

# Raising the steaks: developing a market for alternative protein in the UK

BRIEFING PAPER

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The emergence of an “alternative protein” sector has the potential to reduce the ecological impact associated with the UK’s reliance on animal protein. This briefing paper considers whether the UK Government should consider supporting the development of alternative meat products as part of fulfilling its Net Zero ambitions.

## KEY POINTS

- Despite the growing popularity of diets and products designed to reduce how much meat we eat, the UK today consumes only 6% less meat per capita in the home than in 1974.
- If the UK is to reach its Net Zero commitments, meat consumption will need to fall more rapidly over the coming decades. However, there has been a conspicuous lack of policy designed to achieve this. Whereas media attention has focused on the radical and politically sensitive option of a ‘meat tax’, the rapid expansion of the alternative protein market offers a way to reduce meat consumption through consumer choice.
- The success of alternative proteins will depend upon businesses’ ability to deliver affordable, desirable, and accessible meat analogues with much lower environmental costs than meat from traditional farm animals.
- Governments around the world are recognising the need to incubate the alternative protein sector, given the high-risk, multi-disciplinary nature of R&D and the potential benefits to the public finances, economy, human health and the environment.
- The UK Government has already committed public funds and strategic support to a range of markets associated with the Net Zero transition, such as offshore wind and electric vehicles. Policymakers should consider applying the same logic to the alternative protein sector as a means of taking a non-intrusive first step towards reducing meat consumption in the UK.

## INTRODUCTION

The global food system faces a wicked problem. We need to produce 50% more food to sustain a growing population over the next four decades, whilst also substantially reducing the emissions associated with food production and consumption.<sup>1</sup> According to the Independent Panel on Climate Change, between 21-37% of total greenhouse gas emissions (GHG) are attributable to the world's food supply, and without changes throughout the value chain, food systems emissions are likely to increase by 30-40% by 2050.<sup>2</sup>

Animal protein is at the heart of the problem. It forms a central component of most people's diets, particularly in rich countries, but is a major obstacle to our efforts to tackle climate change. The UN's official figure is that animal agriculture accounts for 14.5% of total GHG emissions.<sup>1</sup> Yet animal protein only accounts for 18% and 37% of our calorie and protein consumption respectively.<sup>3</sup> And beyond emissions, the global demand for animal protein has spawned numerous other concerns, including over animal welfare, human health, workers' rights, and biothreats like zoonotic disease and antibiotic resistance.

There has been a conspicuous lack of explanation from the UK Government of how Net Zero commitments can be squared with the absence of policies aimed at reducing meat consumption. The Committee on Climate Change has recently called for the amount of meat we eat in the UK to be brought down by more than a third by 2050.<sup>4</sup> To date, any hope of achieving that figure has been pinned on relatively vague concepts such as "market forces" and "behavioural changes", which do not appear to be moving fast enough.

This briefing explores one option policymakers could consider to speed up the transition: supporting the development of an alternative protein sector in the UK. A thriving alternative protein sector is likely to be a condition for winning consent for any future interventions designed to reduce meat consumption. Without adequate alternative product offerings, the contested issue of a future 'meat tax' could be met with resentment. There are also a range of additional dividends on offer, including the employment opportunities and improvements in animal welfare.

## MEATY HABITS: TRENDS IN UK MEAT CONSUMPTION AND THE POLITICS OF DIET

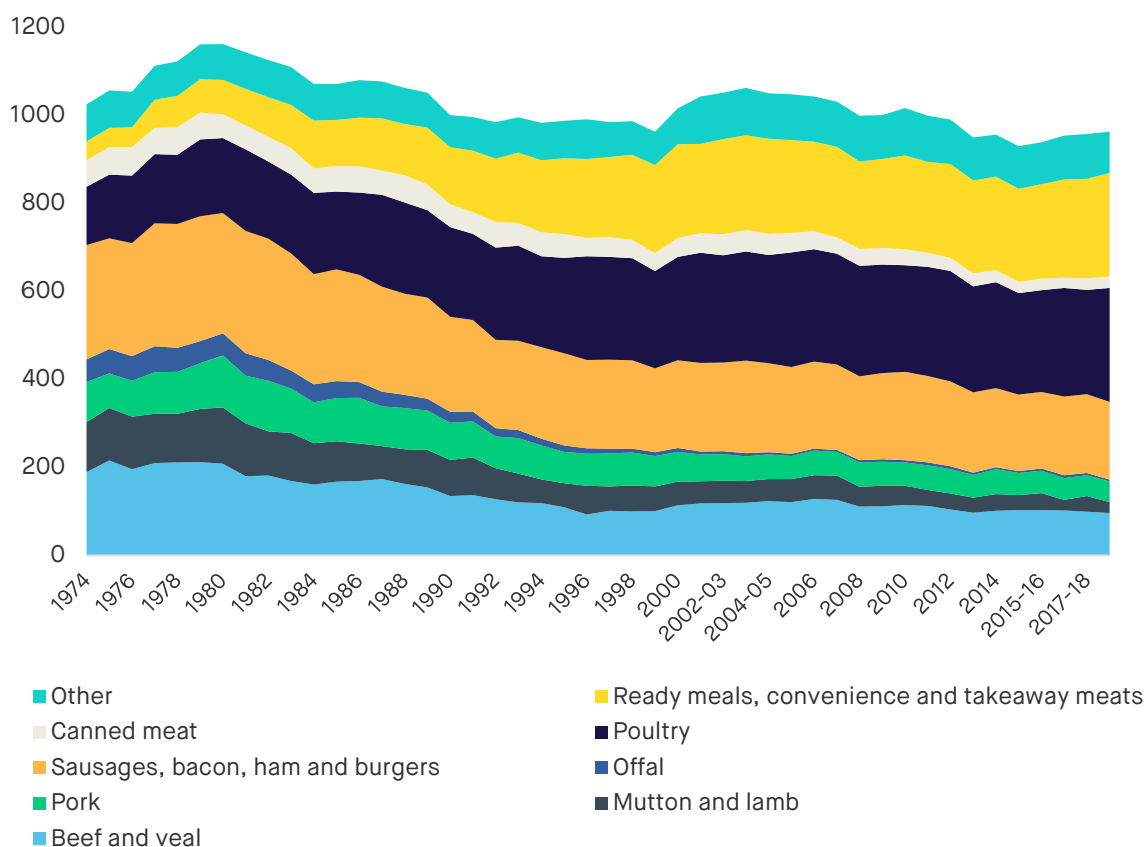
In 2018/19, the average person in the UK consumed 961g of meat per week in the home, around the equivalent of six chicken breasts.<sup>5</sup> This represents a 6% reduction compared to 1974 (the earliest data available in the Family Food survey). Over the last half a century, tastes and product choices have changed considerably, as shown in Figure 1. Between 1974-2018/19, pork and beef and veal consumption fell by 49% and

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<sup>1</sup> This estimate has come under some scrutiny. The UN revised it down from 18% but a recent study has questioned the methodology for doing so, and suggested the new minimum figure should be 16.5%. See <https://www.mdpi.com/2071-1050/13/11/6276/pdf>

48% respectively, whilst poultry consumption – driven by the intensification of chicken farming – has increased by 95%.

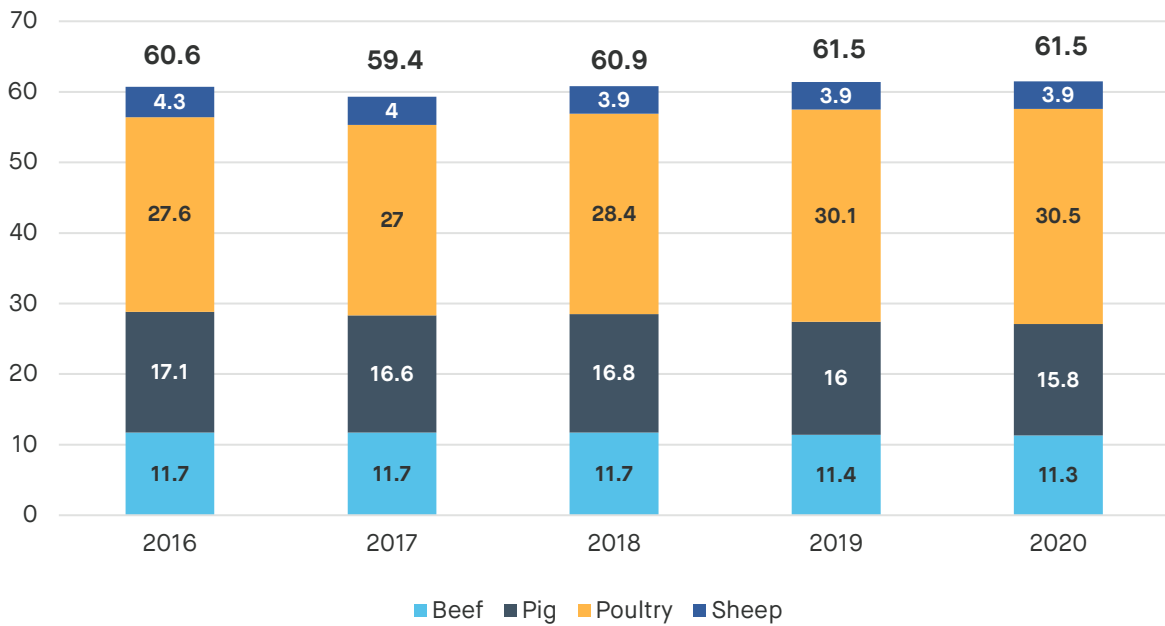
**Figure 1: Average weekly UK household purchases of meat products (g) since 1974, per person**



Source: SMF analysis, Family Food Survey

It is possible to read from this data a positive story for the environment, showing how behavioural shifts and consumer market developments have steadily reduced meat consumption, and will continue to do so. Vegan and vegetarian diets have grown in popularity in recent decades (although the percentage reporting to maintain these diets remains low at 4%)<sup>6</sup> and the range of products supporting them continues to expand. ‘Flexitarian’ habits have also become more common, with 13% of UK adults reporting that they are mainly vegetarian and only eat meat occasionally.<sup>7</sup> This dietary trend could be particularly significant, since it appeals to a broader consumer base by accepting that for many, eating meat is enjoyable, cost-effective and convenient, whilst also recognising the positive benefits of reducing reliance on animal protein.

However, there are concerning signs too. Figure 1 reminds us that whilst consumption habits have shifted since the 1970s, meat remains a central part of most UK diets. Meat consumption peaked in the home in 1980 and reached its lowest point in 2015, but increased by 3.5% between 2015-2018/19. OECD-FAO data (Figure 2) presents a broadly similar picture, with overall consumption increasing by 1.5% between 2016-2020.

**Figure 2: UK annual meat consumption, kilograms per capita 2016-2020**

Source: OECD-FAO agricultural outlook

Whether this constitutes a reversal of long-term trends remains uncertain. Nevertheless, we should consider even a stagnation worrying. According to the Committee on Climate Change (CCC), if the UK is to hit its Net Zero targets, the amount of meat we eat needs to fall by 20% by 2030, and 35% by 2050.<sup>8</sup> The Government's independent National Food Strategy (NFS) roughly mirrors this, calling for a 30% reduction in meat consumption.<sup>9</sup> In practice, achieving the CCC's 2030 target, would mean consumption would need to fall at around four times the speed that it did between 1980-2015.

All of this should be viewed in the global context too. As incomes and populations have grown in poorer countries, they have tended to eat more meat, particularly amongst the middle classes.<sup>10</sup> Global meat production rose year-on-year from 1961 to 2018, from 71 million tonnes to 341 million tonnes.<sup>11</sup> And even as the ecological impact of animal agriculture has become better understood, consumption has continued to rise - as much as an estimated 500% between 1992-2016, according to one study.<sup>12</sup>

### The politics of diet

Rightly or wrongly, politicians tend to be wary of confronting the problems associated with how much meat people eat. Recent debates in the UK around calorie labelling on food menus, banning junk food adverts before 9pm and a new Salt and Sugar Reformulation Tax suggest that it is often hard for politicians to engage constructively in the politics of diet. The view goes that since food choices are an integral part of our identity, intervention to influence those choices represents an overreach of government.

A recent comment from the Environment Secretary is instructive:

*"The Climate Change Committee say we should be eating higher-value meat, meat that costs more money, and probably a little bit less of it, but it should be produced to the very highest standards in a pasture-based system...I agree with that overall but I don't agree about getting there by lecturing people about what they should eat."*

*George Eustice, speaking at a regenerative agriculture event<sup>13</sup>*

When it comes to options for reducing meat consumption specifically, the conversation can become particularly polarising, as examples from 2021 indicate:

- In July, Spain's consumer affairs minister Alberto Garzón faced a backlash from many within his own government, including the Prime Minister, after promoting a campaign to encourage Spaniards to cut back on their meat intake.<sup>14</sup>
- In July, Australian Senator Matt Canavan criticised a proposal for a carbon tax on meat made to a UN food summit, describing it as "the literal barbeque stopper of Australian politics."<sup>15</sup>
- In Spring, following unsubstantiated claims made in the *Mail Online*, furore erupted amongst Republicans in Congress after it was suggested that President Biden's climate plan would restrict Americans to only four pounds (1.8kg) of red meat a year.<sup>16</sup>
- In February, France's agriculture minister, Julien Denormandie, accused Lyon's mayor of "putting ideology on our children's plates" for removing meat from school lunches.<sup>17</sup> Denormandie had previously said "meat comes from life, not laboratories".<sup>18</sup>

Much of the backlash has centred on the main tool governments are perceived to have at their disposal in this space: a tax on meat consumption. Such a levy would be designed to raise the price of meat to its 'optimal' level by accounting for negative externalities such as greenhouse emissions, biodiversity loss and public health impact.<sup>19</sup> The idea was recently ruled out by the Prime Minister<sup>20</sup> and described by Michael Gove as "crude".<sup>21</sup> In Germany, concerns about potential lost income for farmers led to proposed changes to VAT on meat being dropped.<sup>22</sup>

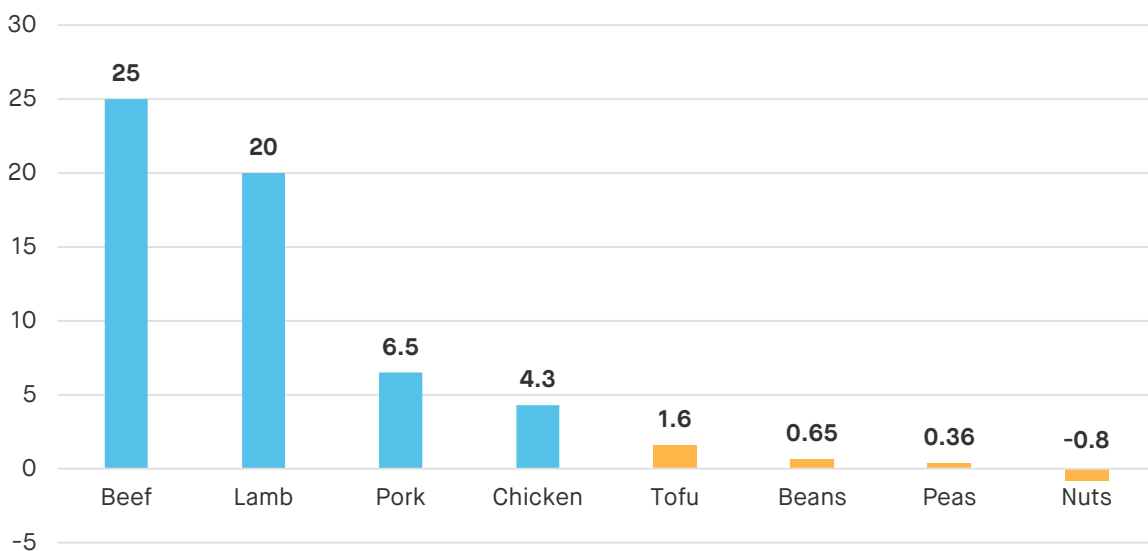
These early skirmishes suggest that winning consent for meat taxes will not be straightforward and could become an unconstructive cultural talking point. Yet it is difficult to see how fiscal interventions won't eventually be part of the equation which leads to a more sustainable food system. Therefore, as the SMF has argued elsewhere with regards to transitioning to low-carbon home heating<sup>23</sup> and electric vehicles<sup>24</sup> it will be incumbent on policymakers to support the creation of a sustainable market of alternatives. Politicians will also need to clearly spell out the costs associated – like eating less meat and at a higher price. A failure to do so, and to provide support for those consumer groups who will find the transition more challenging, risks a possible backlash against the broader Net Zero agenda and limits the UK's chances of achieving its carbon targets.

Whilst the case for meat taxation builds, the CCC has called for “low-cost, low-regret” action to reduce our reliance on animal protein over the next decade.<sup>25</sup> Changing the ‘choice architecture’ for consumers is one area the government may wish to consider. A tax on meat may become more palatable if there is a sufficient range of affordable, desirable and accessible meat analogues for consumers to choose from. The rest of this paper therefore considers one particular proposal – government support for the alternative protein sector – designed to bring this market to fruition.

## THE ALTERNATIVE PROTEIN REVOLUTION

Consuming protein is essential for human life and many people across the world rely on animal protein as part of their diet. But not all protein is created equal. A study by Poore and Numeck (2018) evaluating data from 38,700 farms in 119 countries shows that the environmental impact of different proteins varies considerably.<sup>26</sup> And whilst it is important to recognise that certain animal feeding and rearing practices are less environmentally intensive, GHG emissions related to meat production are on average far higher than plant protein.

**Figure 3: Median GHG emissions (kgCO<sub>2</sub>eq) from producing 100g of protein**



Source: Our World In Data analysis of Poore and Numeck (2018)<sup>27</sup>

### What are “alternative proteins”?

There can be little doubt that a more sustainable food system, both in the UK and globally, is dependent on a greater proportion of our protein intake coming from non-animal sources. Substituting meat for “alternative proteins” has been proposed as part of the solution. In the broadest sense, this includes any protein – unprocessed and processed – derived from non-meat-based sources, as well as insects and algae, which have been earmarked as part of the equation for reducing reliance on protein from traditional farm animals. However, in the modern lexicon, and for the purposes of this paper, “alternative proteins” refer to three types of meat analogues:

- **Plant-based** – products derived from plant protein, such as soy or pea, which include additional ingredients such as oils, carbohydrates (such as potato starches and flours), flavourings (such as beetroot extract) and stabilisers and emulsifiers.<sup>28</sup>
- **Fermented** – plant-based products involving a specific fermentation process, such as the use of mushroom mycelium or the fermentation of soy leghaemoglobin.<sup>29 30</sup>
- **Cultured** – products derived from “lab grown” animal cells, cultivated to replicate animal meat.<sup>31</sup>

## The market for alternative proteins

Each of these product categories is at a very different stage of development. Plant-based products have been produced for decades but the addition of a fermentation process has led to a significant step forward in product quality. The plant-based market is characterised by the presence of large, disruptive companies such as Beyond Meat, which is listed on the US stock market.<sup>32</sup> In the UK, plant-based products have become a staple on supermarket shelves. A 2021 survey of retailers’ ready-meal offerings found plant-based to be the fastest growing category, with ALDI increasing its range by 175% and Tesco by 103% since 2018; the latter aims to increase its alternative protein product offering by 300% by 2025.<sup>33</sup>

By comparison, the cultivated meat market is incipient. The first lab-grown meat – a trio of sample chicken dishes – was sold in a Singapore restaurant in December 2020, costing US\$23.<sup>34</sup> Production costs are currently between 100 to 10,000 times higher than the benchmark for comparable animal meat products, although it has been suggested prices could reach a competitive point by 2030.<sup>35</sup> Firms are typically start-ups, some receiving investment from government and major meat companies, and many focus on cultivating ‘whole-cuts’, such as an Israeli firm using 3D bioprinting to cultivate a steak<sup>36</sup> and a British company which has created the first lab-grown bacon.<sup>37</sup>

Globally, the alternative protein sector is expected to be worth \$23 billion by 2024<sup>38</sup> and prices of some plant-based products are falling at pace.<sup>39</sup> UK consumer spend on meat substitutes increased by 40% between 2014-2019, reaching £816 million in 2019.<sup>40</sup> Based on this evidence, it is challenging to suggest that the alternative protein market is failing, and seemingly difficult to justify government intervention. However, we should recognise that alternative protein products make up only a relatively small share of the market – the equivalent of 4.25% of all meat purchases (£19.2 billion) in the same year.<sup>41</sup> Compare this with another “green good” market – electric vehicles – and we see that one in ten new vehicle registrations in 2020 were for electric models.<sup>42</sup>

To reach the timetable for meat reduction proposed by the CCC, the pace of market development needs to be much faster than it currently is, given the base we are starting from. The British-based firm Plant & Bean cite figures, for example, suggesting 65% of consumers don’t eat alternative proteins due to price and quality; “If we’re to penetrate the mass-market, the speed of innovation needs to increase dramatically”,

its CEO says.<sup>43</sup> What part then should the UK Government – and other governments – play in the race for meatless meat?

## THE CASE FOR PUBLIC INVESTMENT IN ALTERNATIVE PROTEINS

### Understanding food choice

To understand why governments should explore ways of supporting the market for alternative proteins, it is helpful to consider why we eat what we eat. Taste, cost and convenience are the primary determinants of food choice, a wide-ranging literature from the Good Food Institute (GFI) shows.<sup>44</sup> Health concerns are the primary motivation for those who wish to reduce their consumption of meat. Meanwhile, environmental and animal welfare concerns tend to be secondary drivers of food choice, although vegetarians and vegans report these factors as their primary reasons for eating no meat. Other considerations, including a lack of awareness of the environmental impact of meat,<sup>45</sup> gender stereotypes,<sup>46</sup> and “food neophobia”<sup>47</sup> all form part of the complex web which explains what ends up on our plates.

The implication is that for the vast majority of consumers, concerns about the environment will be insufficient for persuading them to reduce their meat intake, especially not at the scale and pace required. And even where the environmental impact is recognised, many people simply like to eat meat, and it has been made affordable and convenient for them to do so. As the National Food Strategy states, “we have to recognise how people actually behave, rather than just wishing they would behave differently”.<sup>48</sup> Therefore, action needs to be taken to ensure that the primary determinants of food choice – tastiness, affordability and convenience – are not a barrier to people consuming alternative proteins.

### What governments have done so far

Private investors are currently driving the alternative protein funding boom.<sup>49</sup> But it has been argued by commentators<sup>ii</sup> and organisations such as the Breakthrough Institute that central governments are “uniquely suited” to supporting the type and scale of innovation required to develop the alternative protein market.<sup>50</sup> Research can be high-risk, pre-competitive and multidisciplinary, meaning that private firms may instead prefer to go after either low-hanging fruit to generate short-term returns for investors or monopolise innovations. Public investment can help ensure industry advances – from cell biology research through to scaling up production and infrastructure – are shared widely amongst a range of firms. Campaigners argue that open-access research is an essential ingredient for developing a competitive alternative protein market.

Effective innovation also requires collaboration across academic disciplines and between the public sector and firms of all sizes in the private sector. Governments are well-positioned to steer this kind of networking (the National Graphene Institute is a clear example of this), whilst the public sector offers an opportunity for leveraging

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<sup>ii</sup> One of the most prominent examples is a piece from April 2021 by Ezra Klein, calling for a “Moonshot for Meatless Meat” - <https://www.nytimes.com/2021/04/24/opinion/climate-change-meatless-meat.html>



demand, for example through consumption in hospitals and schools. Policymakers around the world are already beginning to take stock of these arguments and open the purse strings, as Table 1 shows.

**Table 1: International examples of public investment in and support for alternative proteins**

Where?	Funding	Description
<b>Netherlands</b>	N/A	A protein cluster at the heart of the Netherlands' "Food Valley", bringing together firms of varying size throughout the food system to drive plant protein innovation. The Netherlands is also home to several alternative protein research centres, accelerators and companies, including Wageningen University and Research. In 2018, the Dutch Council for the Environment and Infrastructure recommended the government work with stakeholders throughout the food system to transition to more sustainable proteins. <sup>51</sup>
<b>Israel</b>	N/A	Provides government funding through foodtech start-up incubators such as Fresh Start, alongside broader ecosystem support and leadership. Former prime minister Benjamin Netanyahu expressed his desire to see Israel become a "powerhouse for alternative meat and alternative protein". <sup>52</sup>
<b>Canada</b>	CAN\$150 million	Protein Industries Supercluster based in Regina, Saskatchewan, aiming to challenge businesses to collaborate and drive protein innovation throughout the food system, and expand the market for plant protein domestically and internationally. <sup>53</sup>
<b>European Union</b>	€32 million	Three-part research programme into alternative proteins, part of the EU's 'Farm to Fork' project, conducting research on alternative proteins and their impact on health and the environment, and increasing crop production necessary for the alternative protein market.
<b>India</b>	\$640 million	A government grant to two institutes in Hyderabad to research scalable cell-based meat. <sup>54</sup>
<b>Japan</b>	\$2.2 million	Japan's Ministry of Economy, Trade and Industry provided a grant to IntegriCulture, a food tech company, to build a 'commercial cellular agriculture facility'. <sup>55</sup>
<b>United States</b>	\$50 million (proposed)	A 60-strong coalition of non-profits and businesses, including Kraft-Heinz and Unilver, is calling for existing federal funds to support alternative protein research.

The UK, at present, is keeping pace with the pack. A £90 million UK Research and Innovation programme<sup>56</sup> to transform food production has spawned a broad spectrum of alternative protein and agri-tech research projects and funded frontier firms.<sup>57</sup> However, this probably represents the minimum of what is needed, and the UK lacks any sort of alternative protein sector strategy. A protein enterprise and research

cluster is also a notable absence; the NFS recommends the Government create a £50 million cluster. Again, this does not appear to be a particularly ambitious policy: the GFI has proposed the Biden Administration spend \$2 billion to establish 20 interdisciplinary research centres.

### **The benefits of a public investment in alternative proteins**

State support for key markets in the Net Zero transition should not be an alien concept to the UK Government. Significant public investment and decisive political leadership in offshore wind has brought the cost of renewable energy down at speed, for example. The environmental case alone ought to be sufficient to persuade policymakers to invest in the UK's alternative protein market. However, there are also a range of other possible benefits which could emerge, examined in the final section of this paper.

#### **Public finances and the economy**

Inaction on climate change will ultimately cost significant sums for the Exchequer. The OBR's 2021 Fiscal Risk report highlights that unmitigated climate change would see the debt-to-GDP ratio reach 289% by 2100.<sup>58</sup> Prevention is cheaper than the cure, and a transition to more sustainable proteins presents an effective means of mitigating biodiversity loss, pressure on land and water, and GHG emissions. One study has suggested that plant-based substitutes have a GHG footprint up to 93% smaller than conventional meat production<sup>59</sup> whilst further research has found cultivated meats can reduce GHG emissions by 78-96% and land use by 99%, compared to conventional European meat production processes.<sup>60</sup> Future innovation to decarbonise the alternative protein value chain – something government investment could support – is likely to further reduce the environmental impact of meat analogues.

Arguments premised on avoiding costs for future generations may seem compelling, but they do not necessarily curry favour in politics. Therefore the language of green jobs and local economic growth may prove more salient. Estimates by the Breakthrough Institute suggest a \$50 million spend on alternative protein R&D will lead to 600-800 new jobs<sup>61</sup> whilst the return-on-investment ratio for agri-research is estimated to be \$1:20.<sup>62</sup> There is already nascent evidence of the kind of jobs which a strong alternative protein sector could lead to. Plant & Bean has recently announced the creation of 500 new jobs in Lincolnshire, establishing the largest plant-based meat factory in Europe.<sup>63</sup> Indeed, the NFS suggested that 10,000 factory roles and 6,500 farming jobs will be created through expansion of the alternative protein industry in the UK.

We should be cautious about the net impact these jobs will have on the UK-wide economy. We are talking about relatively small numbers resulting from any government investment, whilst it is questionable whether they constitute “new” jobs. Alternative protein research roles would likely be additional, but if demand for meat analogues reduces demand for animal meat, it is reasonable to suggest that some employment in the meat industry (e.g. the 97,000 people working in meat processing<sup>64</sup>) could be lost and replaced elsewhere. However, with careful planning, such as supporting livestock and feedstock farmers to transition to alternative forms of land use, a shift to alternative proteins need not be a zero-sum game for employment.

Looking further afield, a green export opportunity looms large, with global demand for alternative protein technologies and products growing every year. China is the jewel in the crown. After a boom in meat consumption during its rapid economic expansion, the Chinese government now plans to reduce the country's meat intake by 50%<sup>65</sup> issuing new 'dietary guidelines'<sup>66</sup> to ensure consumers do so. This represents a vast market opportunity for UK firms looking to take advantage of potentially billions of pounds' worth of Chinese demand for meat substitutes. Equally, it represents a potential threat. The state-mandated creation of a domestic market for alternative meat products could lead to UK firms being blown out of the water by Chinese companies, not just in China itself but in other markets too. If the UK wants to be home to world-leading alt-protein science, products and businesses, it will need to move quickly to stay ahead of (likely state-backed) Chinese firms with a vast domestic market.

### Biothreats

Cheap meat has created serious concerns for human health. These range from antibiotic resistance flowing from intensive animal agriculture<sup>67</sup> and the growing risk of disease transmission from animals to humans associated with the consumption of factory-farmed animals<sup>68</sup> and wild meat.<sup>69</sup> COVID-19 has demonstrated the damage a zoonotic pandemic can cause and the UN Environment Programme has outlined reducing human demand for animal protein as essential to preventing the next pandemic.<sup>70</sup> Meat alternatives can be part of that picture, not only by providing consumers with substitutes, but also through more unconventional applications, such as reducing the expansion of raw meat pet food diets, which are also linked to zoonotic diseases.<sup>71</sup>

### Health

The adverse impact on human health associated with eating meat – particularly red and processed meat – is well observed<sup>72</sup> and has led to reformed dietary guidelines, such as Public Health England's Eatwell Guide. Alternative protein brands have sought to capitalise on consumers' motivation to reduce meat intake for health reasons, positioning products as healthier alternative but also 'cleaner', 'safer' and 'disease free'.<sup>73</sup> There is good evidence to indicate that dietary shifts in favour of plant-based proteins can have positive outcomes for human health. Modelling analysis from the Oxford Martin School for the World Economic Forum suggests that across six health risk factors replacing beef with a type of plant-based protein reduces diet-related mortality, and the most positive effects tend to be found in wealthier countries.<sup>74</sup>

However, alternative proteins are not necessarily a silver bullet for public health. Much of the evidence base relies on consumers substituting meat for traditional vegetarian diets, rather than novel alternatives. One study has suggested claims made about the health properties of plant-based meat may be "misleading", whilst there have been no studies completed on the health effects of eating cultured meat.<sup>75</sup> Part of the problem is that meat alternatives have largely emerged around fast food, with the nutritional value of the product dependent upon cooking medium and other ingredients it is served with.

Governments could play an important role in expanding the evidence base on the health impacts of consuming alternative proteins, for example through funding longitudinal studies and scrutinising the health claims made by manufacturers. Support could also be considered for those firms looking to find innovative methods for increasing the nutritional value of meat alternatives, perhaps even beyond those associated with animal protein. And finally, where positive health benefits are identified, policymakers can use regulatory tools and dietary guidance to shape consumer choice to improve public health outcomes.

### **Animal welfare**

The UK Government has recently attempted to position itself as a world leader on animal welfare through its new Action Plan which, among other things, will establish a new animal sentience expert panel and ban the export of live animals for fattening and slaughter. The Plan is accompanied by legislation – the Animal Sentience Bill – which seeks to “go further” than the regulations on animal welfare the UK was previously subject to under EU law.

Reducing meat consumption, however, is not on the Government’s radar when it comes to promoting animal rights. This is despite on-going concerns about animal welfare standards and practices for rearing and slaughtering animals in the UK. The RSPCA, for example, has expressed concern that breeding companies are selecting broiler chicken breeds with genetic traits best suited to producing the largest economic returns (such as the number of days required to reach slaughter weight) irrespective of the poor health and suffering endured by these breeds as a result.<sup>76</sup> Responding through legislation is clearly key to addressing specific animal rights violations of this nature. But more broadly, it seems inconsistent for a government to claim to be a world leader on animal rights without advocating for a reduction in demand for animal protein.

If the Government is unwilling to make the moral case for reducing meat consumption – due to voters’ perceived unreceptiveness to such an argument – are there other ways it can demonstrate its commitments to animal rights? Support for the alternative protein market would be one possible means of doing so. If consumers have a range of sufficient meat alternatives available to them, this could de-normalise our reliance on cheap animal protein and ultimately reduce animal suffering. Support could even be targeted by the Government specifically to counteracting the most harmful animal welfare practices, for example by supporting R&D for chicken analogues.

### **What next?**

Addressing how much meat we eat in the UK can no longer be kept off the menu by policymakers. The UK Government should demonstrate bold and clear leadership on the need to reduce meat intake if it is serious about its Net Zero commitments. In doing so, it should not write off the option of a meat tax. However, it would be unwise to consider such reforms without the presence of a much more developed alternative protein sector delivering a wide range of affordable, desirable, and widely available meat analogues.

Supporting the alternative protein sector is a low risk, non-intrusive first measure the government could take at relatively low cost to encourage the reduction of meat consumption in the UK and serve as a blueprint for success for other countries. The Government has intervened in many other markets in pursuit of a greener economy and society - it should not shy away from the hard yards necessary to reduce our reliance on animal protein. The 2021 Comprehensive Spending Review provides an immediate opportunity to issue funding for a protein research cluster, as proposed by the National Food Strategy. The Government should also review what measures it could take to provide support for the alternative protein sector more broadly, including state financial support, means of crowding in private investment, and shaping the regulatory landscape in the long-term, to unlock a range of benefits including export opportunities, reducing pandemic risk and fulfilling animal welfare commitments.

## ENDNOTES

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