

British Nutrition Foundation

BRITISH NUTRITION FOUNDATION BRIEFING

Beyond protein and carbon – expert perspectives on the future of healthy, sustainable diets

Introduction



Our annual conference comes at a time when food systems around the world are facing unprecedented challenges. Climate change, biodiversity loss and pressure on natural resources are occurring alongside geopolitical instability, concerns about food security and food system resilience, and persistently high levels of diet-related ill health.

Against this backdrop, there is an urgent need to ensure that the foods we produce and consume support both human and planetary health. The challenge is not simply to feed a growing population, but to do so in ways that are healthy, sustainable, equitable and resilient.

There is growing international recognition that food systems must evolve to address interconnected challenges relating to human health, environmental sustainability, food security and social equity. Globally, progress towards ending hunger and malnutrition remains uneven, while many countries face a triple burden of undernutrition, micronutrient deficiencies and obesity.

Innovation in food production, agriculture, product development and nutrition science has the potential to support diets that are both healthier and more sustainable.

While these challenges are global in nature, the actions needed to address them must reflect national circumstances. In the UK, efforts to promote healthy and sustainable diets need to take account of our particular public health challenges, food production systems, patterns of food consumption, supply chains and the affordability of food for consumers.

In the UK, dietary recommendations and nutrition education have traditionally focused on supporting health and preventing disease. As the environmental impacts of food systems become increasingly important, there is growing interest in how sustainability considerations can be integrated alongside nutrition, while ensuring that dietary advice remains evidence-based, practical and nutritionally robust.

Adherence to our current UK healthy eating model, the Eatwell Guide, has been shown to benefit both population health outcomes and environmental footprint. However, fewer than 1% of the population meet all of the guide's recommendations, suggesting significant opportunities to improve dietary patterns in ways that benefit both human and planetary health.

While discussions about food systems often focus on the challenges we face, there are also significant opportunities to build healthier, more sustainable and more resilient food systems for the future. Innovation in food production, agriculture, product development and nutrition science has the potential to support diets that are both healthier and more sustainable. However, no single solution will be enough. Progress will require collaboration across the food system, bringing together researchers, policymakers, educators, farmers, food manufacturers, retailers and consumers.

Over recent years, discussions about sustainable diets have rightly drawn attention to the environmental impacts of food production, particularly greenhouse gas emissions and the role of different protein sources. These are important considerations, but they are only part of the picture. Sustainability is about more than carbon, and healthy diets are about more than protein.

Future food systems must be capable of delivering nutrient-dense diets that provide the energy, protein, vitamins, minerals and other nutrients needed to support health throughout life. Encouraging greater consumption of vegetables, fruits, wholegrains, legumes, nuts and seeds can play an important role in achieving both health and environmental objectives.

At the same time, consideration must be given to nutrients such as iron, calcium, iodine, zinc and vitamin B12, which can already be inadequate in vulnerable population groups and may be affected by shifts in dietary patterns. Advances in agriculture, food science and technology offer significant opportunities to improve the nutritional quality, sustainability and accessibility of foods, helping to support healthier diets while reducing environmental impacts.

At the British Nutrition Foundation, we believe that future food systems should be designed to support both human and planetary health. Nutritional quality and nutrient density should sit alongside environmental considerations when assessing foods and dietary patterns.

We also recognise that affordability, accessibility and cultural preferences are critical. Diets cannot be considered truly sustainable if they are beyond the reach of large sections of society. Delivering healthier and more sustainable diets will require innovation, collaboration and a whole-system approach that brings together research, policy, agriculture, industry and public health.

This briefing brings together perspectives from leading experts participating in the British Nutrition Foundation Annual Conference, Beyond Protein and Carbon: Delivering Nutrient-Dense Diets for People and Planet. Together, these perspectives highlight both the challenges and opportunities ahead and explore how evidence, innovation and collaboration can help shape healthier, more sustainable and more resilient food systems for future generations.

KEY POINTS

- Food systems should support both human and planetary health.
- Nutritional quality and nutrient density should be considered alongside environmental impacts when assessing foods and dietary patterns.
- Dietary advice should increasingly reflect both nutritional and sustainability considerations, while remaining evidence-based, practical and affordable.
- Healthy choices must be accessible, affordable and culturally appropriate for all.
- Food security and resilient food systems should remain central to discussions about the future of food.
- Innovation and collaboration across research, policy, agriculture, industry and public health will be essential to driving progress.





Expert perspectives

The following contributions reflect the views and experiences of individual contributors. While they align with the themes explored at the British Nutrition Foundation Annual Conference, the opinions expressed are those of the authors and do not necessarily reflect the views of the British Nutrition Foundation.

Creating the food systems of the future *Mike Barry*

Why context matters for healthy and sustainable diets *Dr Tara Garnett*

Why nutrient density matters *Professor Martin Warren*

Putting nutrition at the centre of sustainable diets *Professor Mairead Kiely*

Bringing nutrition into sustainability assessments *Dr Anne Nugent*

Helping consumers access healthier, more sustainable diets *Professor Louise Dye*

Delivering healthy and sustainable diets: a public health nutrition perspective *Dr Gillian Purdon*

Food security, affordability and inclusion *Dominic Watters*

The regenerative agriculture perspective *Tim Parton*

Creating the food systems of the future

Mike Barry, Planeatry Alliance



Mike is the co-founder of Planeatry Alliance, which is helping companies respond to the transformation of the food system by linking their work on human health and sustainability and integrating it deeply into their whole value chain, from resilient production to enabling food environments.

Mike was until 2019 Director of Sustainable Business at Marks & Spencer, spearheading its ground-breaking Plan A (because there is no Plan B for the one planet we have) sustainability programme.

He co-chaired the Consumer Goods Forum's sustainability work bringing the world's largest retailers and fast-moving consumer goods brands together to work on issues such as deforestation, plastics and forced labour. He is a Senior Associate at the Cambridge Institute for Sustainability Leadership; a Trustee at Blueprint for Better Business; and Chair of local charity Greener Henley.

Turning what we know into a commercially viable proposition at scale is the biggest challenge we face in delivering healthy and sustainable diets in the next decade. That means reshaping the food environment – what gets developed, ranged, priced, promoted and ultimately bought.

Today, at best, it's a 'wall of disjointed noise', at worst a swamp of mis- and dis-information. We need to align health and sustainability with everyday commercial decisions so better choices become easy, attractive, affordable – and commercially successful.

One prevalent assumption is that labelling is enough. Don't get me wrong, it's really important, literally foundational, but it's the start of the journey to re-shape consumers' day-to-day choices, not the end-point. In a store or online people are faced by thousands of products and potentially dozens of competing claims and labels. It's too much to digest and act upon. We need to shape the wider food environment around those choices too.

The rapidly changing relationship between food and health gives me real optimism for the future. GLP-1s are already disrupting what and how people eat, while better data and digital capability allow us to bring health and sustainability together in ways we couldn't before. We can increasingly move beyond individual products to understand whole portfolios and baskets – and use that insight to make better decisions about innovation, reformulation, range, price and promotion.

In terms of how to drive the change we need in the coming years, I'm a big fan of the Healthy Food Standard. It's ambitious – modelling suggests it could cut obesity rates by around 20% – with mandatory targets intended to prevent 'free-riding'. Crucially, it's outcome-focused, giving retailers freedom to innovate in how they improve the healthiness of their overall sales. Clear societal outcomes, a level playing field and commercial freedom are a powerful combination.

When it comes to the systemic changes we need to deliver both human and planetary health, a lot of it is about 'joining-up' today's siloes – across Government, but also in businesses where health and nutrition, sustainability and commercial teams are rarely coordinated. We talk about a food system but too often have a collection of siloes, with too little understanding of mutual dependencies, trade-offs and solutions. In a more volatile world, we need to join up health, sustainability and food security and resilience – increasingly, they are different outcomes of the same food system.

We talk about a food system but too often have a collection of siloes, with too little understanding of mutual dependencies, trade-offs and solutions.



Why context matters for healthy and sustainable diets

Dr Tara Garnett, Director of TABLE, University of Oxford

The single biggest challenge, when it comes to healthy and sustainable diets, is the context; the context being that most of the political, commercial, economic and cultural signals are pointing in the wrong direction.

The term 'healthy and sustainable diets' can mean many things but for me its definition has to encompass nutritional adequacy, environmental sustainability and a political and economic dimension best captured, perhaps, by the word 'fairness'. Healthy and sustainable diets are underpinned by systems of producing and distributing food that are themselves supportive of good human health and environmental sustainability because people work in good jobs with decent working conditions and in a political and commercial context that enables sustainable farming practices to be experimented with and applied, as well as opportunities for diverse sectors of the population to contribute to the work of producing, distributing and retailing food. Healthy and sustainable diets are affordable and accessible. They also need, of course, to be culturally acceptable but the word 'culture' is a bit tricky – cultural norms can and do change over time and all too often the phrase 'cultural acceptability' is used in order to block necessary change.

The term 'healthy and sustainable diets' can mean many things but for me its definition has to encompass nutritional adequacy, environmental sustainability and a political and economic dimension best captured, perhaps, by the word 'fairness'.

Returning to this question of context: at the moment, there is insufficient support for the farming community to transition to more sustainable methods of production or to shift towards the production of more sustainable kinds of food, in particular legumes, fruits and vegetables. The food manufacturing and retail environment is dominated by a handful of major players who exert downward pressures on prices paid to producers and who benefit from brand recognition and large marketing budgets, which in turn makes it hard for smaller enterprises, including those with different organisational structures, to enter or flourish in the marketplace.

And then there are issues of access and affordability for consumers. Study after study has shown that unhealthy food tends to be cheaper than healthier products on a per calorie basis. While this isn't the complete picture - low-cost fruits, vegetables, pulses and the like can be found in many supermarkets and price isn't the sole determinant of shopper behaviour - nevertheless, cost-factors in combination with a marketing and advertising environment overwhelmingly skewed towards junk or high environmental impact foods, make it hard for individuals to make the so-called 'right' decision. Add to this a media environment which is characterised by misinformation, quick fix solutionism and corrupted by corporate interests, and the idea of individual consumer choice completely dissolves.

There are of course positive and encouraging developments out there. These include longstanding work over the years by civil society and others to improve public procurement standards in schools, tighter regulations on marketing, a vastly wider range of choices for vegetarians and vegans than there were ten or twenty years ago and a growing acceptance that very high levels of animal product consumption, as found in the average British diet, do need to come down. There's much more still to do though.

Tara Garnett is a researcher at the University of Oxford, and the Director of TABLE. TABLE explores visions for the future of food, and provides a platform for interdisciplinary knowledge and dialogue.

Tara's work centres on the interactions among food, climate, health and broader sustainability issues; she has a particular interest in livestock as a sector where many of these converge. She is also interested in how knowledge is communicated to and interpreted by policy makers, civil society organisations and industry, and in the values that these different stakeholders bring to food problems and possible solutions.



Tara is keen to collaborate through TABLE with other organisations to undertake research, organise events and build and extend interdisciplinary, intersectoral knowledge in this field.

Why nutrient density matters

Professor Martin Warren, Group Leader,
Food Innovation and Health Programme,
Quadram Institute Bioscience

The biggest challenge in delivering healthy and sustainable diets over the next decade is engaging the public at scale. That means reaching beyond the "worried well" to the whole population, including those on lower incomes, for whom affordability comes first and cheaper, energy-dense foods seem the practical option.

More information alone will not do it. We need people to understand why nutrient-dense diets matter for their health and the planet. We also need a food environment where healthier, sustainable choices are affordable, accessible and appealing. Healthy and sustainable diets cannot become a privilege of the worried well.

Healthy and sustainable diets cannot become a privilege of the worried well.

We should challenge the assumption that someone who eats what they regard as a "balanced diet" must be nutritionally adequate. The term is used casually, yet many people fall short on basic recommendations such as fibre, fruit and vegetables. Inexpensive, energy-dense foods are everywhere, so people can eat enough calories, or too many, while their diet stays low in nutrient density. This is not an argument for universal supplements, but for focusing explicitly on nutrient density and adequacy.

Our growing ability to improve the nutrient density and bioavailability of food itself, particularly through biofortification, gives me optimism for the future. Approaches range from conventional breeding to modern genomic techniques, plus agronomic methods like targeted soil or foliar application of micronutrients. If we combine these, we need not rely solely on individuals making complex dietary choices, because everyday foods can become more nutritious in themselves. It also changes how we judge food production: not just by yield or carbon, but by usable nutrition delivered per hectare and per unit of environmental impact.



If policymakers, industry and research were to focus on one priority over the next five years it should be to make nutritional adequacy for the whole population an explicit measure of food-system success, delivered through affordable, sustainable foods. At present we judge agriculture by yield, food by calories or price, health by nutrients and sustainability by carbon, each separately. The question should be: how do we deliver the most usable nutrition, affordably, with the lowest reasonable environmental impact? That means better measures of nutrient density and finding the real gaps in the population. Production, innovation, fortification and reformulation should then work together to close them, for everyone, not just the health conscious.

Biofortification and fortification have complementary roles in improving nutrient density at population level. Biofortification improves nutritional quality at source, raising the amount and bioavailability of micronutrients in crops people already eat. Fortification adds nutrients during processing. With the right food vehicle, it reaches large parts of the population without anyone changing their diet, which matters for inequalities. Neither replaces a diverse, healthy diet. Both should target genuine nutritional gaps, take account of bioavailability and be monitored for effectiveness and excess intake. The aim is a food system that delivers nutritional adequacy by default.

Martin Warren is a Group Leader at the Quadram Institute Bioscience, where he has previously served as Head of the Food, Innovation and Health programme and as Chief Scientific Officer. His research focuses on metabolic engineering and synthetic biology, particularly in relation to vitamin B12. A major strand of his current work is improving the nutritional quality of plant-based foods through targeted food trials. He is passionate about translating fundamental scientific discoveries into practical, real-world solutions.



Putting nutrition at the centre of sustainable diets

Professor Mairead Kiely, Head of the School of Food and Nutritional Sciences, University College Cork

Mairead Kiely is Professor of Human Nutrition at University College Cork, Ireland. Her research focuses on micronutrient nutrition, health outcomes in pregnancy and childhood, and nutrition policy. She leads major international research initiatives, including co-coordinating the Horizon Europe Zero_HiddenHunger_EU project (2024-2027) and co-leading the Research Ireland-funded Nutrition and Health Programme of the Co-Centre for Sustainable Food Systems. She has authored more than 250 peer-reviewed publications and is a member of the UK Scientific Advisory Committee on Nutrition.



Food and nutrition security are among the most pressing global challenges that we face over the next decade. Climate change, with increased weather catastrophes, as well as global conflicts, are creating supply chain challenges and driving up the cost of healthy and sustainable diets. At the same time, income inequality is increasing in many countries, making it more difficult for people with low incomes to afford healthy diets.

One assumption that should be challenged is that diets need to be fully plant-based to be sustainable. But adherence to the healthy dietary patterns recommended by the UK government, which include animal-based foods, has been shown to reduce the environmental impact of the diet.

Animal source foods provide valuable nutrients and high-quality protein, which are particularly important for people with high nutritional requirements relative to their energy intake, including children and females of reproductive age. Diets that are largely plant-based and include regular appropriate amounts of animal source protein provide nutrients that are of public health concern, because intakes are low. These include essential amino acids and fatty acids, minerals such as iron, calcium and iodine and vitamins including B12, riboflavin, retinol and vitamin D.

The focus should be on supporting households to consume healthy diets and encouraging people with very high meat intakes to reduce these in line with recommendations, which would improve both health and environmental outcomes.

Foods that are high in saturated fats, sugar, and salt, such as biscuits, cakes and processed meats have a substantial carbon footprint and do not contribute the nutrients that are marginal in the typical diet. Alcohol has a substantial carbon footprint that is almost never discussed.

The acknowledgement that human nutrition and health are central to the conversation about the environmental impact of the food system is encouraging because everyone in society is entitled to have their nutritional needs met and the science to support this conversation is developing.

The priority for policymakers, industry and researchers in coming years should be placing health at the centre of agri-food policy to ensure that households are supported to consume healthy sustainable diets in the true sense of that definition. This is that everyone regardless of age, sex, ethnicity or life-stage, can meet their nutritional needs, which is currently not the case. In this as with most challenges, young people are most at risk.

The priority for policymakers, industry and researchers in coming years should be placing health at the centre of agri-food policy.

Micronutrient requirements of at-risk groups, due to physiology, namely children, adolescents and females of reproductive age are higher relative to their energy intakes. This needs to be accounted for in every single experiment that models the impact of diet on human health and/or environmental health. This has only just started to happen, but very gradually, as the early models were mainly based on the needs of adult men, which are different. There needs to be greater awareness that micronutrient malnutrition is widespread and preventable.

Key references:

1. Leonard UM, Davies KP, Lindberg L, Woodside JV, Nugent AP, O'Sullivan AM, Gibney ER, McCarthy SN, Arranz E, Kiely ME. Impact of sustainable diets on micronutrient intakes and status: outcomes of the MyPlanetDiet randomized controlled trial. Am J Clin Nutr. 2025 Nov;122(5):1275-1288. doi: 10.1016/j.ajcnut.2025.09.009.
2. Davies KP, Gibney ER, Leonard UM, Lindberg L, Woodside JV, Kiely ME, Nugent AP,Arranz E, Conway MC, McCarthy SN, O'Sullivan AM. Sustainable diets reduce diet-related greenhouse gas emissions and improve diet quality: results from the MyPlanetDiet randomized controlled trial. Am J Clin Nutr. 2025Oct;122(4):962-971. doi: 10.1016/j.ajcnut.2025.05.015.
3. Leonard UM, Leydon CL, Arranz E, Kiely ME. Impact of consuming an environmentally protective diet on micronutrients: a systematic literature review. Am J Clin Nutr. 2024 Apr;119(4):927-948. doi: 10.1016/j.ajcnut.2024.01.014.
4. Gallina AL, Otay S, de Frutos-Lucas J, Buso M, Moral Martinez P, Cashman KD, Kiely ME, Astley S. Hidden hunger in Europe: a review on determinants, fragmented policy responses, and implementation barriers. Front Nutr. 2025 Oct 20;12:1669008. doi: 10.3389/fnut.2025.1669008. eCollection 2025.
5. Zero Hidden_Hunger EU: https://www.zerohiddenhunger.eu/
6. Co-Centre for Sustainable Food Systems: https://foodcocentre.org/research/health-nutrition/



Bringing nutrition into sustainability assessments

Dr Anne Nugent, Reader in Nutrition,
Queen's University Belfast

One of the biggest challenges in delivering healthy and sustainable diets is ensuring consumers are part of the journey. Even if healthier and more sustainable options are available, progress will be limited if these foods and dietary patterns are not acceptable, affordable and widely adopted across different population groups.

Current discussions around sustainable diets can sometimes overlook important aspects of dietary quality. For example, while considerable attention is given to the environmental impacts of meat and dairy products, there is often less discussion about the contribution of foods and drinks high in fat, sugar and salt to the environmental footprint of diets. A more balanced conversation could help consumers better understand the full range of factors influencing both health and sustainability.

An important priority for the coming years will be developing approaches that allow nutritional quality and sustainability to be considered together. Through the UKRI-funded Sus-Health programme, researchers developed the Sus-Health Index as a way of examining food systems through a combined health and sustainability lens rather than considering these issues separately.

While a range of methods are being developed to integrate nutrition and environmental impacts, significant challenges remain. The quality of any assessment depends on the quality of the underlying data, including information on food composition, reformulation and fortification practices. Greater consideration of micronutrients within sustainability assessments could help ensure that future food systems support both environmental goals and nutritional adequacy.

Looking ahead, one reason for optimism is the growing willingness of stakeholders across research, industry, policy and civil society to engage with these complex challenges. Delivering meaningful change will require this spirit of collaboration to continue, bringing together expertise from across the food system.

Ultimately, successfully delivering healthy and sustainable diets will depend on ensuring equitable and secure access to food. Alongside improving the way we assess health and sustainability, policymakers, industry and researchers must work together to ensure that healthier and more sustainable food choices are accessible to everyone.

Looking ahead, one reason for optimism is the growing willingness of stakeholders across research, industry, policy and civil society to engage with these complex challenges.

Key references:

1. Grigoriadis, V., Nugent, A., & Brereton, P. (2021). Working towards a combined measure for describing environmental impact and nutritive value of foods: A review. Trends in Food Science & Technology, 112, 298-311.
2. Thomas E-L, Livingstone D, Nugent AP, Woodside JV, Lindberg L, Brereton P (2026) Food-based indices for the assessment of nutritive value and environmental impact of meals and diets: A systematic review. PLoS One 21(4): e0346150. https://doi.org/10.1371/journal.pone.0346150
3. Collins O, Higgins K, Karbo RT, et al. (2025) Consumer attitudes to combined sustainability and nutrition labelling of foods: an exploratory study. Int. Journal Consumer Studies49 (6) e70139 https://doi.org/10.1111/ijcs.70139
4. Grigoriadis, V., Thomas, E. L., Brereton, P., Woodside, J. V., Nugent, A. P., Smyth, B., Hutchinson, W. G., Vlajic, J., Areal Borrego, F., Collins, O., Sari, N., Fu, R., & Frewer, L. J. (2025). Developing the Sus-Health Index: a combined measure for describing environmental impact and nutritive value of foods and meals. Philosophical Transactions of the Royal Society B, 380(1935), Article 20240160. https://doi.org/10.1098/rstb.2024.0160

Dr Anne Nugent (RNutr) is a Reader in Nutrition at Queen's University Belfast and Visiting Associate Professor at University College Dublin. Her research examines how foods, nutrients and dietary patterns influence health, using population dietary data to support nutrition policy, food innovation and sustainable food systems. She has extensive expertise in public health nutrition, dietary assessment and food-system research.



Helping consumers access healthier, more sustainable diets

Professor Louise Dye, Professor of Nutrition and Behaviour, University of Sheffield

One of the biggest challenges in delivering healthy and sustainable diets over the next decade is supporting meaningful and lasting behaviour change. While awareness of sustainability and healthy eating has increased, many people still face barriers when it comes to putting this knowledge into practice. Healthy and sustainable choices need to be convenient, affordable and appealing if they are to become part of everyday diets.

Discussions about healthy and sustainable diets can sometimes focus on what people should stop eating, rather than how we can help them make positive changes. There is a significant opportunity to improve the nutritional quality and sustainability of foods through small, practical adjustments to meals people already enjoy. For example, research we have carried out in the refectory at the University of Leeds has shown that replacing a proportion of meat with lentils in dishes such as lasagne can substantially increase fibre content and improve sustainability, while having little effect on consumer acceptance. With the refectory serving 60kg of beef lasagne a week, this kind of change can have a meaningful impact.

There is a significant opportunity to improve the nutritional quality and sustainability of foods through small, practical adjustments to meals people already enjoy.

Currently, one of the developments that gives me most optimism is the growing focus on school food. Universal free school meals present a major opportunity to help children and young people develop positive relationships with food, increase dietary diversity and become more willing to try new foods. If delivered well, school food can play an important role in improving both health and sustainability outcomes for future generations.

The healthy soil, healthy food, healthy people (H3 www.h3.ac.uk) project was a major programme of research funded by UKRI's Transforming the UK Food System strategic priority, led by the University of Sheffield. H3 spanned soil, supply chains and nutrition, including reformulation and behaviour change for health. The findings highlighted the importance of making change easy for consumers. Rather than telling people they need to eat more fibre and encouraging them to actively seek out high-fibre foods, there is considerable potential for industry and anchor institutions, such as schools, to work with researchers and other stakeholders to reformulate foods and meals so that healthier, more sustainable choices become the default option. Supporting healthier and more sustainable diets will require collaboration across the food system, but small changes delivered at scale have the potential to make a meaningful difference.



Louise Dye is Professor of Nutrition and Behaviour in the School of Psychology, Co-Director of the Institute for Sustainable Food at the University of Sheffield, Co-Director of the SFI/DAERA/UKRI funded Co-Centre for Sustainable Food Systems and Co-Director of the National Alternative Protein Innovation Centre (NAPIC).

Louise has held MRC and Royal Society Postdoctoral Fellowships in the UK and Europe and a EU funded Marie Curie Professorial Fellowship in Jena, Germany. She is a Chartered Health Psychologist and member of the British Psychological Society. Professor Dye began her career in Human Psychopharmacology and has over 30 years' experience in the assessment of cognitive function following nutritional and pharmacological intervention. She has supervised 30 doctoral students, many in collaboration with industry or NHS partners.



Delivering healthy and sustainable diets: a public health nutrition perspective

Dr Gillian Purdon, Chief Nutritionist, Food Standards Scotland

Dr Gillian Purdon is the Chief Nutritionist at Food Standards Scotland (FSS), where she leads the Public Health Nutrition Division. In this role, she oversees a team of registered public health nutritionists dedicated to delivering a comprehensive national picture of dietary trends and translating scientific evidence into effective public health policy aimed at improving diet and nutrition across Scotland.



One of the biggest challenges over the next decade is achieving meaningful dietary change at a population level. This must be done whilst ensuring that healthier and more sustainable choices are affordable, accessible and acceptable for everyone. Whilst there is growing consensus about the broad characteristics of diets that support both human and planetary health, our diets are already some way from meeting dietary recommendations, and significant dietary inequalities persist. The challenge is to create a food environment in which healthier, more sustainable choices are also affordable, appealing and easy to make, wherever people live, work and learn.

One assumption that should be challenged is that a healthy, sustainable diet can be achieved by simply removing or substantially reducing particular foods. Dietary modelling studies consistently show that what replaces those foods matters. Reducing consumption of foods associated with higher environmental impacts, such as meat and dairy, can lower diet-related greenhouse gas emissions, but the nutritional consequences depend on the substitutions made.

Our work has demonstrated that appropriate replacement with foods such as wholegrains, vegetables, pulses, fish, eggs and suitably fortified plant-based alternatives can help maintain nutritional adequacy while reducing greenhouse gas emissions. Importantly, our modelling suggests that we can make meaningful progress without completely transforming how people eat. This highlights the importance of considering nutrition, sustainability and consumer acceptability together rather than in isolation.

Dietary modelling has taught us that there is no single 'perfect' sustainable diet, but rather a range of dietary patterns that can support nutritional adequacy, improve health and reduce environmental impact while remaining realistic.

What gives me optimism is our growing ability to bring together dietary surveillance, nutritional modelling, environmental data and behavioural research. These advances are helping us move beyond simplistic narratives towards a better understanding of which dietary changes can deliver genuine co-benefits, and where important trade-offs remain. Dietary modelling has taught us that there is no single 'perfect' sustainable diet, but rather a range of dietary patterns that can support nutritional adequacy, improve health and reduce environmental impact while remaining realistic.

If policymakers, industry and researchers were to focus on one priority over the next five years, it should be creating food environments that enable healthier, more sustainable diets in the real world. This includes improving the affordability and availability of nutritious foods, alongside reformulation, promotion and appropriate fortification. Ultimately, success will not be determined by identifying a theoretically perfect diet; rather, it will be determined by our ability to enable millions of people to make realistic dietary improvements that are good for their health, good for the planet and sustainable over the long term.

The home of food and feed safety and healthy eating | Food Standards Scotland

Food security, affordability and inclusion

Dominic Watters, Writer, Speaker and Food Insecurity Advocate



Dominic Watters is a PhD researcher at the University of Southampton, a keynote speaker and founder of Food is Care CIC. His work draws on Living Experience to examine food insecurity, inequality and resilience across council-estate communities. He developed the Four Visual Pillars framework and contributes to national debates on food, fuel and climate crisis.

A healthy and sustainable food system? That depends where you stand. The biggest challenge we face over the next decade is addressing the gap between national ambitions for healthy and sustainable diets and the material conditions in which people are expected to achieve them.

Healthy eating is still too often framed around individual choice, while overlooking what different food environments actually make possible.

Healthy eating is still too often framed around individual choice, while overlooking what different food environments actually make possible. My ongoing PhD research across council estates in Kent and Lincolnshire - counties associated with the “Garden of England” and the “Breadbasket of Britain” - finds communities living with food insecurity in the shadow of abundance. On my estate, for example, you can buy blueberry-flavoured vapes, but not a punnet of actual blueberries. This raises a fundamental question: who is the current food system designed to serve, and who does it continue to overlook?

My Four Visual Pillars framework - housing, food, energy and transport - was developed to challenge established ways of discussing food insecurity, including assumptions about who is best placed to describe the inequality we experience. The visual framework shows that dietary possibilities are shaped far beyond the supermarket shelf. They depend upon the food available locally, the cost and reliability of transport, whether households can afford the energy needed to refrigerate and cook food, and whether homes provide suitable space and facilities for storing and preparing it.

Unless this wider infrastructure is addressed, the transition towards healthier and more sustainable diets risks reproducing existing inequalities.

The priority for policymakers, industry and researchers over the next five years should be broadening whose knowledge informs food policy and research agendas - and, in doing so, reimagining whose knowledge is valued.

Policies and research will struggle to overcome insecurity, marginalisation and exclusion if the knowledge of those living through these conditions remains absent from how problems are defined and decisions are made. An agenda on Free School Meals cannot be fully informed without parents who have raised children while relying upon them. A right-to-food agenda cannot be credibly pursued without people who know what it means for that right to be denied. National and international ambitions for food security will remain incomplete if they are not shaped by people living within food-insecure environments.

This does not mean professional or academic expertise is unimportant. It means that expertise remains partial without Living Experience: knowledge that is ongoing, relational and embedded in continuing interactions with institutions, infrastructures and place (Watters and Yap, manuscript under review).

This requires involving people experiencing food insecurity meaningfully from the outset - before priorities are set, agendas decided and funding allocated - rather than inviting them afterwards to help “co-design” programmes whose priorities and parameters have already been determined.

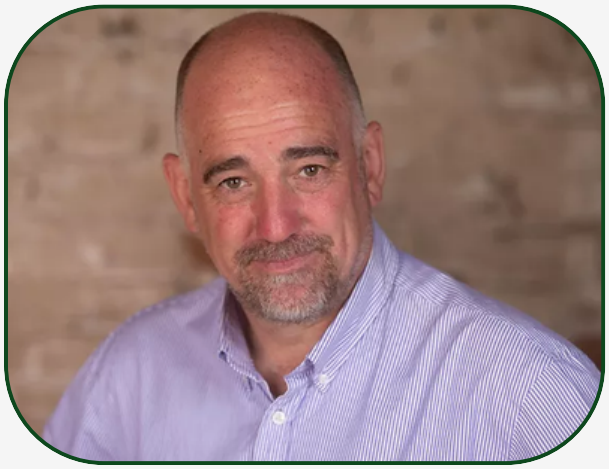


The regenerative agriculture perspective

Tim Parton, Agronomist, Regenerative Agriculture advisor

Tim Parton is a former farm manager from South Staffordshire and now works as a regenerative agronomist and adviser. Through his farming and advisory work, he has focused on reducing reliance on synthetic inputs by using biological and nutrition-based approaches to support soil and crop health.

Tim is known for his work to reduce the use of fungicides, insecticides, growth regulators and fertilisers, while maintaining productive crop yields. His approach emphasises plant health, nutrient density and environmental sustainability, with a focus on lowering the carbon footprint of food production.



He is also a director of the Green Farm Collective, which works with farmers on carbon markets, natural capital opportunities and certified regenerative produce.

Healthy soils are fundamental to the future of food production. Regenerative farming approaches aim to improve soil health by reducing disturbance, increasing organic matter and supporting the biological communities that exist within the soil. These biological processes play an important role in nutrient cycling, crop resilience and the long-term productivity of agricultural land.

There is growing interest in the relationship between soil health, farming practices and the nutritional quality of food. While the science continues to evolve, maintaining healthy soils may help support the production of nutrient-rich foods while delivering wider environmental benefits, including improved biodiversity, water management and carbon storage.

One of the biggest challenges is helping more farmers understand how regenerative practices can be implemented successfully in different farming systems. Change can be difficult, particularly when farmers are under economic pressure and need confidence that new approaches will remain productive and commercially viable. This highlights the importance of research, demonstration farms and knowledge exchange to share practical experience and build confidence across the sector.

By improving soil health, supporting farm resilience and working with natural biological processes, regenerative approaches have the potential to contribute to a food system that is productive, environmentally sustainable and capable of supporting future generations.

At the same time, there is a growing opportunity to connect conversations about agriculture, environmental sustainability and nutrition. Too often these discussions take place separately, despite their shared goal of creating food systems that support both people and planet.

From my perspective, regenerative agriculture has an important role to play in the future of food systems. By improving soil health, supporting farm resilience and working with natural biological processes, regenerative approaches have the potential to contribute to a food system that is productive, environmentally sustainable and capable of supporting future generations.





Looking ahead

The perspectives presented in this briefing reflect a wide range of expertise, spanning nutrition science, public health, agriculture, food policy, consumer behaviour and lived experience. While contributors approach the topic from different perspectives, several common themes emerge.

First, there is clear agreement that discussions about healthy and sustainable diets must move beyond a narrow focus on individual nutrients or environmental indicators. Climate change and environmental sustainability remain critically important, but dietary quality, nutritional adequacy, affordability and food security must also be considered when assessing the future of food systems.

Second, contributors highlight the importance of nutrient density. Future food systems must not only provide sufficient food, but also deliver the nutrients needed to support health throughout life. This is particularly important for population groups with higher nutritional requirements and for those already at risk of poor diet quality.

Third, many contributors emphasise that healthier and more sustainable diets must be achievable in practice. Food choices are influenced by affordability, availability, social and cultural factors, food environments and wider inequalities. Creating food systems that work for everyone requires particular attention to inclusion and accessibility.

The briefing also highlights opportunities for the future. Advances in agriculture, food science, product development, dietary modelling and nutrition research are creating new possibilities to improve both health and environmental outcomes. However, innovation alone will not be enough. Progress will require collaboration across research, policy, education, public health, industry and agriculture.

There are no simple solutions, and no single sector can deliver change on its own. The challenge of creating food systems that support both people and planet will require coordinated action across the food chain, informed by evidence and grounded in the realities of how food is produced, purchased and consumed.

The perspectives shared in this briefing demonstrate the importance of continued dialogue, partnership and innovation as we work towards healthier, more sustainable and more resilient diets for future generations.

British Nutrition Foundation

The British Nutrition Foundation is a charity that strives to prevent diet-related illness and promote health and wellbeing through evidence-based nutrition science. It provides a bridge between nutrition science, government, industry, healthcare, education and people, and is a conduit to a healthier, more sustainable food environment for all.

The British Nutrition Foundation's team is made up of highly qualified and experienced nutrition scientists and educators who work to disseminate evidence-based peer reviewed research findings which: support industry strategy and healthy, sustainable product innovation; inform government policy and regulations; and help people build their knowledge, skills and confidence in making positive food and lifestyle choices to help prevent illness and disease and promote health and wellbeing.

For more information visit: nutrition.org.uk