NIHR | Health Protection Research Unit in Environmental Change and Health at London School of Hygiene and Tropical Medicine

Environmental Change and Health Briefing #2 – March 2025

Integrating sustainability in food-based dietary guidelines

More countries around the world are incorporating environmental goals into their national food-based guidelines. We summarise current progress in the development of such guidelines.

KEY MESSAGES

1 A growing number of countries are explicitly including environmental sustainability in their food-based dietary guidelines.

2 Approaches to incorporating and communicating environmental aspects of dietary recommendations differ around the world. Countries vary in their approaches to integrate environmental benefits within dietary recommendations. Some model environmental metrics (e.g. greenhouse gas emissions) alongside nutritional requirements, while others only use environmental impacts as additional information in communication tools.

3 Most food-based dietary guidelines aimed at promoting sustainability recommend reducing meat consumption and replacing it with plant-based alternatives. However, developing recommendations for dairy and fish consumption presents a greater challenge, as it involves balancing their considerable negative environmental impacts with their established health benefits.

4 Significant challenges remain in characterising and communicating the varying environmental impacts of food groups. Greenhouse gas emissions are often used as a proxy for other environmental impacts.

5 Stakeholder engagement plays a large part in the national guideline development process, but managing the different and sometimes competing stakeholder priorities remains a challenge for guideline development and implementation.

FOOD BASED GUIDELINES

Food-based dietary guidelines (FBDGs) provide a practical way to communicate evidence-based population dietary recommendations. Traditionally they focused exclusively on nutritional health, but some countries have started explicitly including environmental sustainability in FBDGs as a way to help them also communicate and meet environmental goals.

This briefing presents results combining a rapid review of guidelines, their supporting documents, and interviews with key persons in those countries that have incorporated environmental sustainability into their dietary guidelines. It identifies the key processes involved in their adoption and the barriers to guideline development.

Figure 1. Public-facing recommendations for animal-source food groups in each case study country.

Denmark

- Eat less meat (guideline 350g per week) especially beef and lamb and processed meat – choose legumes and fish
- Choose vegetable oils and low-fat dairy products (250-350ml milk products and 20g cheese daily)
- Eat 350g per week fish (of which 200g is fatty fish). Choose fish with lower climate impacts and those with eco-labels

Netherlands

- Eat less meat and more plant-based foods, and vary with fish, pulses, nuts, eggs and vegetarian products. Limit processed meat
- Eat enough dairy and cheese, but within bounds
- Eat fish once a week, especially oily fish. Choose fish with eco-labels

Flanders (Belgium Superior Health Council)

- Limit the consumption of red meat, especially processed meat. Red meat can be replaced by e.g. legumes, fish, eggs or poultry
- Consume 250-500ml day milk and dairy products
- Eat fish once or twice a week, focusing on sustainable fish high in omega-3 fatty

France

- Limit the consumption of meats, while favouring poultry and limiting other meats (pork, beef, veal, mutton, lamb, offal) to 500 g per week. Limit the consumption of processed meat, to 150 g per week
- Consume 2 portions of dairy per day
- Eat fish twice a week including one portion of oily fish

Chile

- Does not mention meat in its main messaging, instead high-lighting the role of legumes as a good source of protein
- Consume dairy
- Increase fish consumption from authorised sources

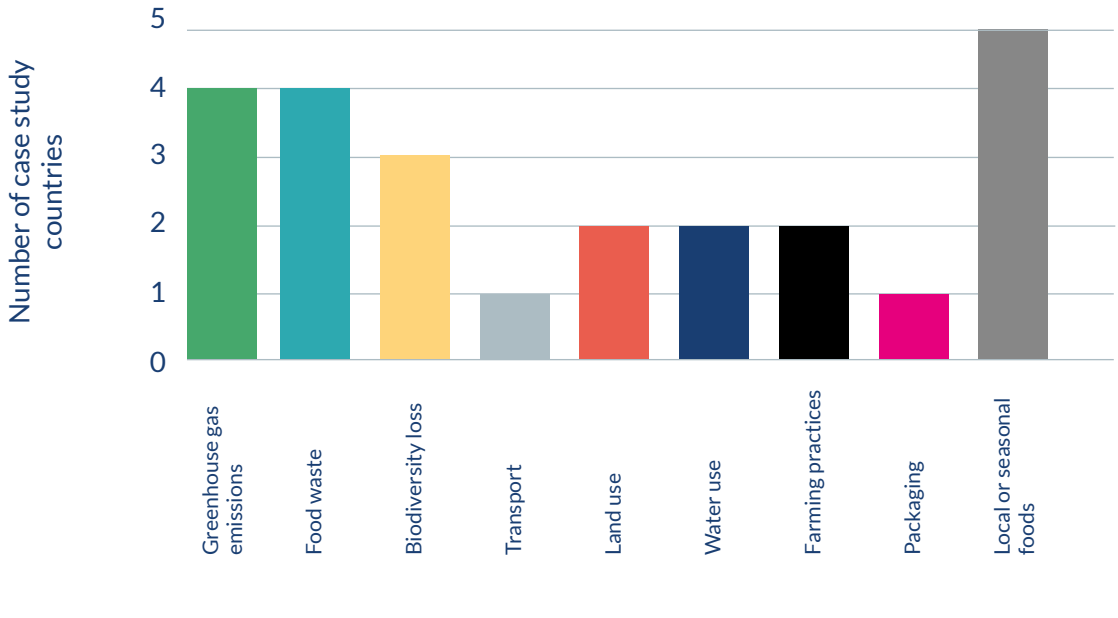
WHAT DO ENVIRONMENTALLY SUSTAINABLE DIETARY GUIDELINES AND THE PROCESS TO DEVELOP THEM LOOK LIKE?

- The **motivations** for adopting sustainable dietary guidelines were 1) recent reports on principles of sustainable diets from FAO, WHO and the EAT-Lancet Commission, 2) growing public awareness leading to political pressure, and 3) requests from government departments.
- Guideline **development** was led either by the relevant department of health or a national food and nutrition government body. Participants in the decision-making process included scientific experts, NGOs, healthcare professionals, consumers and, in some situations, representatives from the food industry.
- The **methods** used for guideline development were literature reviews and optimisation modelling including both environmental metrics and nutritional benefits (with additional constraints for acceptability of the resulting diets).
- Once the available evidence had been reviewed and a scientific **consensus** was reached, additional stakeholders became involved. The stakeholder engagement experience was generally viewed positively but there were challenges including conflicts between different stakeholders. This was particularly the case in relation to food industry, for example livelihood concerns from the agricultural sector when recommendations were to reduce meat consumption (see below).

Integrating health and environmental considerations within FBDGs involved navigating synergies and trade-offs. The most common recommendation was to reduce consumption of meat (particularly red and processed meat) and increase the emphasis on consumption of plant-based foods, because this has clear benefits for both health and the environment. Recommendations to reduce dairy consumption were less common despite its high environmental impact, because there was a perceived conflict with health messaging. Fish was also a difficult food group to balance as consumption is recommended for health reasons but there are clear environmental impacts from consuming both wild and farmed fish. To try and balance the health-environment trade-offs of dairy and fish, some countries reviewed the evidence base to establish minimum quantities required for health and then reduced recommendations to this point to limit environmental impacts e.g. changing recommendations from two to one portion of fish per week. The variation in public-facing recommendations of animal-source food groups across case study countries is captured in Figure 1.

Several environmental domains were considered and emphasised in public-facing recommendations (Figure 2). Greenhouse gas emissions (particularly from meat), eating local / seasonal produce, and minimising food waste were the most included environmental domains. Sustainability of food packaging and transport were less frequently mentioned, although the latter may have been included in GHGe calculations. One of the two countries that completed optimisation modelling including environmental metrics (often using GHGe as proxy for broader environmental concerns owing to limited data) noted that this resulted in recommendations for reductions in meat and eggs that were greater than optimisation for nutritional

Figure 2. Environmental domains considered in food-based dietary guidelines. Domains adapted from the environmental principles of the FAO & WHO's 16 guiding principles for healthy and sustainable diets.



Some recommendations also emphasised cost savings from actions such as reducing food waste.

CURRENT CHALLENGES TO CONSIDER WHEN DEVELOPING SUSTAINABLE DIETARY GUIDELINES

- Limited data on the environmental impacts of food and drink, particularly for impacts on biodiversity and data disaggregated by production method rather than just food type. Additionally, there is a lack of universal agreement on managing these gaps and limitations.
- Management of the trade-offs between environmental goals and nutritional requirements.
- Conflicting interests among stakeholders (particularly those from the food industry). There was also some confusion over whether / how to incorporate novel plant-based alternative foods such as plant milks or meat alternatives.
- Limited capacity to monitor and evaluate the guidelines once implemented and therefore show impact.

TRANSLATING GUIDELINES INTO PUBLIC MESSAGES

All five countries reviewed included environmental messaging with their guidelines, through social media and visual aids, where plant-based foods were often emphasised. Feedback from consumer testing influenced final messaging. Countries often avoided recommending specific amounts of foods and made messages more general to avoid being "too prescriptive" e.g. eat less red meat. Feedback also highlighted the importance of choosing the correct terminology, for example to avoid inadvertently associating guidelines with specific diets like "vegan" or "vegetarian". Some recommendations also emphasised cost savings from actions such as reducing food waste.

LOOKING AHEAD

Current decision making around sustainable FBDGs is predominantly based on the primary health impacts of changes in diets without adequately considering the secondary health impacts of climate change. To address this gap, it is crucial to fully integrate climate-related health risks in research supporting the development of dietary guidelines so that policy decisions can account for the various co-benefits and trade-offs.

Ultimately, the environmental impacts of food systems are a rapidly evolving field, making it essential to regularly update FBDGs as new evidence on environmental outcomes emerges. Keeping these guidelines current is a crucial step in mitigating climate-related impacts, including those on human health, both now and for future generations. It is also important to recognise that inaction is not a neutral choice - delaying updates in pursuit of absolute certainty in data and research can have serious consequences for both population and environmental health.

References and sources

This brief was written by Genevieve Hadida, Rosemary Green, Grace Turner and Pauline Scheelbeek at the London School of Hygiene and Tropical Medicine. This project was funded by the National Institute for Health and Care Research (NIHR) Health Protection Research Unit in Environmental Change and Health (NIHR 200909), a partnership between UKHSA and LSHTM, in collaboration with University College London and the Met Office. The work was jointly commissioned by the UKHSA and the Office for Health Improvement and Disparities (OHID) within the Department of Health and Social Care (DHSC) who provided oversight and input on the nutritional aspects. The views expressed are those of the author(s) and not necessarily those of the NIHR, UKHSA, LSHTM, UCL, Met Office or DHSC.

Workshop report: integrating environmental sustainability within national food-based dietary guidelines.

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Met Office

UCL

UK Health Security Agency