Food footprint

part III

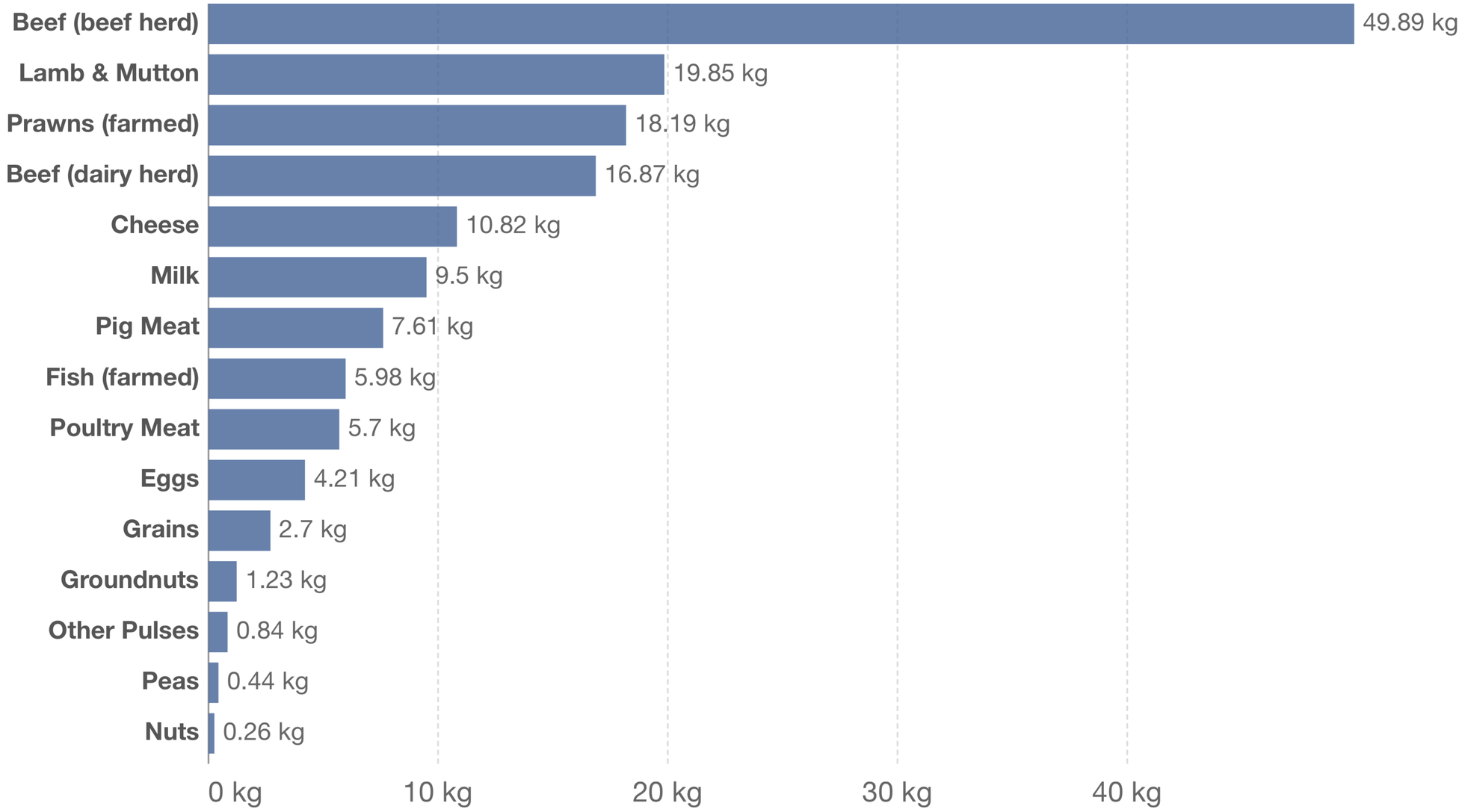
peas – unite 2022-2023

Carbon footprint of food products

- We have previously looked at the comparisons in carbon footprint of food products based on mass: GHG emissions from one kilogram of food product.
- It's also important to look at these comparisons in terms of nutritional units: this gives a measure of how low or high-impact different foods have in supplying protein or energy/calories.
- The following slides show the carbon footprint of foods as measured per 100 grams of protein, and per 1000 kilocalories.

Greenhouse gas emissions per 100 grams of protein

Emissions are measured in carbon dioxide-equivalents[1] .

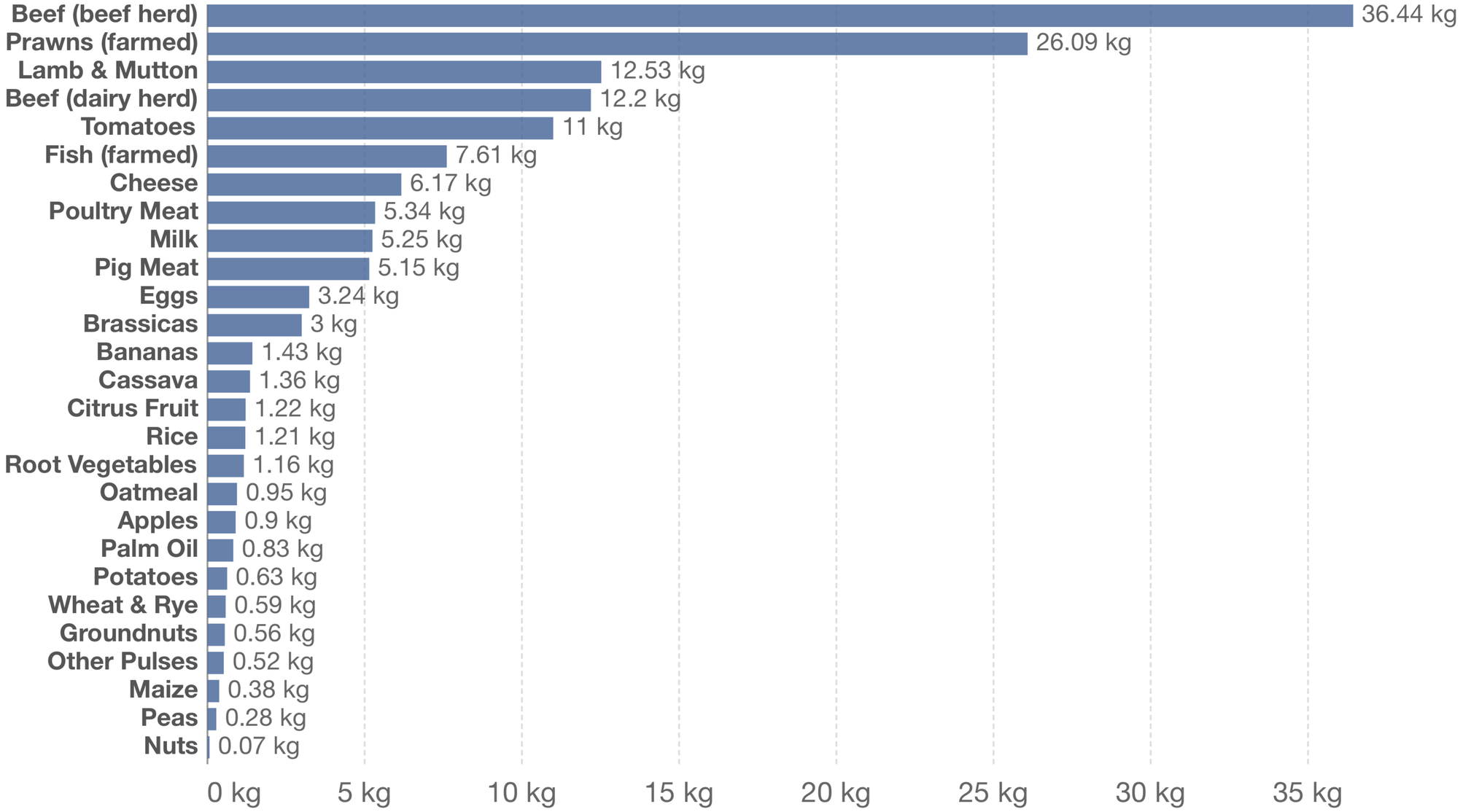


Source: Poore, J., & Nemecek, T. (2018). Additional calculations by Our World in Data.
OurWorldInData.org/environmental-impacts-of-food • CC BY

Greenhouse gas emissions per 1000 kilocalories

Greenhouse gas emissions[1] are measured in carbon dioxide-equivalents (CO_2eq)[2] .

Our World in Data



Source: Poore, J., & Nemecek, T. (2018). Additional calculations by Our World in Data.

Where do emissions come from?

Sources of GHG emissions by stage

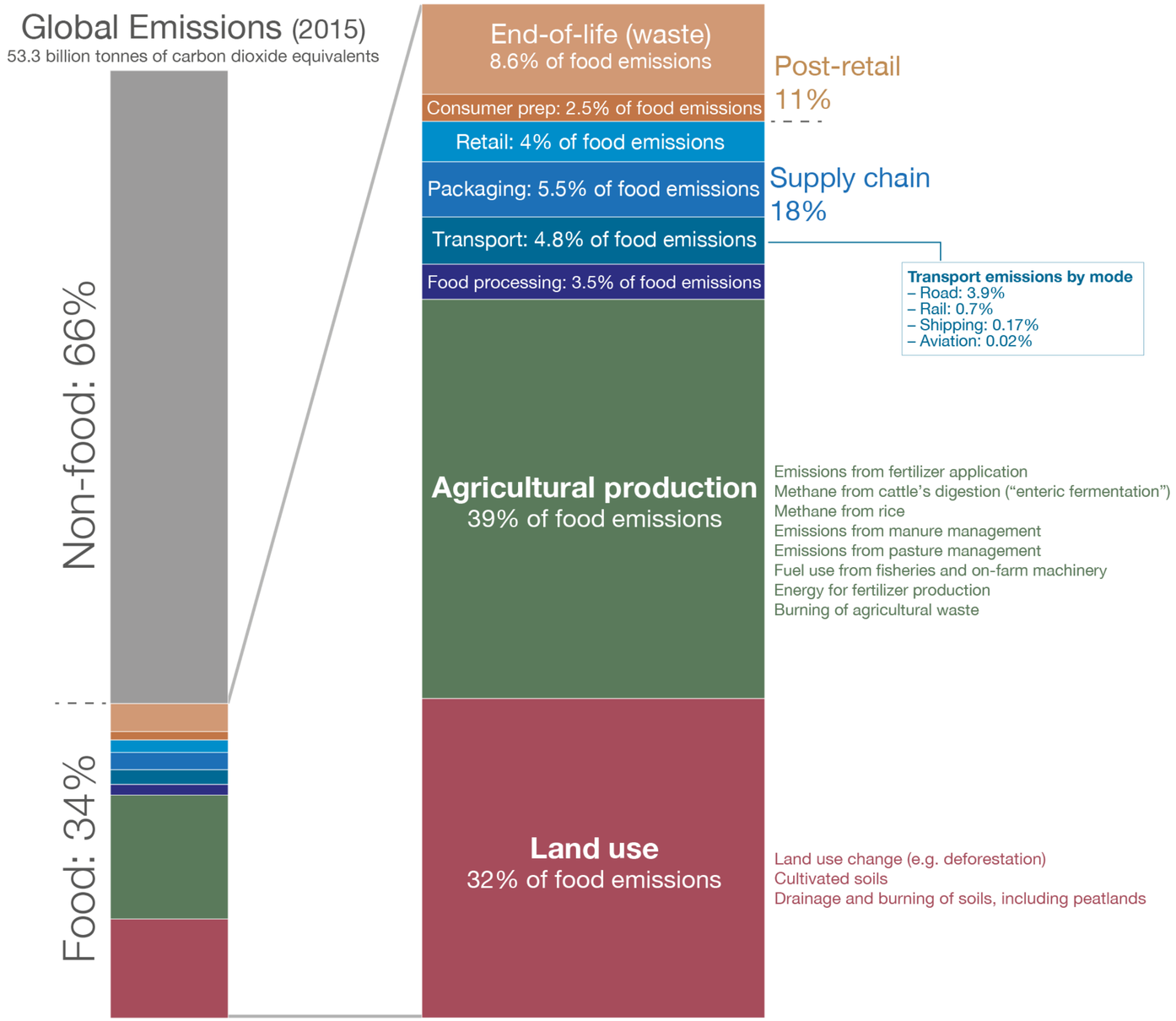
- Crippa, M., Solazzo, E., Guizzardi, D. et al. (2021) Food systems are responsible for a third of global anthropogenic GHG emissions.

- This study adds a lot of value because it quantifies the breakdown of emissions by stages of the supply chain.

- The majority of emissions – over two-thirds – came from land use change and the on-farm production of the food itself. The remainder came from supply chain emissions and consumer cooking and waste.

One-third of global greenhouse gas emissions come from food systems

Our World in Data

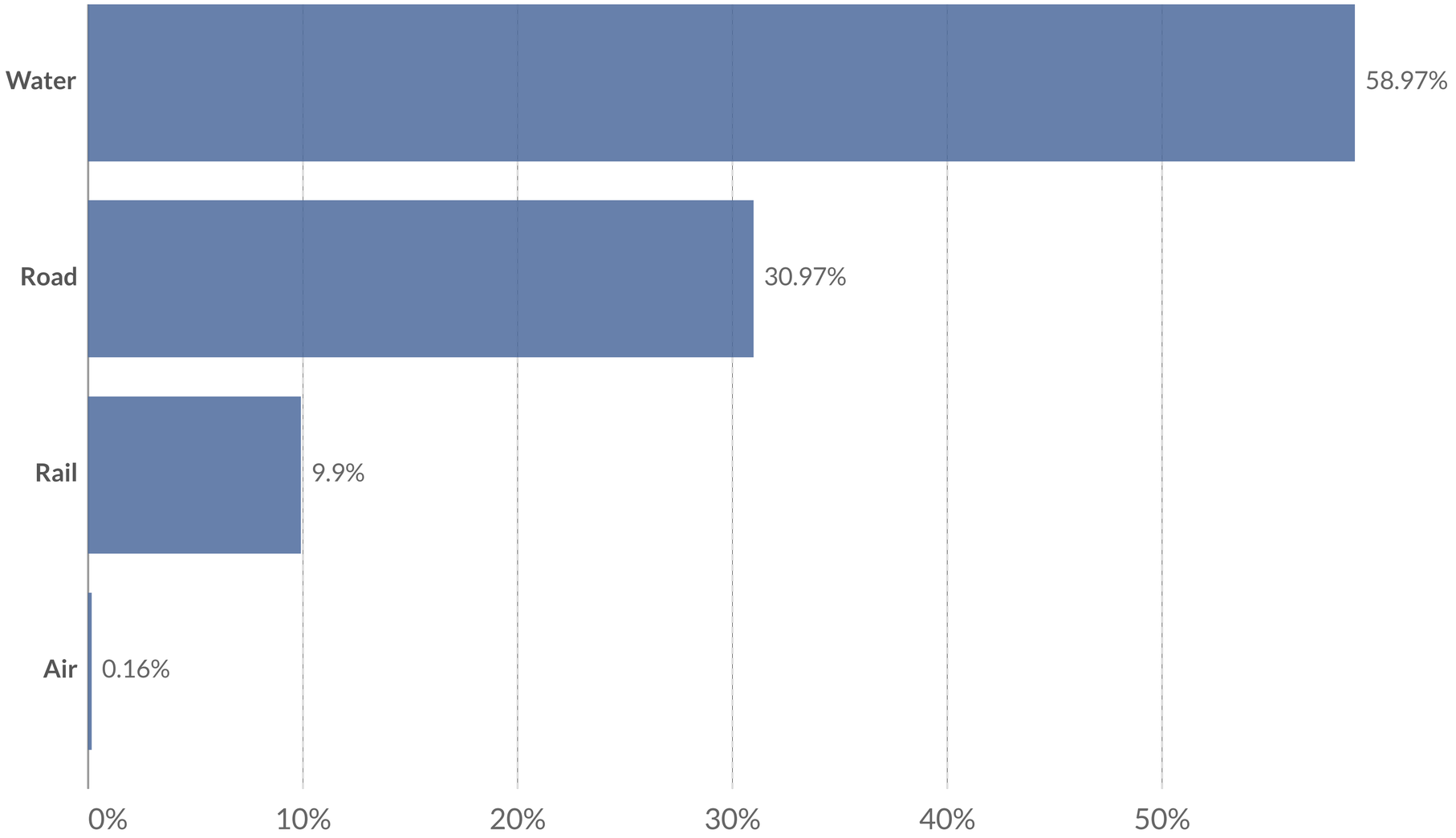


Data source: Crippa, M., et al. (2021) Food systems are responsible for a third of global anthropogenic GHG emissions. *Nature Food*.

Share of global food miles by transport method

Food miles are measured in tonne-kilometers, which is a unit of measure of freight transport which represents the transport of one tonne of goods over a distance of one kilometre. Shown is each transport method's share of global food miles.

Our World in Data



Source: Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. Science

GHG emissions from waste

Poore and Nemecek (2018) found that almost one-quarter of food's emissions come from food that is lost in supply chains or wasted by consumers.

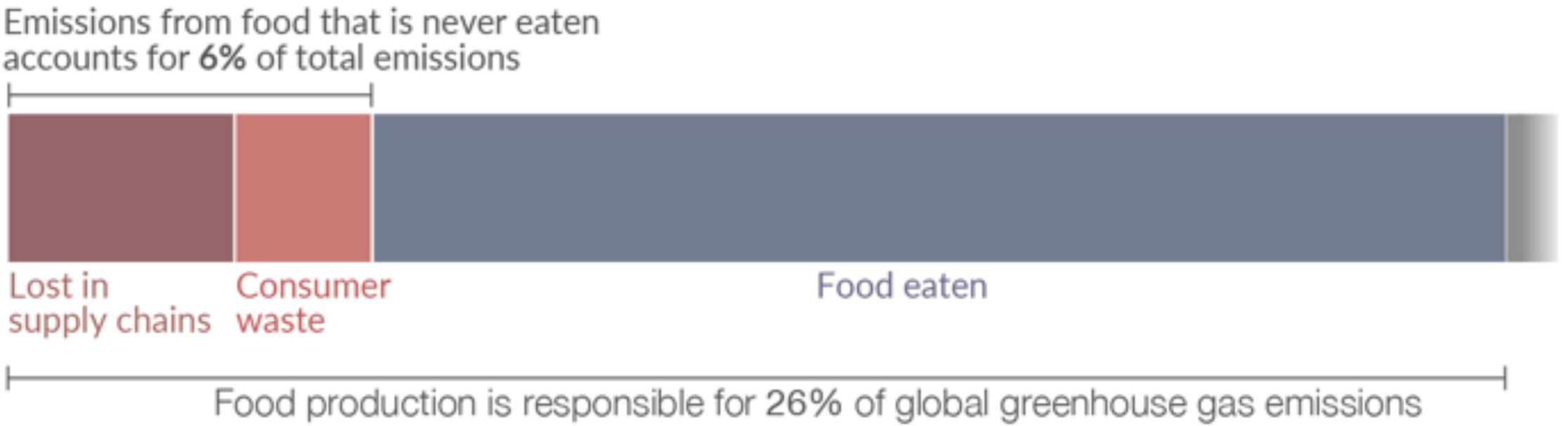
Two-thirds of this comes from losses in the supply chain which result from poor storage and handling techniques; lack of refrigeration; and spoilage in transport and processing. The other 9% comes from food thrown away by retailers and consumers.

This means that food waste is responsible for around **6% of total global greenhouse gas emissions.**

To put this in context: it's around three times the global emissions from aviation. Or it would be the world's third largest emitter. Only China (21%) and the United States (13%) emitted more.

6% of global greenhouse gas emissions come from food losses and waste

Our World in Data



Note: One-quarter of food emissions comes from food that is never eaten: 15% of food emissions from food lost in supply chains; and 9% from consumer waste.
Data source: Joseph Poore & Thomas Nemecek (2018). Reducing food's environmental impacts through producers and consumers. *Science*.