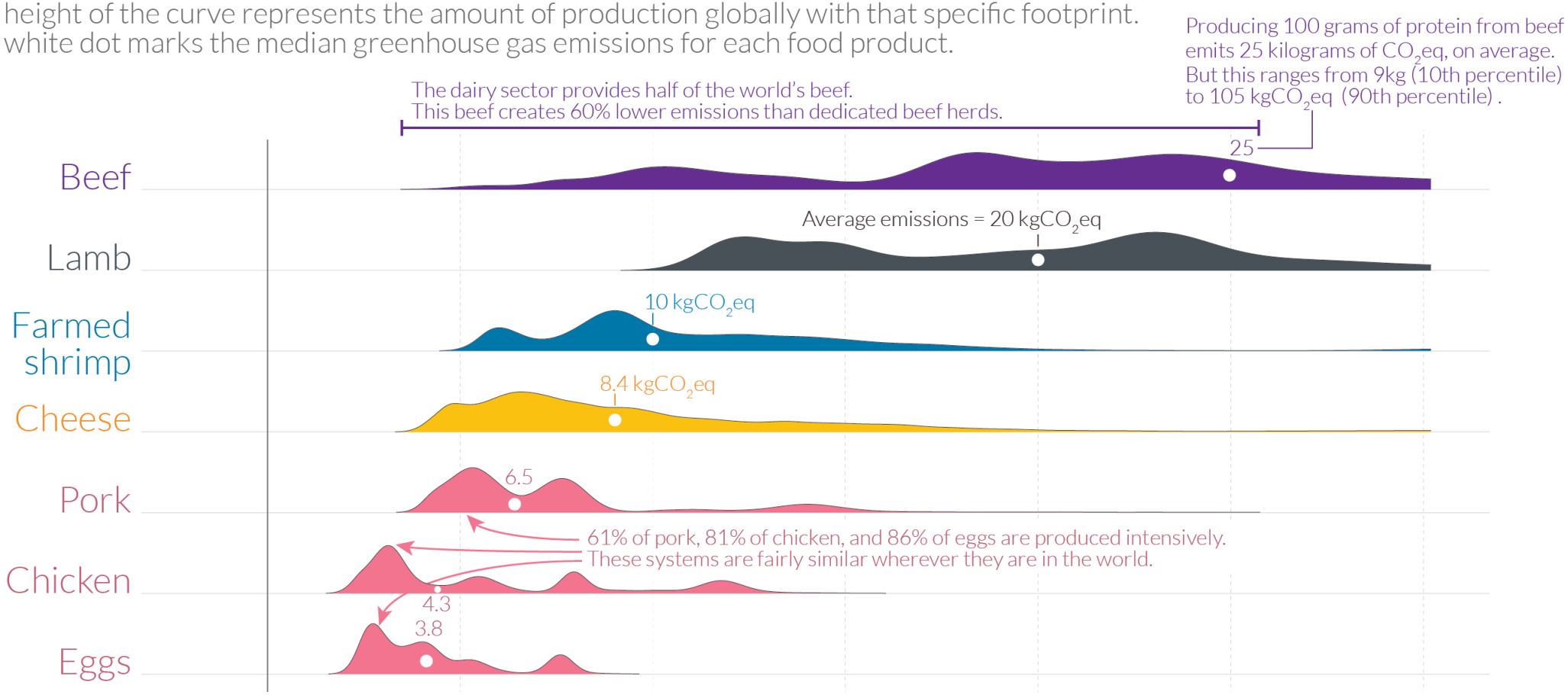

Source: Poore & Nemecek (2018) *Science*

# But there is also enormous variability across producers

## How does the carbon footprint of protein-rich foods compare?

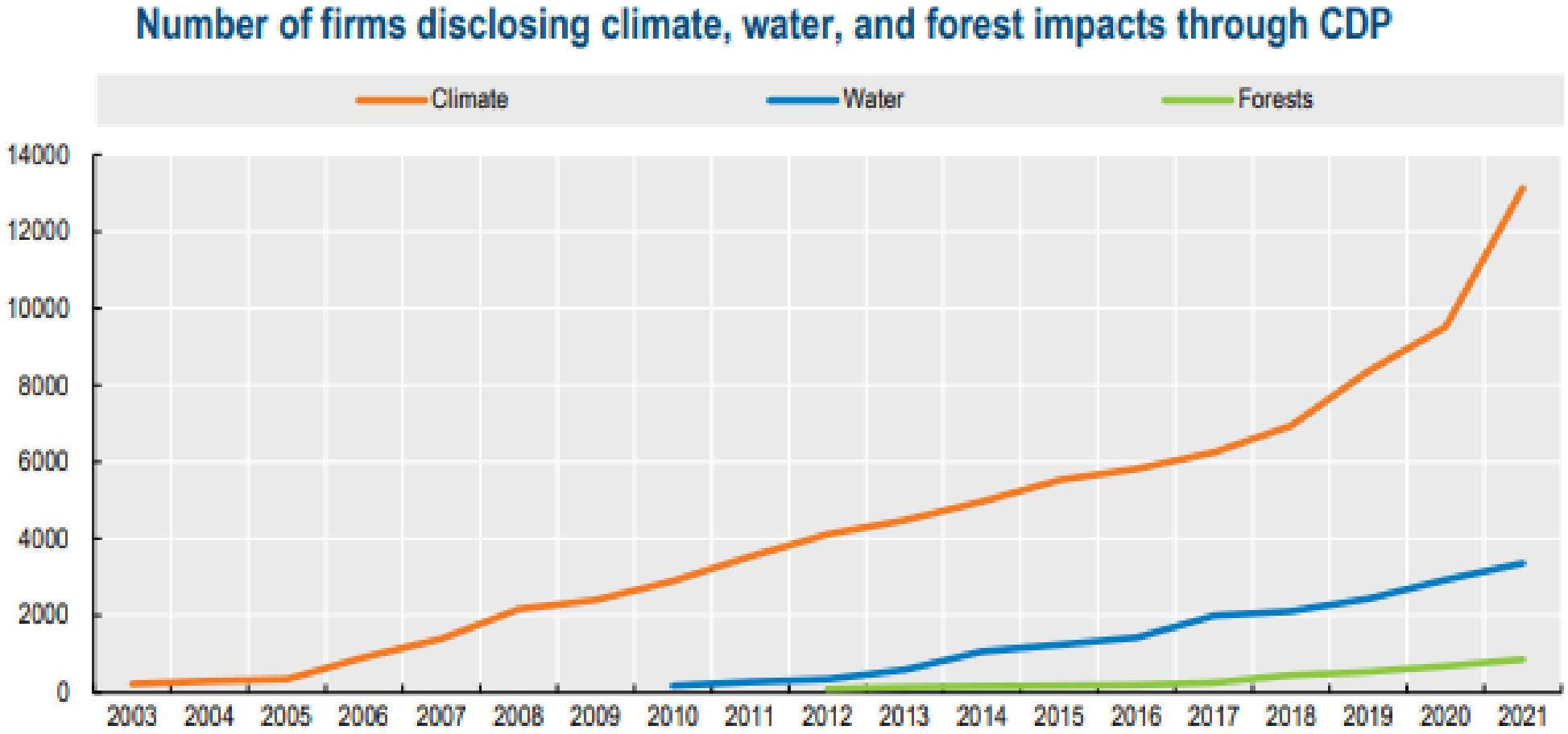
Our World in Data

Greenhouse gas emissions from protein-rich foods are shown per 100 grams of protein across a global sample of 38,700 commercially viable farms in 119 countries.
The height of the curve represents the amount of production globally with that specific footprint.
The white dot marks the median greenhouse gas emissions for each food product.




Source: Poore & Nemecek (2018) *Science*

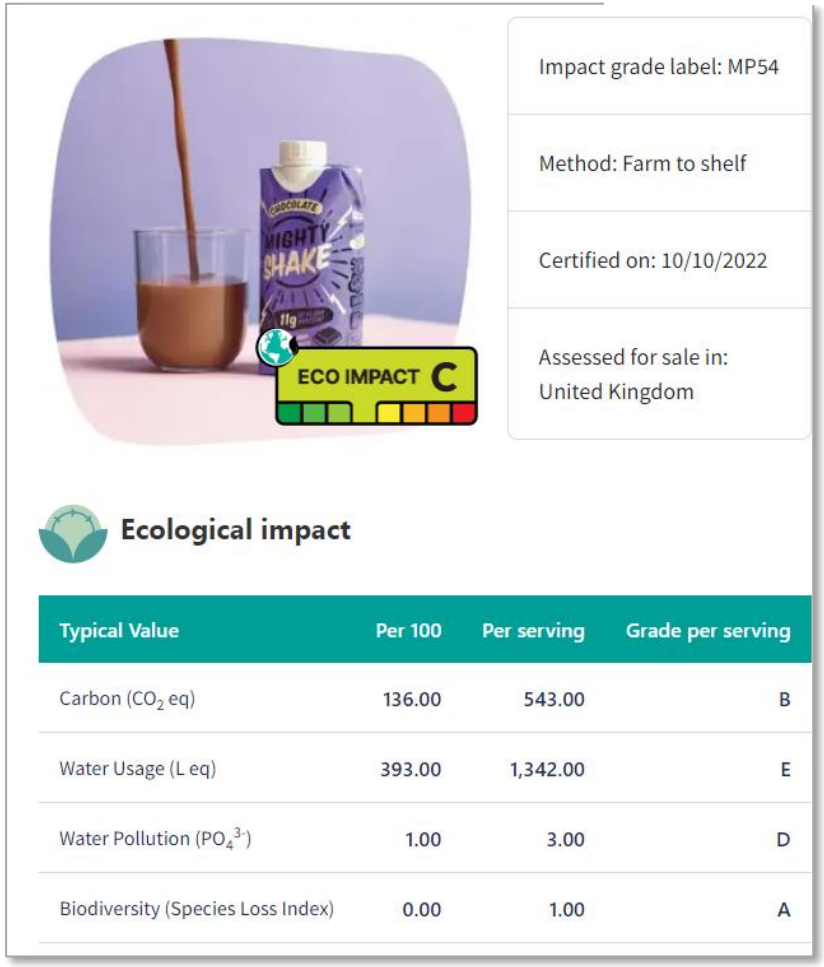
# Firms are increasingly disclosing their environmental impact information




**… and again +42% growth**
In 2022

Note: Number of firms (across all sectors) disclosing impacts through CDP.
Source: CDP, www.cdp.net (accessed 23 March 2022).

# There is also a growing emphasis on measuring and communicating carbon footprints in food systems


| Typical Value | Per 100 | Per serving | Grade per serving |
|---|---|---|---|
| Carbon ($CO_2$ eq) | 136.00 | 543.00 | B |
| Water Usage (L eq) | 393.00 | 1,342.00 | E |
| Water Pollution ($PO_4^{3-}$) | 1.00 | 3.00 | D |
| Biodiversity (Species Loss Index) | 0.00 | 1.00 | A |

# In short, we see strong growth of initiatives to measure and communicate environmental impacts…

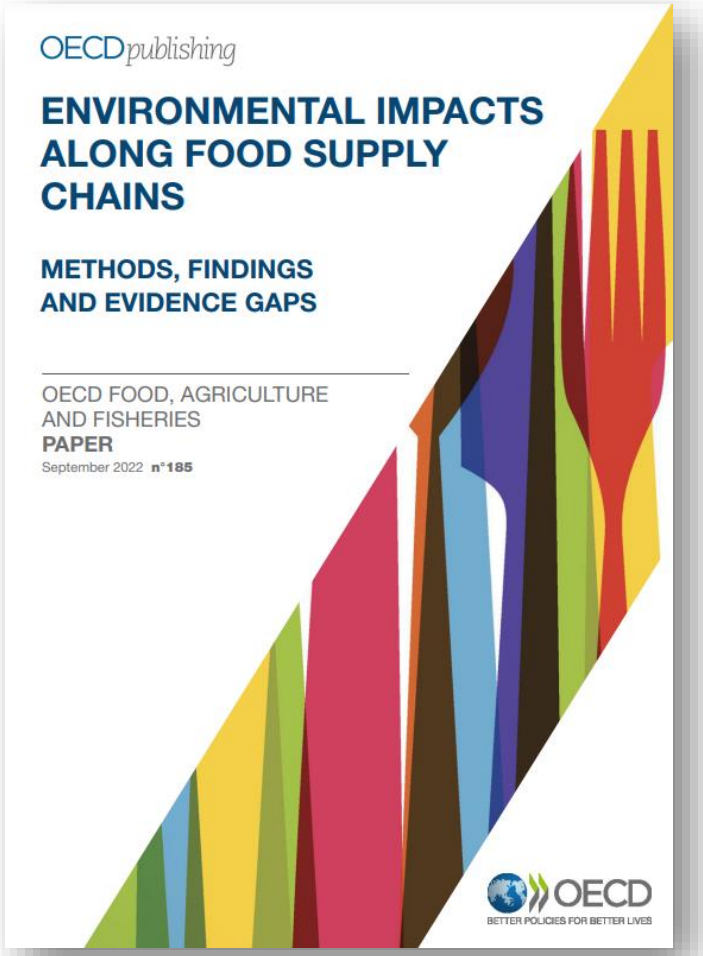
# Our work in 2023-24 focuses on the following questions

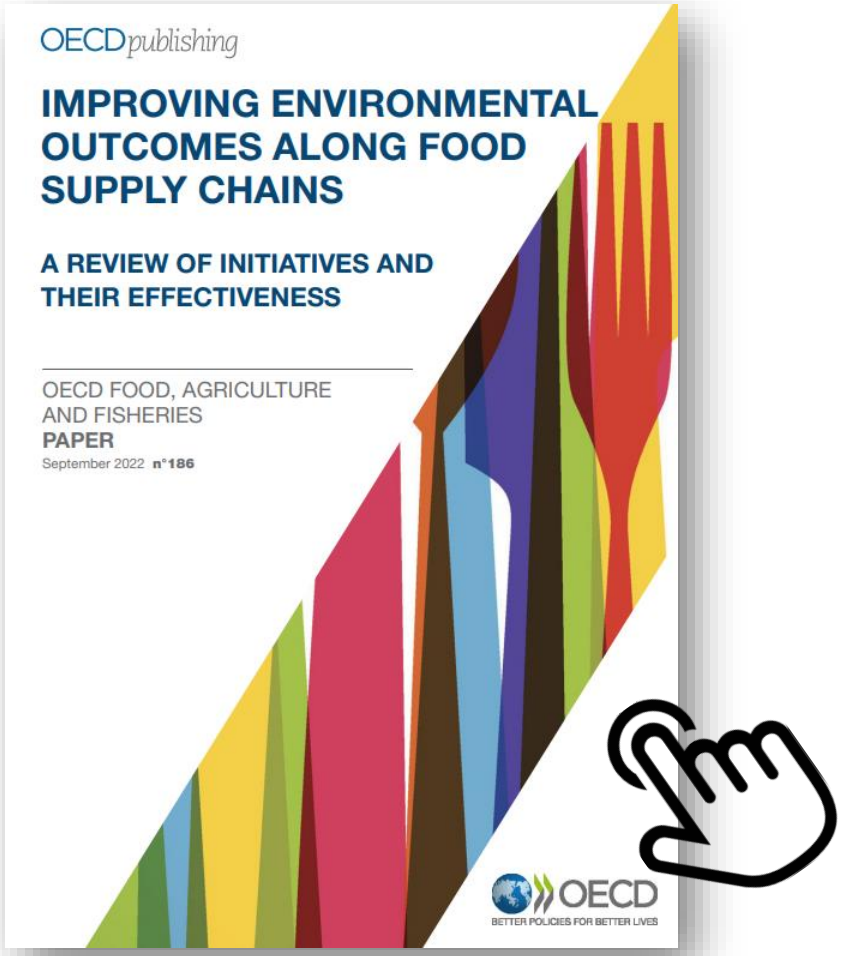
- **How can we measure carbon footprints in food systems?**
  - What are the different methodologies? Are these (in)consistent? Is there room for alignment?
  - How can carbon footprint information be shared easily and reliably along the supply chain?
  - How can we reduce transaction costs while maintaining precision?

- **How can we communicate environmental impacts to consumers?**
  - What are the different labels? Which types of environmental impacts do they cover?
  - Are labels effective in changing consumer behaviour?
  - Is there a risk of fragmentation and confusion?

- Forthcoming paper: ***"Fast and furious: the rise of environmental impact reporting in food systems"*** (Summer 2023)

# Further reading…

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