Seafood for Life, Securing a Sustainable Future

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RESAS
Rural & Environmental Science and Analytical Services

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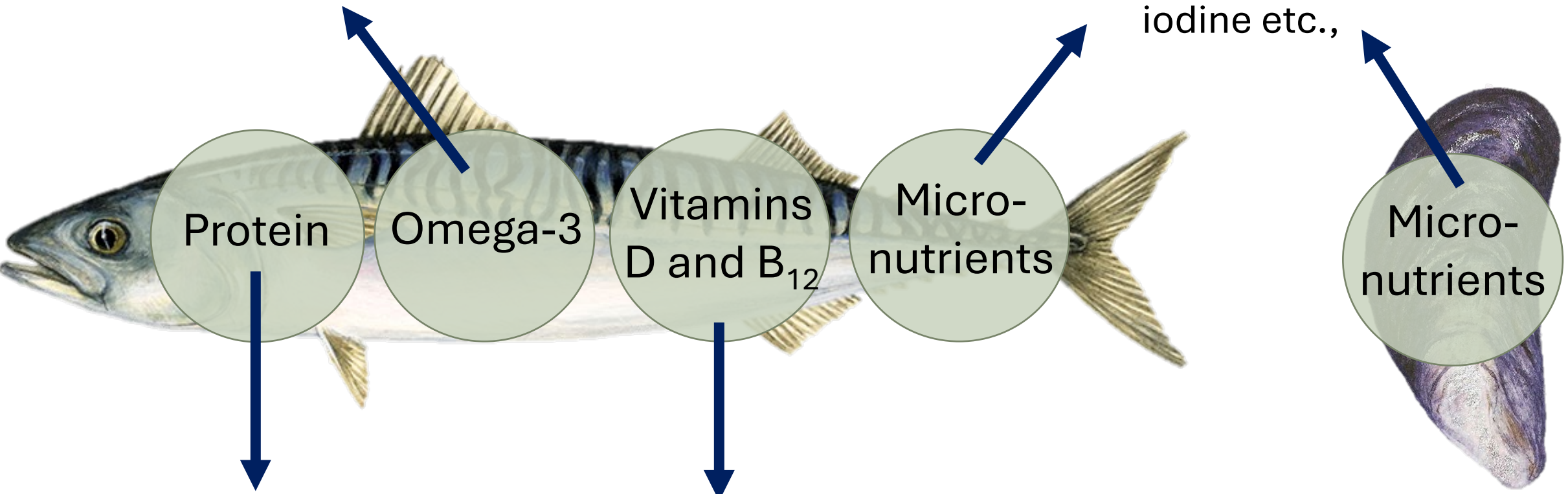
Health benefits of blue foods

Low to moderate fish consumption prevents mortality from coronary heart disease

Selenium, zinc, iron, iodine etc.,



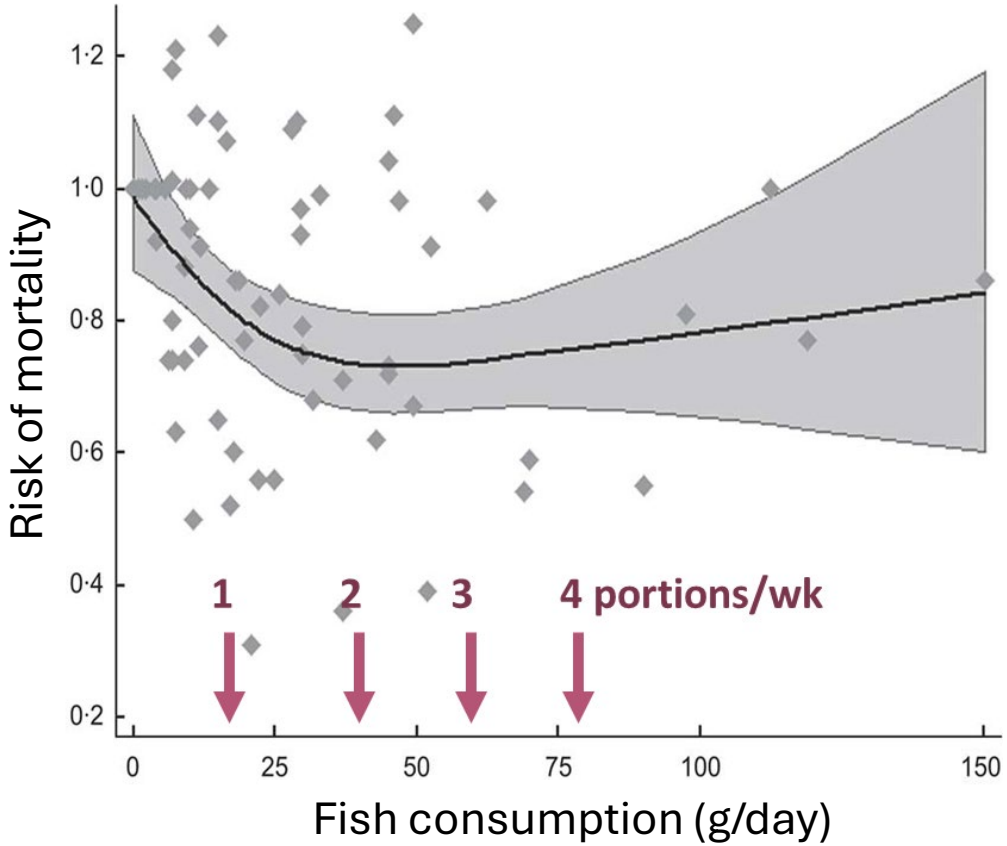
Lean source

Most important dietary source of vitamin D, and a rich source of vitamin B_{12}

Fish consumption and health- omega-3

UK: Recommendation to eat **two portions of fish per week**, one of which should be oily

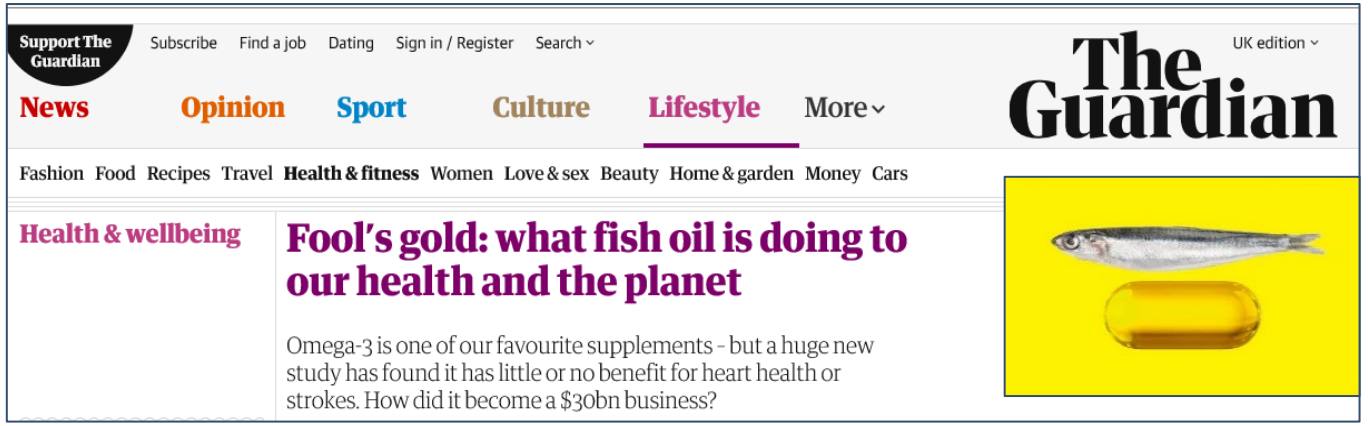
Zheng J et al (2012). Public Health Nutrition



Findings: Either **low** (1 serving/week) or **moderate** fish consumption (2-4 servings/week) had a beneficial effect on the prevention of cardiovascular disease mortality by 16% and 21%, respectively

Fish consumption vs omega-3 supplements

Study reviewed trial effects of increasing fish and plant-based omega-3 fats on cardiovascular disease



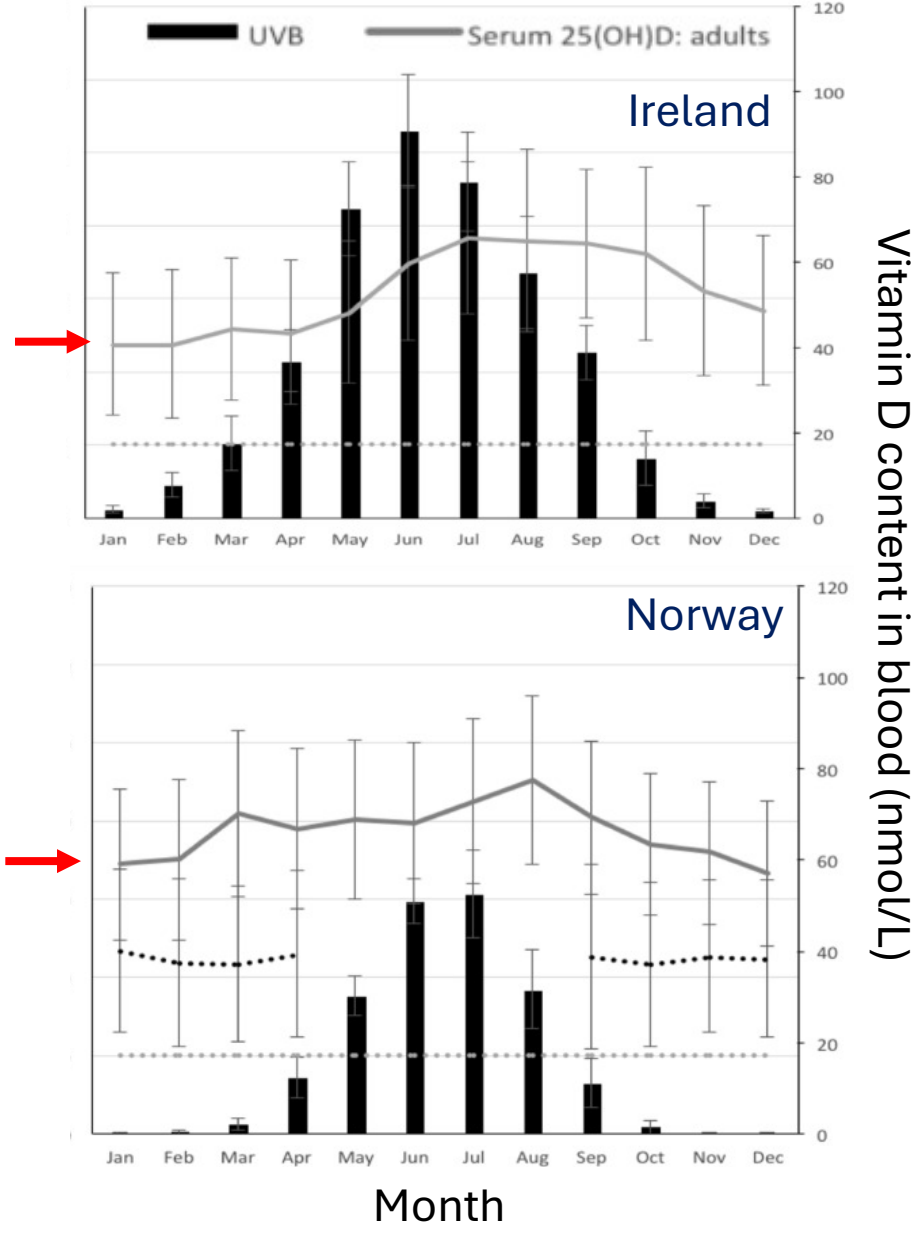
Abdelhamid et al (2020). Cochrane

Findings: Omega-3 supplements probably not beneficial for preventing or treating cardiovascular disease: **1000 people** will need to take omega-3 supplements for around **4 years** so that **three** of those people avoids a coronary heart disease event

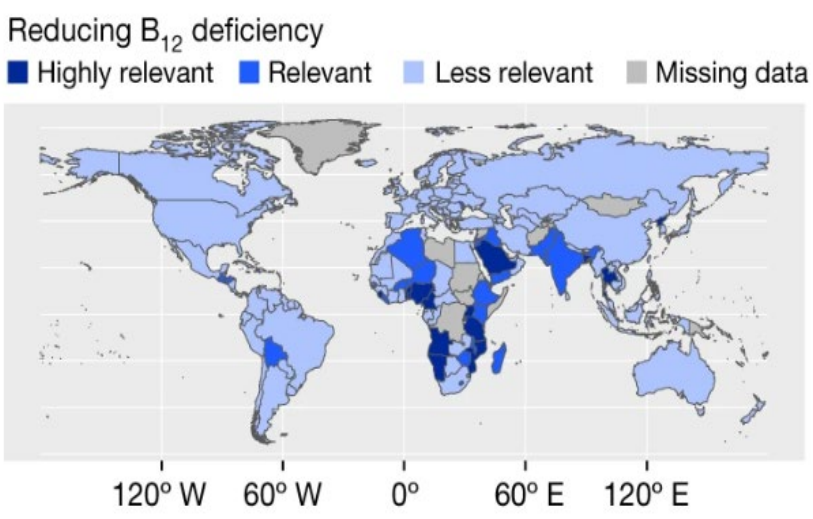
Fish consumption and health- vitamin D

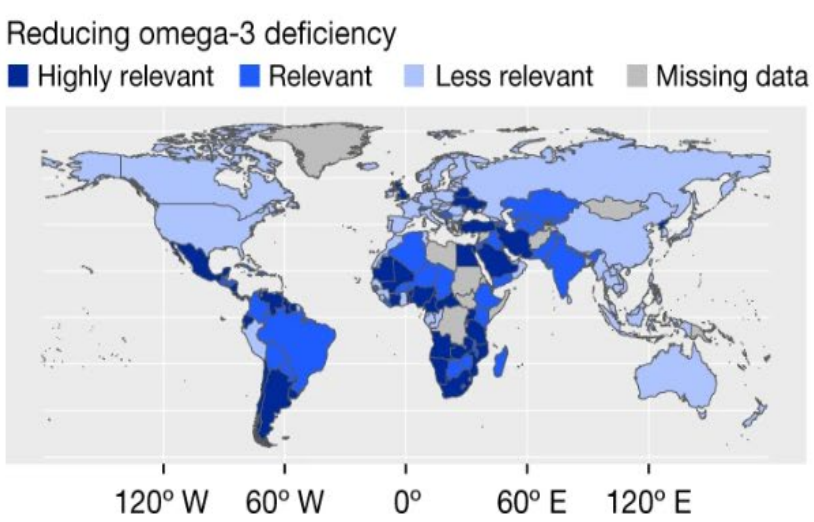
Findings: Seasonal variation in vitamin D in blood in Irish adults was dampened in Norwegian adults, despite considerably lower sunlight availability at these northern latitudes. Due to higher vitamin D intakes from the diet

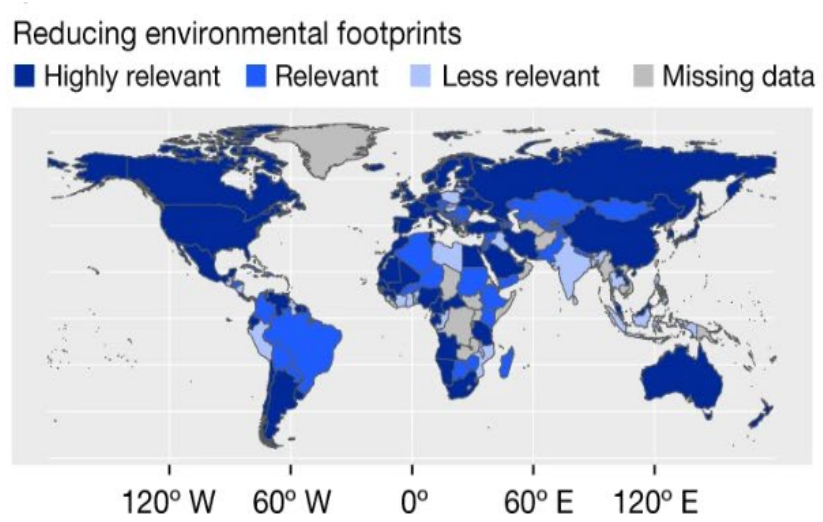
O'Neill et al (2016). Nutrients



Aquatic foods, nutrition, and the environment



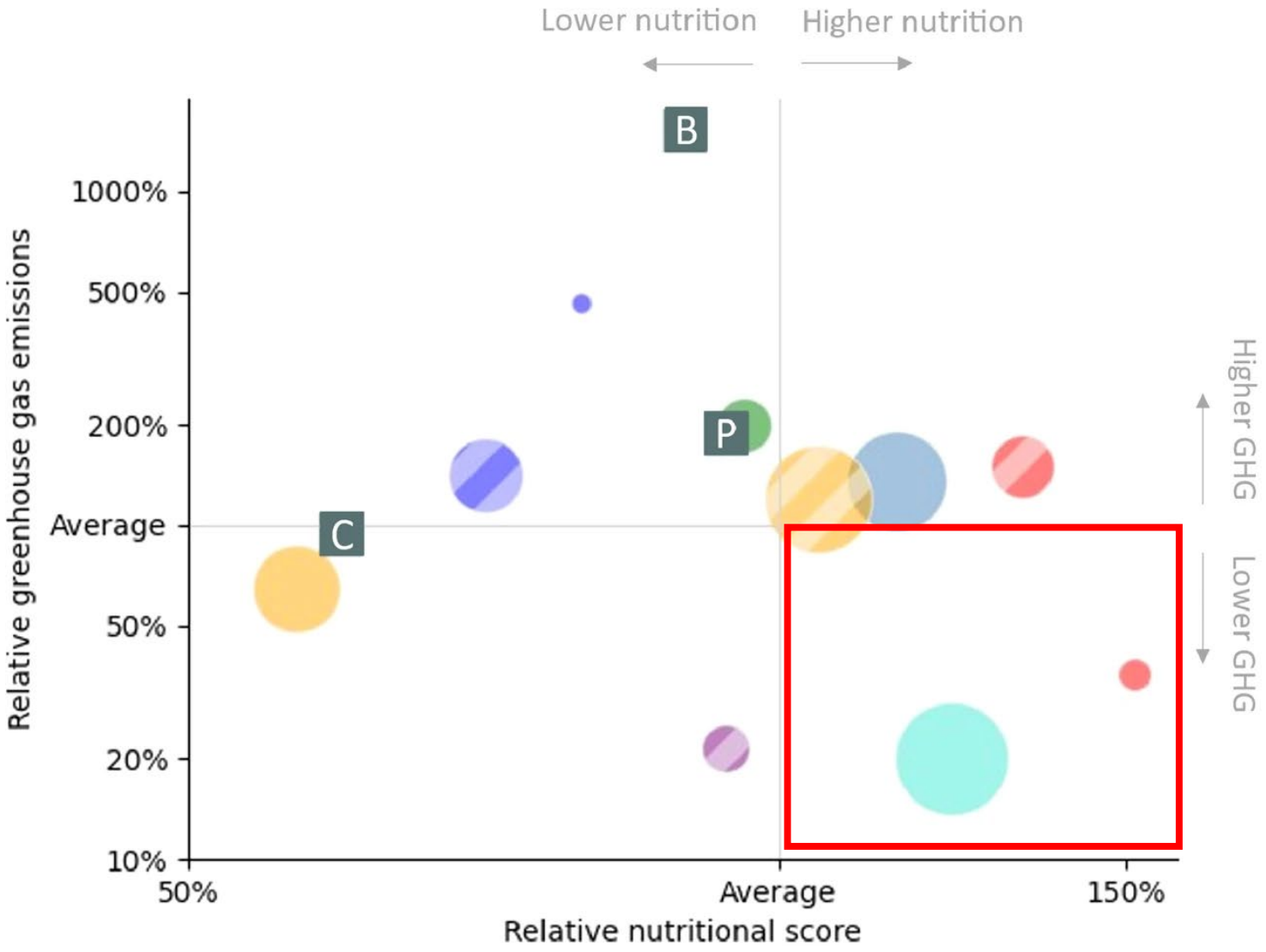




Crona et al (2023). Nature

Findings: Increased consumption of aquatic foods in the UK could address omega-3 deficiencies and reduce dietary environmental footprints but less relevant for address vitamin B_{12} deficiencies

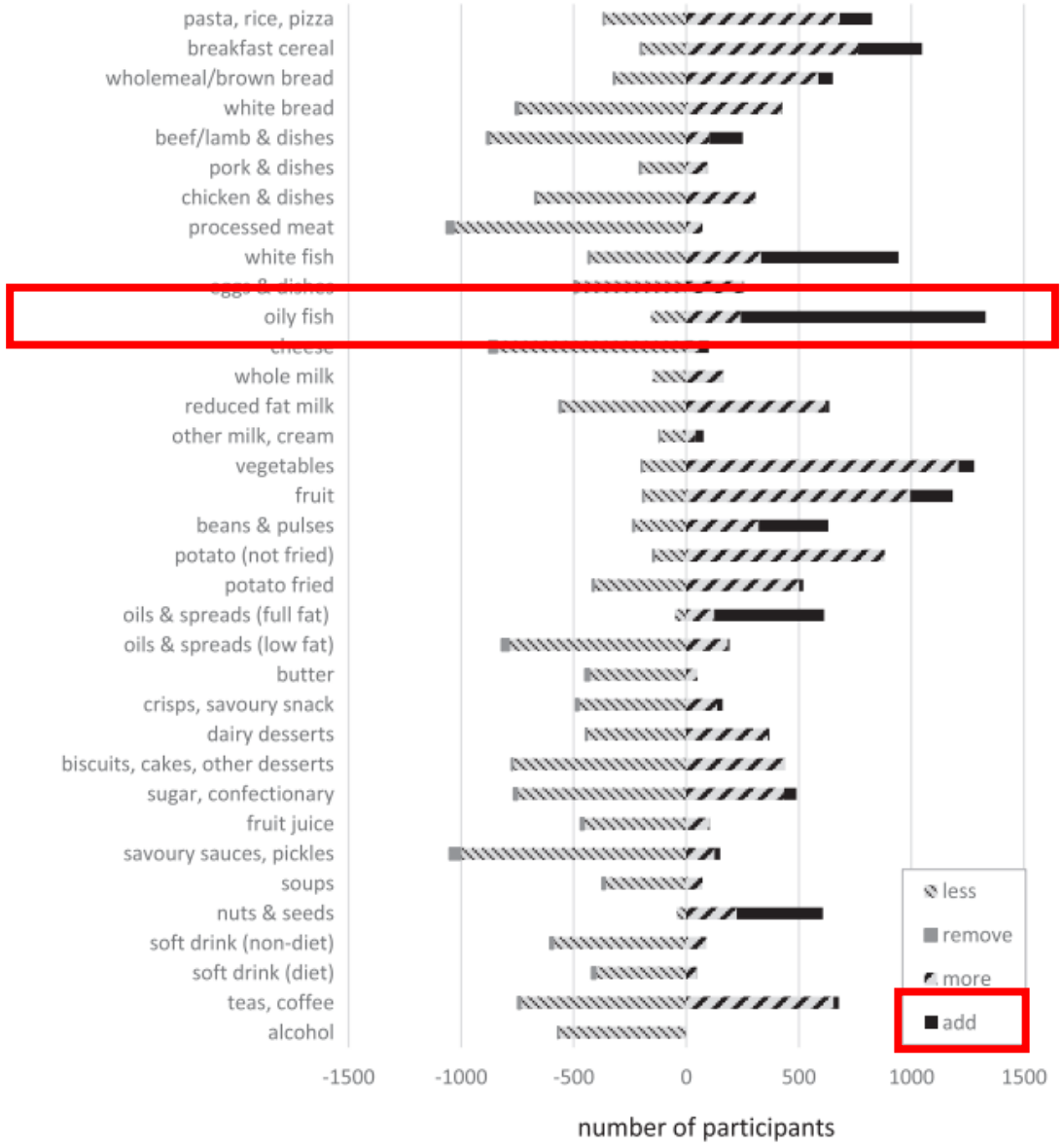
Seafood consumption and environment



Findings: Most seafoods have lower emissions than land-based protein foods, whilst providing more nutrients

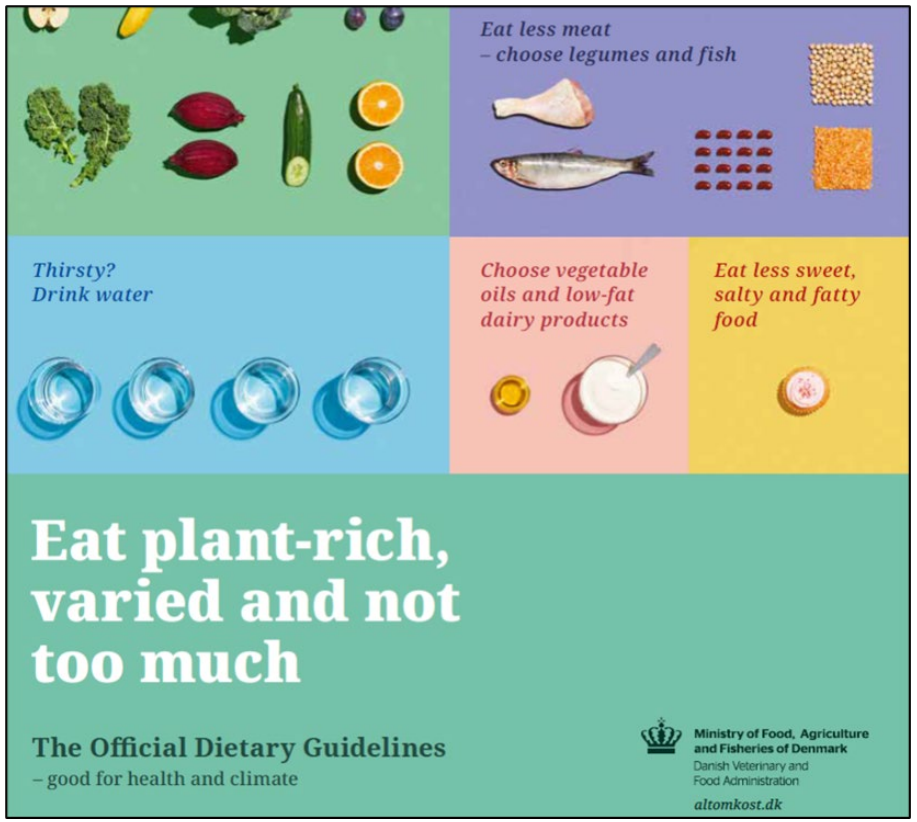
Bianchi et al (2022). Communications Earth & Environment

Modelling sustainable diets

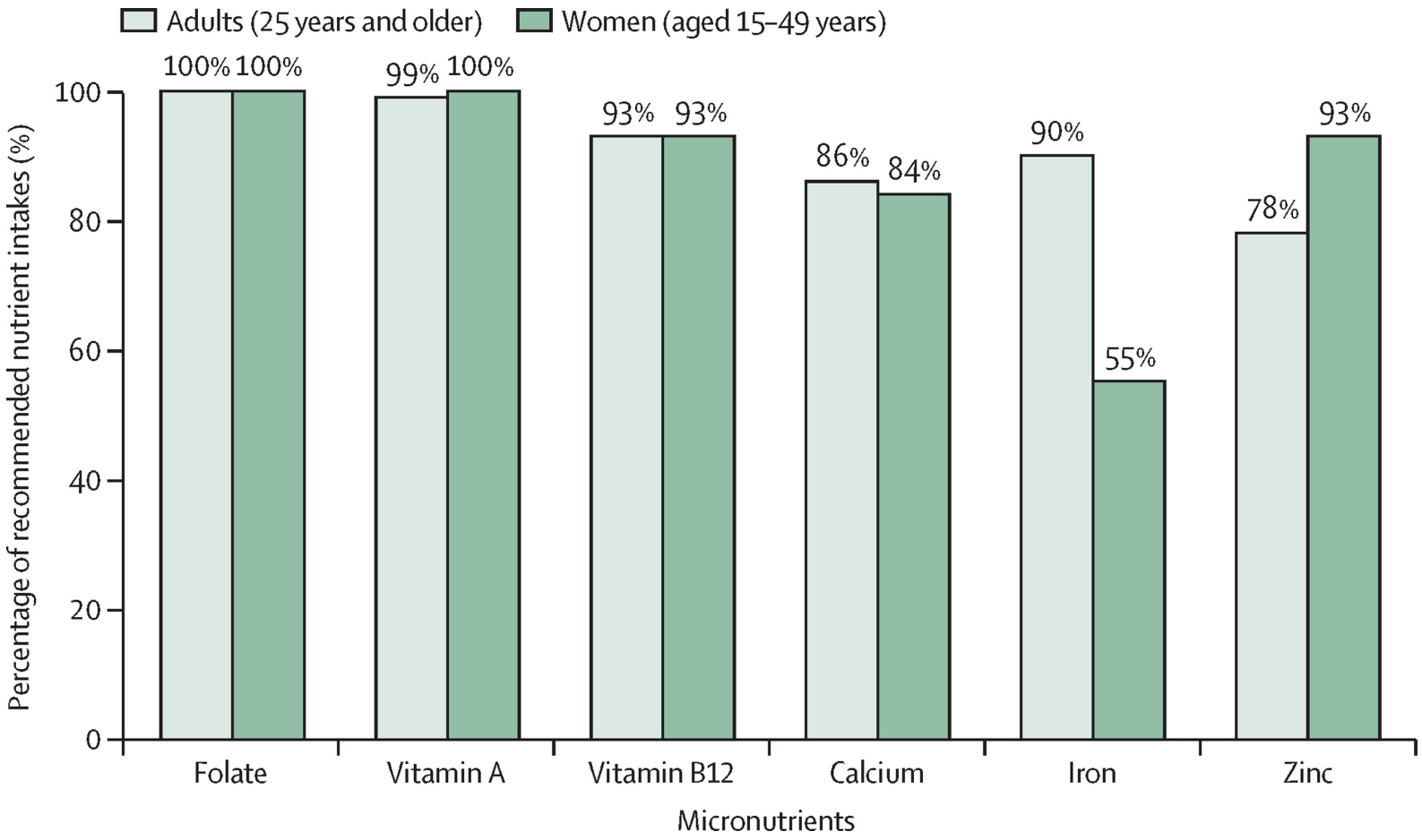


Horgan et al (2016). International Journal of Behaviour Nutrition and Physical Activity

Findings: Modelling for optimal sustainable diets (that is, those with reduced GHG emissions) found that fish was the most common item to be added to diets to make them healthier and more sustainable



Net zero diets

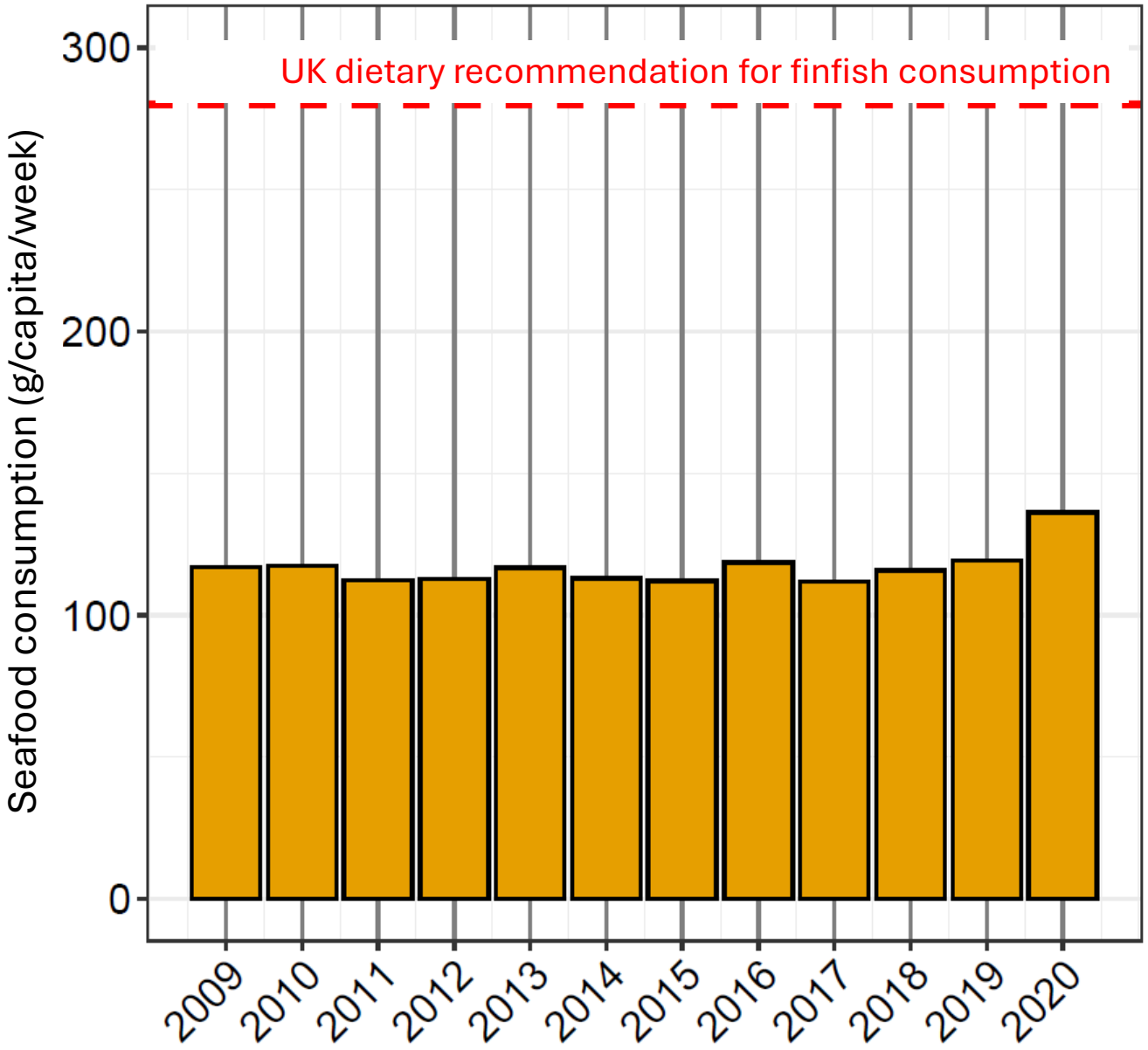


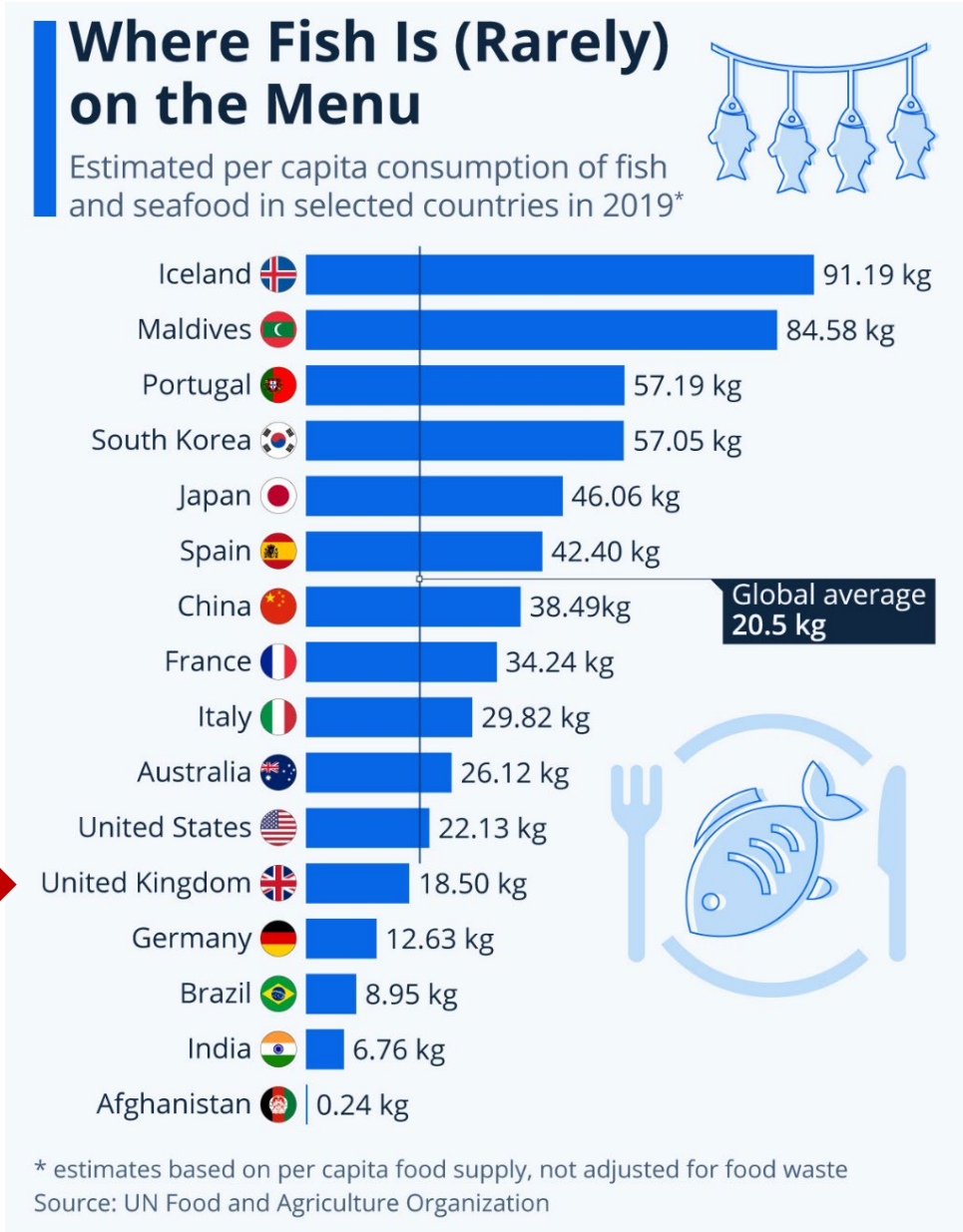
Beal et al (2023). The Lancet

- Consumption of plant-based diets (low in animal products), is increasingly recommended
- Such diets can be insufficient in vitamin B_{12}, calcium, iron and zinc
- Increased intake of fish and shellfish (including crustaceans and bivalves) could offer the nutrients that plant-based diets lack

Findings: The EAT–*Lancet* planetary health diet insufficient in of vitamin B12, calcium, iron, and zinc

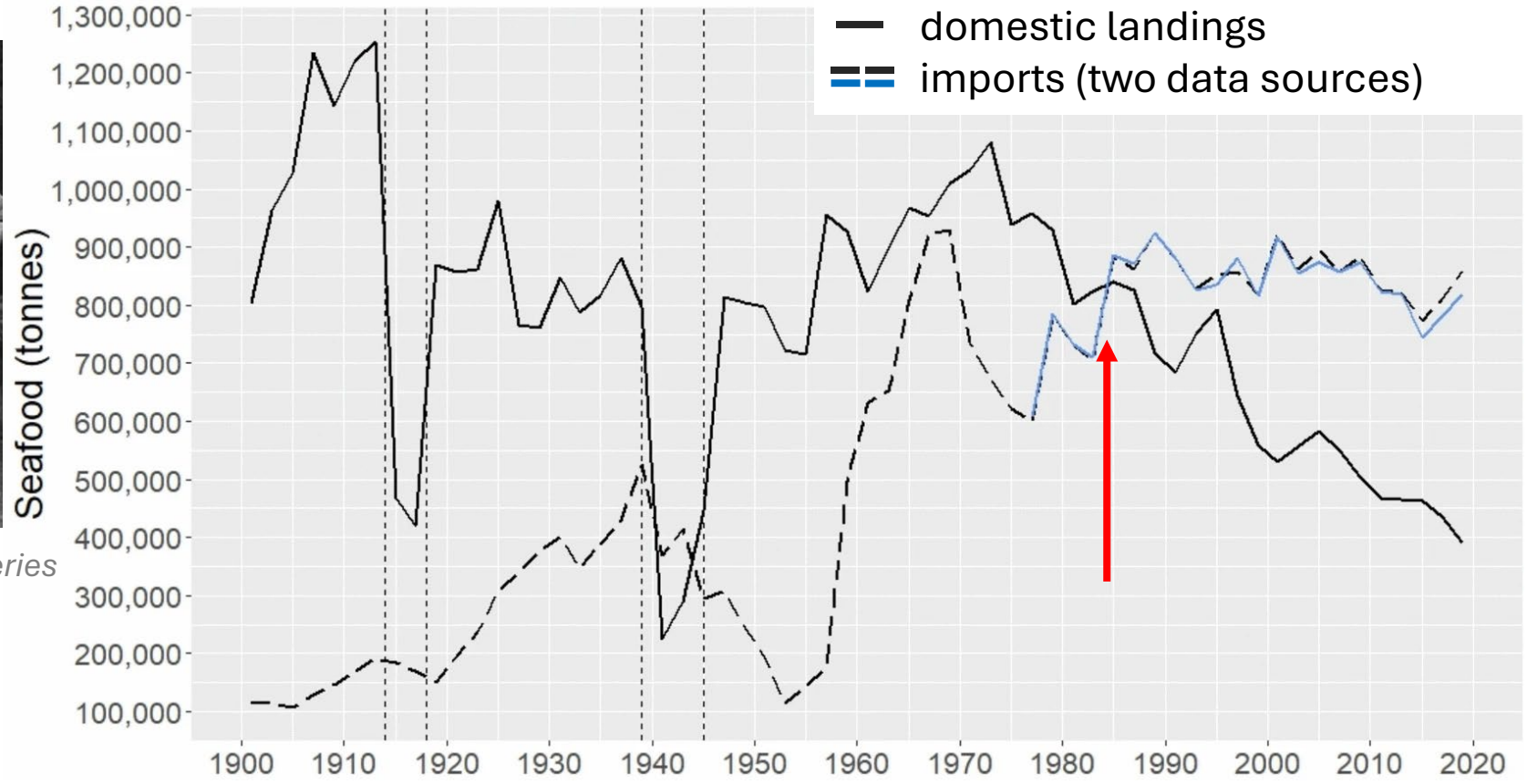
UK trends in fish consumption





Reliant on imports for fish demand

Heard et al (2025). Reviews in Fish Biology and Fisheries



Findings: UK domestic fisheries landings declined from the 1970s, (overexploitation and regulatory reforms) leading to growing dependence on fish catches outside national waters and the international seafood trade. Seafood imports increased by **6.4-fold** from 1900 to 2020, overtaking domestic landings in 1985

Mapping UK seafood supplies

Wild capture production

Aquaculture production

International trade

Purchases

Consumption

Marine Management Organisation

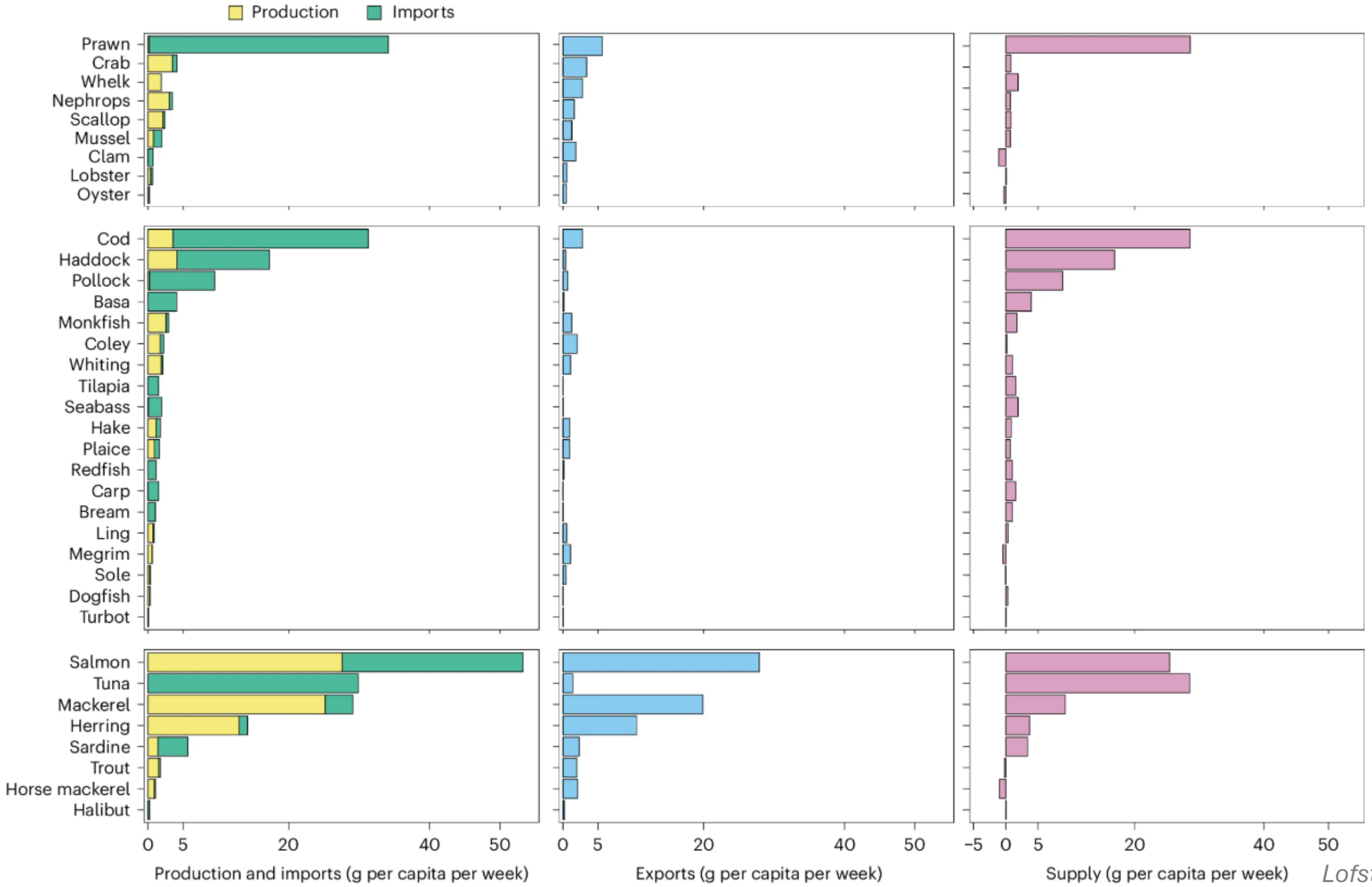
Cefas

HM Revenue & Customs

Department for Environment Food & Rural Affairs

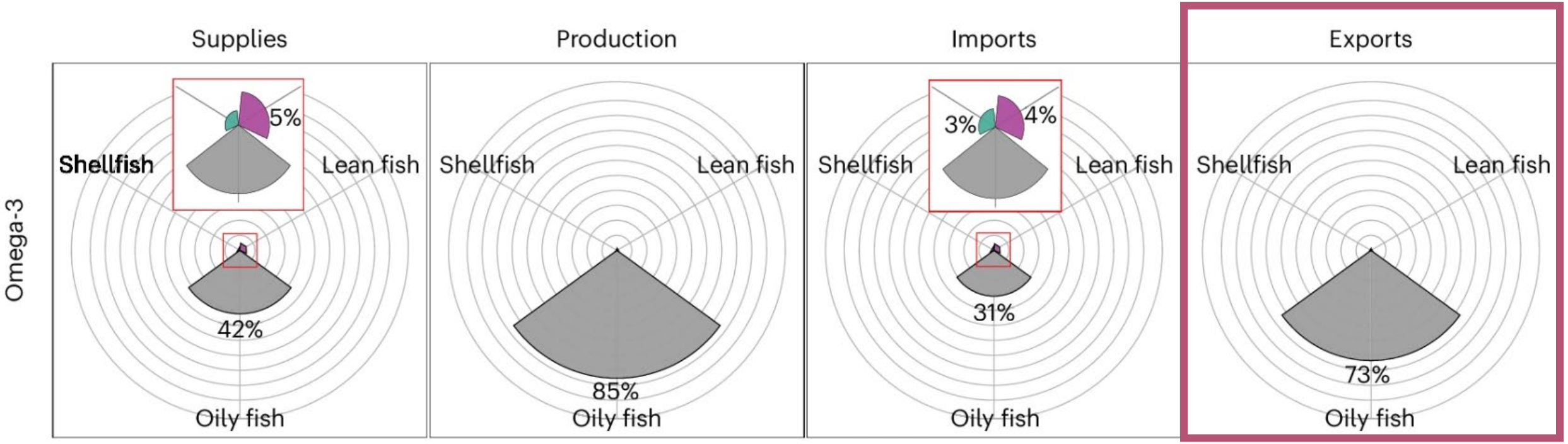
Department of Health & Social Care

The UK is a net importer of seafood



Lofstedt et al (2025). Nature Food

Large nutrient losses from seafood through trade



Lofstedt et al (2025). Nature Food

Findings: The UK experiences large losses in nutrients from seafood through international trade, notably **omega-3 fatty acids** and **vitamin B12**. Such nutrient losses primarily occur through exports of oily fish (herring, mackerel, and salmon). Retaining more exports of oily fish for domestic consumption could contribute significantly to achieving recommended nutrient intakes

Proposals to increase demand

Product innovation and reformulation

Securing a sustainable seafood future

We can secure a sustainable seafood future by:

1. Increasing demand for locally-caught fish through product innovation and reformulation
    - Focus on lower-income groups
    - Diversification beyond the ‘big 5’
2. Developing fisheries and public health policies that promoting increased consumption of locally produced (wild-caught and farmed) oily fish species

Challenges

- Economic trade- offs?
- Shift in stocks due to climate change

Positive outcomes:

- Build resilience in the UK seafood sector and boost the health of our nations

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