

Policy insight
April 2024

“ green
alliance...

Rethinking the food system for health, climate and nature



Introduction

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This is a clear opportunity for the next UK government to show global leadership.”

In December 2023, the UN Food and Agriculture Organisation (FAO) published the first instalment of a food system roadmap, aiming to eliminate global hunger and contribute to meeting the target to limit global temperature rise to 1.5°C. However, this was criticised by a group of academics in the journal *Nature Food* for lacking a clear methodology and failing to set clear goals underpinned by quantified analysis.¹ They encouraged the FAO to follow the lead of the International Energy Agency’s (IEA) 1.5°C roadmap for the energy sector which, they argued, “provided guidance for action that has influenced government policy around the world” due to its high quality quantitative analysis.

This is a clear opportunity for the next UK government to show global leadership and help the FAO achieve an impactful and well evidenced roadmap for the world food system. The UK has already done something similar on energy: from the late 1970s, the UK helped to develop the International Energy Agency’s (IEA’s) basic energy model, MARKAL, eventually extending it to show how the UK’s pioneering climate targets could be met. This then helped the IEA to advance its global climate-focused energy modelling.

Similarly, in the 2010s, the UK worked with the IEA to internationalise its 2050 pathways calculator, enabling countries to work out how to decarbonise their energy systems in ways that deftly matched quantitative analysis with democratic decisions.

The UK could do the same for food, drawing on its existing blueprint, in the form of the 2022 independent National Food Strategy (NFS) review,

commissioned by the government and led by the British entrepreneur Henry Dimbleby.

In our publication, *Behind the scenes of the National Food Strategy*, we interviewed the central team involved in creating the strategy, to draw out lessons from the process.² One of the conclusions that emerged was the review's successful use of data and evidence for diagnosing the problems and building a convincing case for the changes needed.

The NFS's approach was participative: it relied heavily on engaging UK citizens. But it rooted its conversations in robust evidence-based analysis to help the public and politicians understand the UK's food system and the problems it faces.

While focused on the UK, the NFS's approach and many of its messages have more universal relevance and could be used as a blueprint for analysing food systems around the world, as the FAO is trying to do.

“Analytically tight, empirically thorough, the Dimbleby report is not only a masterly study of UK's food problem, but it also constructs a framework wide enough to be deployed for studying the food problems societies face everywhere.”

Professor Sir Partha Dasgupta

Using the review as an opportunity for global influence, the next government should:

1. Act on the analysis underpinning the NFS review's recommendations in areas where the 2022 *Government food strategy* did not go far enough
2. Use the review and its evidence base as a starting point for a globally relevant analysis to inform the FAO 1.5°C food system pathway that commands widespread confidence and leads to policy change in countries across the world.

Here, we highlight three areas where the NFS analysis identified a strong need for action. In each, the current *Government food strategy* either does not include a recommendation, or actions promised have not been completed.

**“
The National Food
Strategy's approach
and messages have
universal relevance.”**

1. Reduce emissions with better choices for lower meat diets

Agriculture accounts for

11%

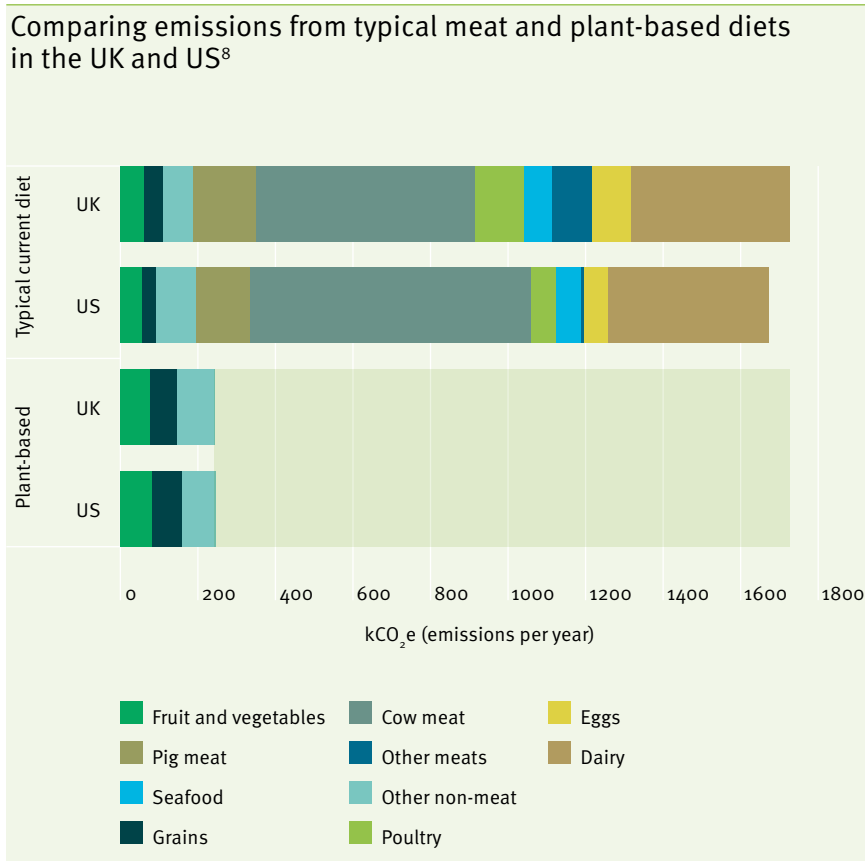
of greenhouse gas emissions
in the UK

Agriculture accounts for 11 per cent of greenhouse gas emissions in the UK.³ Unlike other sectors, agricultural emissions have not reduced since the Climate Change Act was passed in 2008.⁴ The majority of these emissions (65 per cent) come directly from livestock in the form of methane from enteric fermentation and manure (60 per cent) and nitrous oxide from manure (five per cent).⁵ A further 24 per cent is nitrous oxide from fertiliser use and manure applied to land, much of which is also coming from the grassland and crops used to feed livestock.

The UK's Department for Environment, Food and Rural Affairs (Defra) and the food sector are pursuing options to cut emissions from livestock, such as improving animal health and welfare to increase productivity, and using methane suppressing food additives. Methane suppressants are a new development and Green Alliance analysis suggests 30 per cent uptake in the dairy sector could reduce agricultural methane emissions by five per cent by 2030.⁶ Productivity gains have reduced the emissions intensity of beef, dairy and pigs since 1990, but these reductions have levelled off in recent years.⁷ The emissions intensity of sheep farming has changed little since 1990.

While some savings can be made through technology and efficiency improvements, the NFS's analysis identified that what people eat has a much bigger impact on emissions than how food is produced. It compared the food systems of the UK and US. These two countries have quite different production systems, with the US tending towards high efficiency farming models, concentrated geographically and carried out on a large scale. If methods of production were very significant in emissions terms then UK and US diets would be expected to show quite different emissions. But this is not the case. Emissions associated with typical meat diets are slightly lower in the US than the UK (by about three per cent), but the difference is insignificant in comparison to the difference between a meat diet and a plant-based diet in both countries (around 85 per cent less).

“The NFS proposed ways to make it easier for people to choose a lower meat diet.”



This analysis does not suggest everyone should eat a wholly plant-based diet, but it does show that moves to reduce the amount of meat eaten will be important to significantly reduce agriculture’s greenhouse gas emissions.

As the NFS highlights, government action that appears to tell people what they should and should not eat is unlikely to be effective. Instead, the NFS proposed ways to make it easier for people to choose a lower meat diet, including financial support for those on low incomes to afford healthier, more plant-based diets and for developing alternative protein sources. It recommended £125 million of investment to support the UK alternative protein industry, with £50 million for facilities in a single commercial cluster and £75 million for grants to start ups.

In a recent report, Green Alliance has recommended the UK should invest at least £250 million in creating regional clusters for the alternative proteins industry.⁹ As well as helping people to reduce their environmental impact, our analysis suggests the UK could build an industry worth £6.8 billion, with 25,000 new high quality jobs by 2035.

Thinking about global impact, the UK’s ability to make independent food approvals via its Food Standards Agency, while remaining aligned with the EU’s food safety rules, is a strong opportunity. If the UK develops and approves alternative proteins, it will do so in the context of some of the highest food standards in the world, helping to prove the sector’s credibility. Similarly, just as the UK has demonstrated that it can grow its economy while decarbonising, a successful policy supporting lower animal protein, healthier diets could be globally influential.

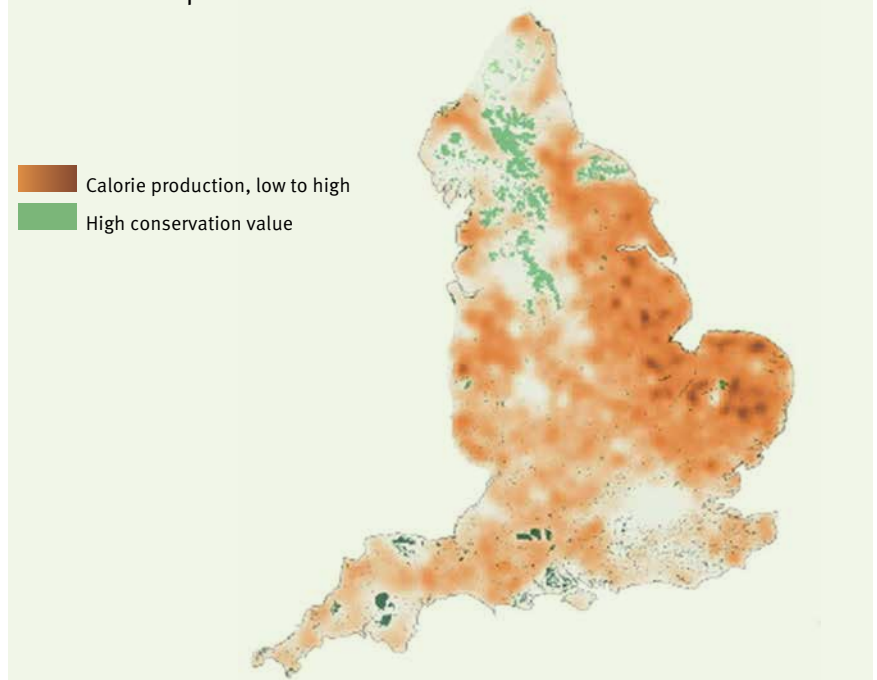
2. Diversify land use and adapt farming

“Even small amount of dietary change can free up a significant area of land for more carbon storage and natural habitats.”

Grazing and growing crops for livestock uses around 85 per cent of farmland in the UK, mostly for beef and sheep production. The UK is an outlier in the amount of its land area dedicated to livestock, but having a disproportionately large area for livestock is a pattern reflected in other countries. Taking into account imports, the UK's meat and dairy consumption alone uses an area of farmland equivalent to the whole land area of the country.¹⁰ This is despite it only providing 32 per cent of the total calories the country consumes and 48 per cent of the protein.¹¹

Eating less meat and dairy is a way to free up land which will be needed to expand tree planting and peat restoration to tackle climate change and reverse nature decline. It also takes pressure off land to enable more agroecological, nature friendly farming, while maintaining current levels of food self sufficiency. The NFS analysis showed that even small amount of dietary change can free up a significant area of land for more carbon storage and natural habitats, because, in England, the least productive nine per cent of farmland (white on the map below) is used for just one per cent of the food the country produces.¹² This less productive land also significantly overlaps with areas of high nature and carbon storage value (green on the map below).

Areas of low food production and high conservation value tend to overlap¹³



**“
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The NFS advocates the ‘three compartment’ model of land use, where the least productive land is prioritised for climate and nature outcomes, the most productive land is prioritised for food production, but with radically less pollution from that land, and the medium productive land is used for agroecological farming that delivers high nature and carbon sequestration benefits alongside food production. Our analysis has found that this approach provides positive nature and climate outcomes at reduced cost because it limits the amount of expensive engineered greenhouse gas removals required, like bioenergy with carbon capture and storage (BECCS), to reach net zero carbon emissions.¹⁴

As well as protecting food security, alongside meeting climate and nature targets, the food system should enable farmers to run thriving businesses. Our research shows that, if designed correctly, new ‘payments for environmental public goods’ through the government’s Environmental Land Management (ELM) schemes could increase the incomes of farmers on land that is hard to farm, if they choose to take advantage of them.

Our analysis looked at the potential value of carbon in two interventions, tree planting and peat restoration, on different types of farm, comparing it to farm incomes in 2019 (before EU subsidies began to be phased out). If the carbon stored was valued at the UK emissions trading scheme price at the time we did the analysis (£75/tCO₂), small upland farms could increase their income by turning over half their land to tree planting and continuing existing farming practices on the rest.¹⁵ If other paid for environmental benefits are factored in, such as increased biodiversity, water quality and flood risk reduction, less of the farm area would be needed for environmental delivery, or these other activities could provide opportunities for even greater profitability, depending on the approach taken by the farmer.

To create the conditions in which a ‘three compartment’ pattern of land use would make commercial sense for farmers, the NFS recommended that the government should draw up a Land Use Framework, providing data and information to guide public payments, regulation and private sector investment. It also recommended ringfencing a third of the ELM budget to provide a fair return for farmers for meeting targets to plant 400,000 hectares of broadleaf woodland, restore 325,000 hectares of upland peat, and 200,000 hectares of heath and species rich grassland.¹⁶ Subsequent Green Alliance analysis recommended that three quarters of the rural payments budget should be spent helping farmers to deliver these public goods via the Countryside Stewardship and Landscape Recovery components of ELM.¹⁷

In terms of global impact, because of the carbon budgets it has set, the UK is moving earlier to decarbonise its land uses than most other wealthy countries. Demonstrating the food production, nature restoration and economic rationales for the three compartment style of land use, supported by public payments for public goods, could provide a playbook for other countries grappling with how to decarbonise their land, while supporting farmers and securing food production.

3. Cut public health costs by changing food industry incentives

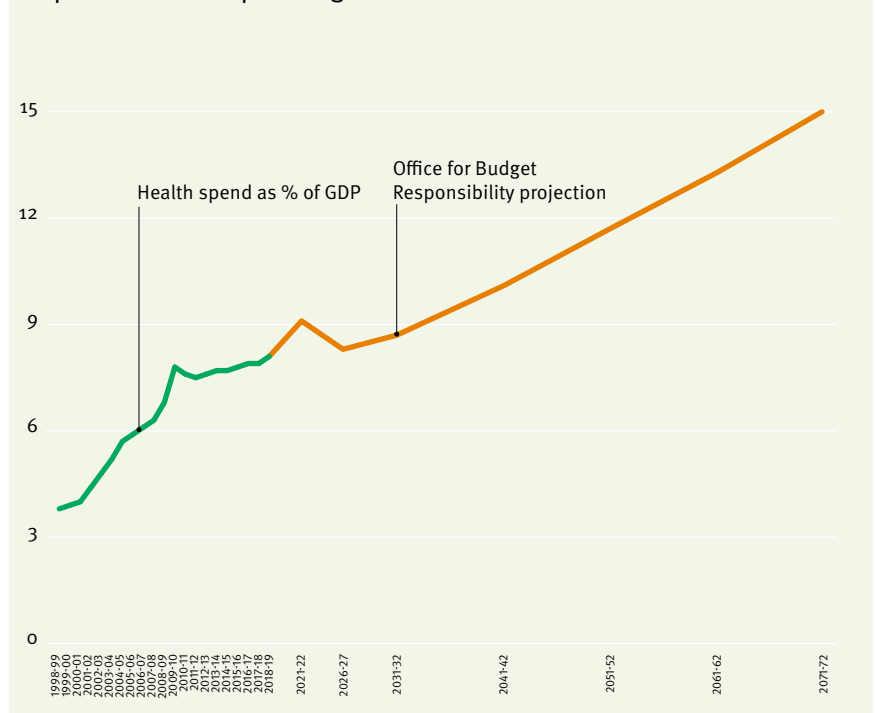
Type 2 diabetes is expected to increase by

15%

in the next ten years

The current trajectory of public health spending in the UK, without intervention, is for the state to spend an ever escalating share of GDP on treating diet related diseases.¹⁸ The UK spends about £18 billion a year on the direct medical costs of conditions related to being overweight or obese, not including other diet related conditions, such as high blood pressure from high salt consumption.¹⁹ The full annual cost of obesity to the UK in 2021 was estimated to be a much higher £58 billion.²⁰ Incidence of diet related diseases are rising fast, with type 2 diabetes expected to increase by 15 per cent in the next ten years, coronary heart disease by 33 per cent in the next 20 years and colorectal cancer by 37 per cent in the next 20 years.²¹

UK public health spending as a share of GDP²²



Avoiding these spiralling costs requires government intervention. The NFS analysis identified that the UK's food system is locked into a 'junk food cycle' which makes it hard for individuals to access a healthy diet.

The cycle is characterised by food companies investing in making unhealthy, cheap and convenient foods because they are more profitable.²³ Calorie dense foods are more appealing due to evolutionary reasons, which means people enjoy them more and

seek them out.²⁴ Less healthy foods also tend to be cheaper than healthier foods per calorie.²⁵ As profits rise and they sell more of them, food companies have an incentive to spend more on marketing unhealthier foods, which means consumers are encouraged to keep buying them.

Against these forces, simply educating people about which foods are healthier can only go so far. Generally, people understand which foods are healthy, but that does not necessarily change their eating habits. And there is an equity issue, as healthier options cost more, buying more of them would take up a high proportion of the disposable income of the lowest earning groups.²⁶

For most people in the UK, eating a healthier diet would involve eating more fruit and vegetables, more fibre and less highly processed food and red meat.²⁷ Following healthy eating guidelines would mean eating 27 per cent less red and processed meat on average.²⁸ Cutting meat and dairy consumption by approximately 40 per cent would reduce saturated fat consumption to a healthier balance.²⁹ As reducing meat and dairy production frees up more land for nature and climate mitigation, there is a significant overlap in the food system change needed to improve both environmental and public health outcomes.

To shift dietary choices, government interventions need to address the imbalance between the affordability, availability and advertising of highly processed foods compared with healthier options.

The UK's Soft Drinks Industry Levy achieved a 27 per cent reduction in the sugar content of soft drinks over three years.³⁰ The NFS recommended a wider Sugar and Salt Reformulation Tax on the ingredients used in processed foods, restaurant dishes and catering.³¹ It proposed that some of the proceeds of this tax should be used to increase the access those in low income groups have to fresh fruit and vegetables.

The global relevance for this recommendation lies partly in managing the costs of ill health, which is substantially caused by diet related disease, as well as meeting society's expectation that years of healthy life will continue to rise. Four out of the top five causes of non-communicable disease and early death in the UK are diet related. This pattern is broadly shared across high socio-demographic index countries.

The UK's Soft Drinks Industry Levy achieved a

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Conclusions for decision makers

“Politicians are wary of telling people what to eat. But, despite their reticence, the issue is not going away.”

NFS analyses of the three areas we have highlighted here point to a need to encourage diet change to meet both public health and environmental goals.

This is a difficult topic for governments and political parties to address because people feel strongly about food and farming cultures. Politicians are wary of telling people what to eat. But, despite their reticence, the issue is not going away.

Moreover, the NFS review showed that a government can intervene positively to improve diets and environmental outcomes by increasing the availability and attractiveness of healthier, more sustainable foods. For instance, it can encourage the consumption of alternative protein foods, instead of meat and dairy products, support the least well off to afford healthier diets and change incentives in food manufacturing to encourage the reformulation of products, especially of ultra-processed foods.

New farm payments for environmental public goods, like carbon sequestration and creating habitats for wildlife, can protect or increase farm incomes, even with lower levels of meat and dairy production.

This should give confidence to the next UK government, the FAO and governments around the world that there are routes to address food system challenges, as highlighted by the NFS’s expert analysis.

The recommendations made by the NFS are specific to the UK, and may not, of course, apply directly to the context in other countries. However, much of its underlying analysis was based on global data, with direct relevance to the global food system. For the next UK government, the NFS has provided a readymade analysis and set of proposals which it could use early in its tenure to make positive changes to the health and environmental outcomes of the country’s food system.

In doing so, it would demonstrate global leadership in dealing with a problem faced by countries across the world. In the same way that the UK worked with the IEA to internationalise its 2050 pathways calculator, to decarbonise the world’s energy systems, the next UK government should use the blueprint, provided by the NFS review, to help the FAO develop global food systems pathways rooted in quantitative analysis and democratic decision making.

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Green Alliance

Green Alliance is an independent think tank and charity focused on ambitious leadership for the environment. Since 1979, we have been working with the most influential leaders in business, NGOs and politics to accelerate political action and create transformative policy for a green and prosperous UK.

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