

Sustaining our future

The expertise of dietitians will have a role to play in guiding legislation around sustainable food

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DIETITIANS ARE THE GATEKEEPERS of what constitutes a healthy diet, but to what extent can a healthy diet also be a sustainable one? With increasing awareness about the environmental impact of the foods we eat, many consumers are striving to follow more sustainable eating patterns. Consequently, political organisations and citizens alike will look to dietitians for guidance on how best to achieve this. In 2017, the British Dietetic Association published a policy statement on sustainable diets. It indicated that if dietitians are to retain the profession's position as experts in the interpretation of nutritional science, they should be able to reconcile this data with environmental science to give consistent messages about what constitutes healthy, sustainable eating patterns.

What is a sustainable diet?

With the world's growing population predicted to reach 10 billion by 2050, the United Nations has warned that producing enough food to meet global nutritional needs will be one of the greatest upcoming challenges facing the world.¹ To meet these demands, it has been estimated that food production will need to increase by 50% globally.¹ This is compounded by the prevailing issue of global warming, bringing an urgent need to reduce the greenhouse gas emissions caused by food production.

Sustainable diets are those that fully meet the nutritional needs of both present and future generations.² To completely reshape how we eat for the achievement of environmental goals alone would be unbalanced and unsustainable. Therefore, public policy must ensure that our food supply is not just sparing of ecosystems

and biodiversity, but also nutritionally adequate, affordable and socially acceptable.³

Naturally, there are challenges and conflicts in achieving balance across all four dimensions. For example, using insects as a source of dietary protein may be nutritious, affordable and environmentally friendly but at present, may be rejected by some cultures. While trade-offs need to be made across the sustainability dimensions, factors can be measured along vectors of nutrition, cost, environmental and consumption constraints, in order to optimise any newly proposed food patterns and keep them as close as possible to the original diet.⁴ Dietitians and nutritional scientists have an important role to play in assuring that nutritional security is addressed and not lost from the food policy debate.

Evolving dietary guidelines – need for clarity

Global initiatives to limit climate change have resulted in political commitments and public awareness about a need for change. Food-based dietary guidelines have traditionally focused on nutritional goals, but it is now recognised that they should also include environmental considerations.⁵ With this, food policies in many countries are beginning to incorporate environmental factors to understand what sustainable dietary patterns should look like.

Some recommendations set out by the United Nations include: having a diet rich in plant-based foods, focusing on seasonal and local foods, consuming fish from sustainable stocks only, reducing food waste and reducing the intake of highly processed foods, red meat and sugar-sweetened beverages.⁵ However, most official dietary guidelines that currently

address environmental aspects do so in a broad sense and only a few mention food waste.⁵ There is often a lack of specificity regarding the types of foods that have lower environmental impact, with little differentiation between the carbon footprint of individual types of plant or animal foods, eg. a mango imported from Africa versus an apple produced from a local orchard.

The National Food Agency in Sweden has produced perhaps one of the best examples of sustainable dietary guidelines, which it sums up by advising consumers to “Eat greener, not too much and be active”.⁶ At present, food-based dietary guidelines in Ireland are health-based, with no direct environmental considerations.⁷ The UK's Eatwell Guide, which was updated by Public Health England in 2016, touched on sustainability by changing the name of certain food groups to reflect foods which were considered more environmentally sustainable; for example, the previous ‘Meat, fish eggs and beans’ food group was renamed ‘Beans, pulses, fish, eggs, meat and other proteins’ to highlight the contribution of non-meat sources to protein intake.⁸ Also in the UK, the World Wildlife Fund has gone a step further and produced Livewell Plates, which are based on robust environmental modelling and are designed to give a 30% reduction in the food related carbon footprint by 2030.⁹

However, given the complexity of dietary modelling and the various methods available in assessing environmental impact, there is a lack of alignment between organisations. In addition, the detail and emphasis on particular aspects of dietary change lacks consistency. For this reason,



the meaning of terms such as 'plant-based diets' can be open to interpretation and lead to confusion among consumers who wish to reduce their carbon footprint. For some, it may be understood as a reference to our Department of Health's Food Pyramid, which has fruit and vegetables at its base, while for others it may be interpreted as the complete exclusion of animal-based foods.

A world without animal foods

This year, a Greenpeace report called for meat and dairy consumption to be cut in half by 2050 in order to avoid dangerous climate change.¹⁰ While other official recommendations are less extreme, it is widely accepted that livestock contributes to the world's greenhouse gas emissions.¹¹ Population awareness about the environmental impacts of such foods is often cited among the drivers of veganism¹² and vegan campaigners argue for the complete elimination of all animal products from the food chain.¹³

While individual nutritional needs can indeed be met through carefully balanced vegan diets, balancing the needs of an entire population is a very different scenario, which has been shown to be ineffective as a solution to sustainability challenges.¹⁴ Researchers from the USDA and Virginia Tech conducted an in-depth analysis of the impacts of removing animals from US agriculture and warned that changing one facet of a complex ecosystem has ripple effects and unexpected collateral impact.¹⁴

As much of the land in the US is unsuitable for high value crops, the research indicated that over 57% of the additional food produced would have to come from grains such as corn and soybean. The overall reduction in greenhouse gas emissions was lower than expected at just 2.6 % and given that the plant-only system increased the probability of population deficiencies of calcium, vitamin A, vitamin B12 and important fatty acids, it was not considered a viable option.¹⁴

Making diets more sustainable

Commentary about the environmental impacts of food are plentiful on media platforms such as Netflix, but the peer-reviewed science in this field is still sparse. In assessing the greenhouse gas emissions of specific foods, it has been shown that not all animal foods have a high environmental impact and that some plant-based foods with low environmental impact are not promoted for good health.¹⁵

French epidemiologist, Dr Nicole Darmon and her team, conducted a series of studies to identify more sustainable food choices, incorporating all four pillars

of sustainability.¹⁶ Based on statistical modelling of the French diet, they found that the population could reduce greenhouse gas emissions by around 30% by eating more fruit and vegetables, eating less (but not eliminating) meat and drinking less alcohol. Maintenance of dairy consumption was recommended to ensure nutrient sufficiency. Similar findings were observed in optimised models of the Dutch diet.¹⁷

Livestock contributes to 18% of global greenhouse gas emissions,¹¹ with 2.7% coming from milk production.¹⁸ The overall impact of dairy must therefore be weighted against its nutritional value when modelling the most sustainable options for feeding the world's expanding population. As cows convert human-inedible materials such as grass into a nutrient dense, affordable source of protein, dairy has been acknowledged as an important source of nutrition in sustainable diets.^{4,19}

More than diet – keeping perspective

For consumers that are willing to make stark changes to their diet in order to reduce their individual carbon footprint, it is important that they can do it through an informed approach, which does not compromise their nutritional status. For those individuals that are at risk of negative health effects from dietary restrictions, they may benefit from some perspective about additional non-dietary approaches that can help to reduce their contribution to global greenhouse gas emissions. It has been estimated that eating a plant-based diet can reduce yearly emissions by 0.8 tonnes of CO₂-equivalents (tCO₂e), while avoiding air travel can save double that at 1.6 tCO₂e and living car-free can save triple the amount at 2.4 tCO₂e.²⁰ The Irish Environmental Protection Agency provides information on personal and household carbon calculators to help individuals determine how they can make a difference through lifestyle choices.

Nutritional food labelling is currently used to guide consumers' food choices but there may also be a place for sustainability labelling in the future. Research is needed into the effectiveness and feasibility of sustainability logos to help consumers choose healthy, sustainable foods. Such developments will demand the expertise of dietitians and nutritional scientists to guide legislation.

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