



Horticultural Sector Committee: Inquiry on Horticulture Sector

Written Evidence Submission by The Food Foundation – April 2023

About The Food Foundation:

We are a young, dynamic, and impactful charity with a mission to change food policy and business practice to ensure everyone, across the UK, can afford and access a healthy diet supplied by a sustainable food system. We are independent of all political parties and business. We work with others who believe there is a problem with the system and want to change it.

Summary:

We welcome the opportunity to submit evidence to the Horticultural Sector Committee.

This submission includes analysis conducted by The Food Foundation and research conducted by the Sustainable and Healthy Food Systems research consortium (SHEFS), of which The Food Foundation is a member.

We argue that there are significant co-benefits associated with eating and growing more fruit and vegetables in the UK. Government could turn the current fruit and vegetable supply crisis into an opportunity by investing in domestic edible horticultural production and simultaneously supporting a shift towards increased UK fruit and vegetable consumption. Growing the horticultural sector would have food security benefits and could lead to positive health and biodiversity outcomes.

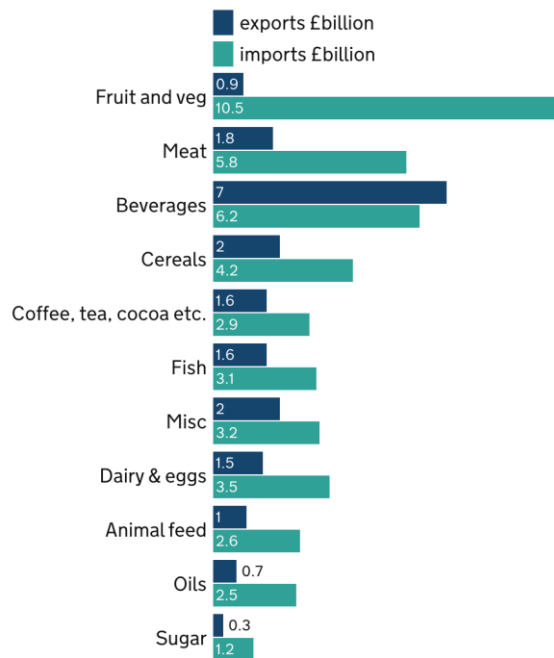
The UK is highly dependent on imports of fruits and vegetables, but there is significant untapped opportunity for higher levels of UK production.

- In 2021, the UK produced 37% of our total supply of fruit and vegetables domestically (3.1 million MT/ year), with net imports making up the other 63% (5.3 million MT/year)¹.

¹ Defra, Latest Horticulture Statistics: <https://www.gov.uk/government/statistics/latest-horticulture-statistics>

- The UK has become increasingly dependent on imports of fruit and vegetables over the past few decades, with contribution from domestic production having decreased by 48% between 1987 and 2013².
- Fruit and vegetables remain our largest trade gap in the food sector with an export value of £0.9 billion compared with an import value of £10.5 billion, giving a trade gap of £9.6 billion in 2021³ (see Figure 1).

Figure 1: UK trade in different food groups, 2021



Source: Defra, [Food statistics in your pocket](#)

- Food Foundation analysis suggests that the UK market share of Apples, Broccoli, Cauliflower, Cherries, Courgettes, Cucumbers, Garlic, Lettuce, Mushrooms, Onions, Pears, Peppers, Spinach, Spring Onions, Sweetcorn and Tomatoes could be increased if appropriate investments were made to support the sector to become more competitive and if labour supply was secure⁴.
- A good number of these crops are grown in glasshouses or inside and so can often be produced year-round and are currently being imported from The Netherlands and Ireland where the climate is not dramatically different from the UK.
- Others are field grown and the volume of UK grown could increase but not substitute imports entirely (e.g. broccoli and spinach imported from Spain).
- Higher temperatures in the UK could start to extend our growing seasons.

² SHEFS, https://shefsglobal.lshmt.ac.uk/wp-content/uploads/2020/06/SHEFS_Fruit-and-Veg-Briefing-1-FINAL.pdf

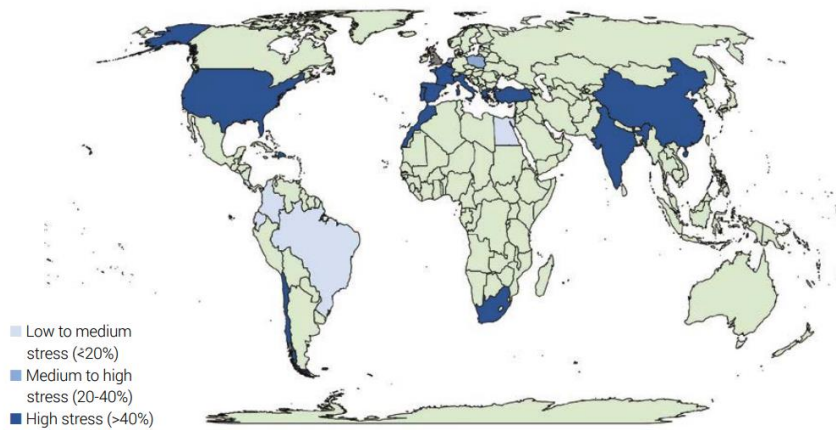
³ Source: Defra, [Food statistics in your pocket](#)

⁴ The Food Foundation, Farming for Five a Day: <https://foodfoundation.org.uk/publication/farming-5-day>

Our current fruit and vegetable supply chains are highly vulnerable to climate risk and water stress, but UK production is much less vulnerable

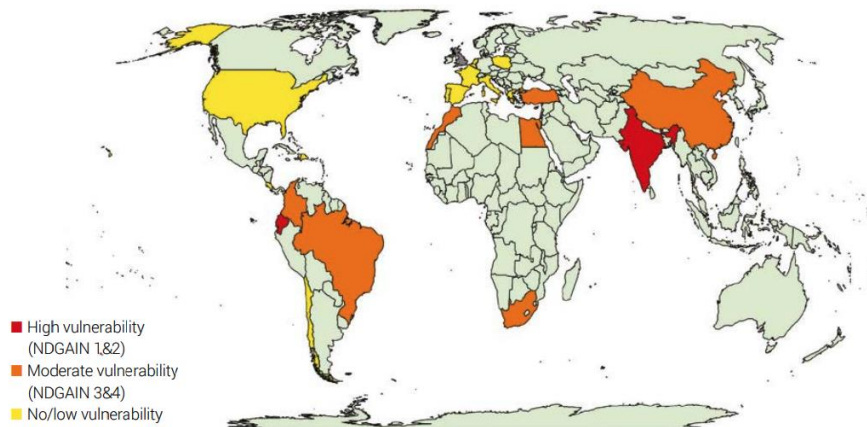
- Analysis by the SHEFS research consortium shows that UK fruit and vegetable supply chains are vulnerable to both climate change and water scarcity (see Figures 2 and 3).

Figure 2: Water stress of countries providing high proportion of UK fruit and veg supply (>1% of total supply)



Source: SHEFS, [Is the UK's supply of fruit and vegetables future proof?](#)

Figure 3: Climate vulnerability of countries providing high proportion of UK fruit and veg supply (>1% of total supply)



Source: SHEFS, [Is the UK's supply of fruit and vegetables future proof?](#)

- The supply of fruit and vegetables from countries likely to face high to extremely high water stress in the near future (2040) has increased from 41% to 54% over the period 1987 to 2013⁵.
- The supply of fruit and vegetables from countries defined as climate vulnerable has increased by 60% increase since 1987, with 32% of our supply coming from such areas in 2013⁶.

⁵ SHEFS, [Is the UK's supply of fruit and vegetables future proof?](#)

⁶ SHEFS, [Is the UK's supply of fruit and vegetables future proof?](#)

- These shifts have been driven to some extent by changing consumption patterns, with consumption of imported tropical fruits such as bananas and pineapples rapidly increasing, for example, whilst consumption of vegetables that are traditionally grown in the UK such as cabbages, peas and carrots has declined⁷.
- In many hot climates a further increase in temperature will reduce yields as it pushes temperatures further above the optimal range for crop growth.
- A growing reliance on imported fruit and vegetables, particularly from water scarce and climate vulnerable countries, could jeopardise the resilience of our supply chains.
- By contrast, the UK is less water scarce than many of the countries from which we import fruit and vegetables, and is classified as ‘least vulnerable’ to climate change⁸.

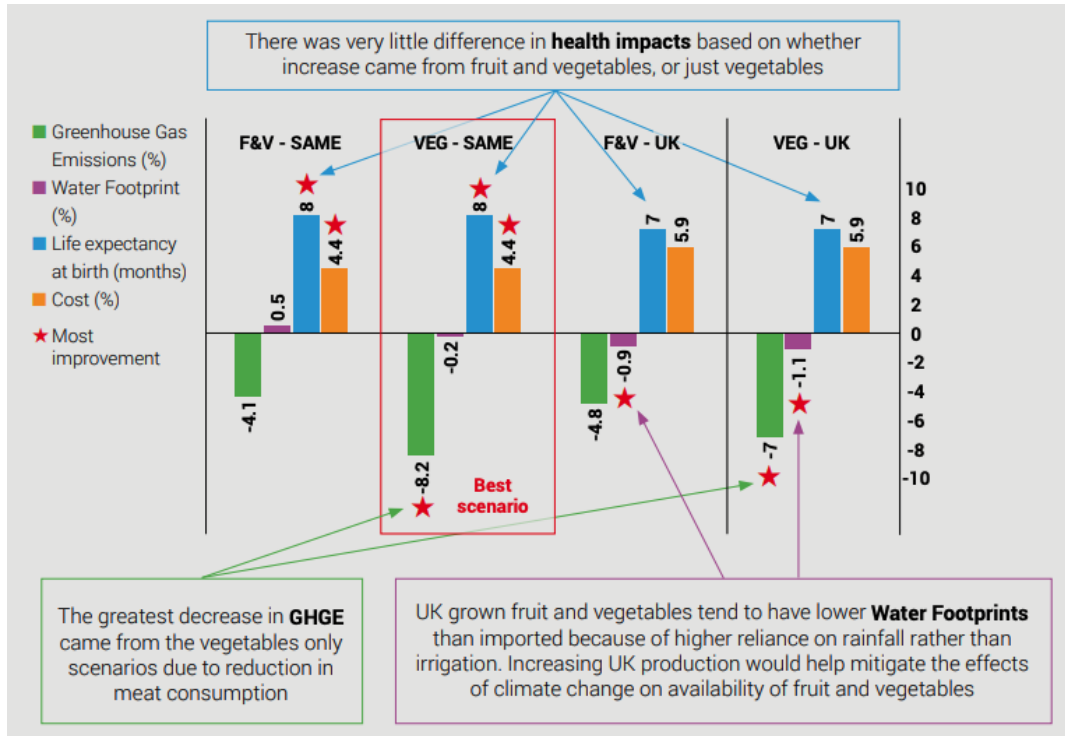
Routes to consuming five-a-day involve growing more vegetables in the UK.

- In a recent modelling study SHEFS researchers investigated the potential impact on our health and the environment of growing the UK’s consumption of fruit and vegetables to 5-a-day. They considered four different pathways for increasing fruit and vegetable supply to achieve this goal:
 - Veg-Same: This scenario increased vegetable consumption only. Additional vegetable supply came from increases in both domestic production and imports.
 - Veg-UK: This scenario increased vegetable consumption only. Additional vegetable supply came from increases in UK production only.
 - F&V-Same: This scenario increased both fruit and vegetable consumption. Additional fruit and vegetable supply came from increases in both domestic production and imports.
 - F&V-UK: This scenario increased both fruit and vegetable consumption. Additional fruit and vegetable supply came from increases in UK production only.
- The results of the analysis are shown in Figure 4. SHEFS found that all the pathways would be better for health and the environment than our current diets.
 - The scenarios resulted in between 4.1-8.2% lower GHGE than current dietary patterns, and in all scenarios life expectancy at birth in the UK increases by seven to eight months.
 - The scenarios that increased consumption of vegetables only (rather than both fruit and vegetables) have better environmental outcomes.
 - Meeting increases in consumption solely through increased UK production would deliver greater water footprint reductions with similar life expectancy gains and slightly smaller greenhouse gas emissions reduction.

Figure 4: Impact of four 5-a-day scenarios on health, environment and cost

⁷ SHEFS, [Is the UK’s supply of fruit and vegetables future proof?](#)

⁸ SHEFS, [Is the UK’s supply of fruit and vegetables future proof?](#)

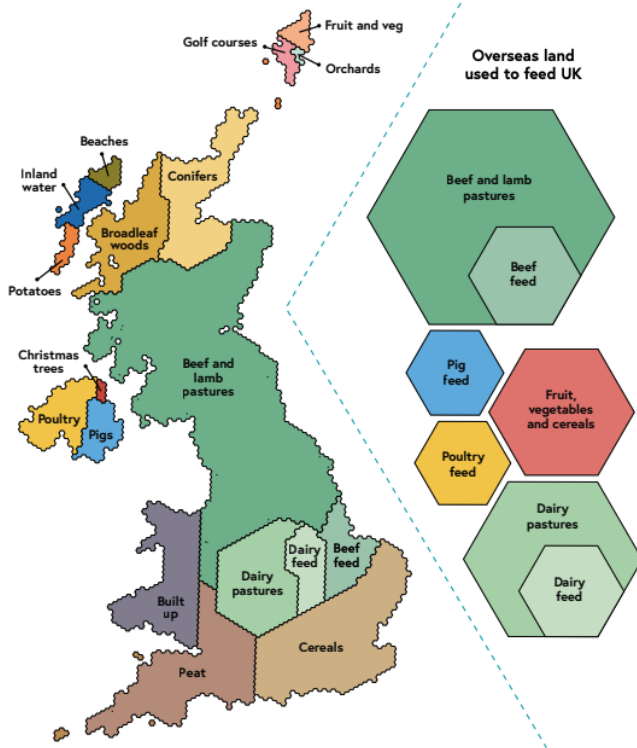


Source: SHEFS, [Pathways to Five-a-Day](#)

Horticulture is hard on biodiversity, but has a low impact on land use

- As the National Food Strategy illustrated so clearly in the diagram below (see Figure 5), we use only a tiny proportion of our land in the UK for growing fruit and vegetables. The rest is used for a diversity of purposes, but pasture for lamb, beef and dairy cattle makes up a large share.

Figure 5: UK land use, and overseas land used to feed the UK

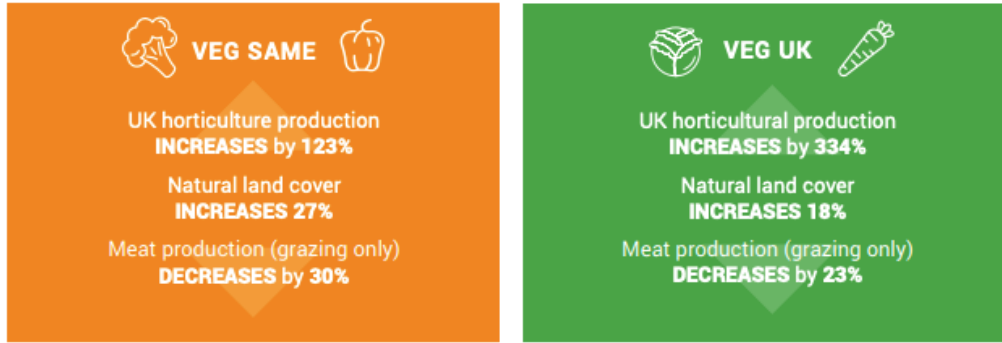


Source: National Food Strategy, [The Plan](#)

- A second modelling study from SHEFS has explored the potential impacts on biodiversity levels in the UK of shifts in diets and land use⁹.
- The two scenarios which showed greatest health and environmental benefits from the first modelling study discussed above were investigated again in this study (see Figure 5). Both of these pathways involve increasing vegetable intake to 5-a-day at the same time as decreasing meat intake (on a per kcal basis), but in one pathway – Veg Same – the additional vegetables eaten were a combination of imported vegetables and those produced in the UK, while in the other pathway – Veg UK – all extra vegetable consumption came from UK-produced vegetables only. This would mean that more than half of our fruit and vegetable supply would be home-produced as opposed to around a third currently.

Figure 5: Land use impacts of two scenarios for reaching fruit and vegetable consumption of 5 a day in the UK

⁹ Source: SHEFS, [Pathways to Five-a-Day and Biodiversity](#)



Source: SHEFS, [Pathways to Five-a-Day and Biodiversity](#)

- The analysis suggests that shifts to diets containing more vegetables and less meat (on a per kcal basis) could result in potential gains to biodiversity in the UK (see Figure 5) that could contribute to the UK Government fulfilling its commitment to reverse the decline in biodiversity by 2030.
- These biodiversity gains would not come from the expansion of horticulture, as horticultural land was found to be low in biodiversity levels, but rather from reducing the land required for meat production. Producing meat requires more land per kcal than producing vegetables, so the land freed up from reduced meat consumption and greater vegetable consumption could be moved into species-diverse habitats such as natural land covers.

Figure 6: Biodiversity impacts of two scenarios for reaching fruit and vegetable consumption of 5 a day in the UK

FIGURE 2: Species losing or gaining with land cover changes for scenarios	Grazing land conversion scenario – percentage of grazing land converted to horticulture or natural land covers	Number species increase*	Number species decrease*	Net number of species gaining*
NO LAND CONVERSION	No change – same as current			
VEG UK	5% to horticulture, 18% to natural land covers	485 <small>*467-504</small>	-78 <small>*65-91</small>	407 <small>*402-413</small>
VEG SAME	3% to horticulture, 27% to natural land covers	599 <small>*583-615</small>	-63 <small>*52-74</small>	536 <small>*531-541</small>

*Range of uncertainty. *More than 10% habitable area.

Source: SHEFS, [Pathways to Five-a-Day and Biodiversity](#)

- The modelling also shows that climate change is likely to impact UK biodiversity negatively but that the effects could be mitigated, to some degree, by the land use changes potentially associated with such a shift of dietary patterns¹⁰.
- To achieve these co-benefits, strategies to increase veg consumption and reduce meat consumption should be encouraged in tandem with incentives – through Environmental Land Management Schemes, such as the Sustainable Farming Incentive, Local Nature Recovery and Landscape Recovery – for farmers to make shifts in land use that enhance biodiversity.

¹⁰ Source: SHEFS, [Pathways to Five-a-Day and Biodiversity](#)

People in the UK eat too little fruit and veg but they want to buy British, and seasonal produce

- In the UK, on average adults eat just under four portions of fruit and vegetables per day, which is substantially below the government’s dietary recommendations, captured in the Eatwell Guide, of about seven portions per day¹¹.
- Only 33% of adults and just 12% of 11–18-year-olds are currently achieving the more modest five portion target¹².
- The proportion of people eating little to no vegetables has increased over the past decade for both adults and children aged 5–10 years old, with almost a third (29%) of primary school aged children, and 23% of children aged 11-16 eating less than one portion of vegetables a day¹³.
- 2022 research by the Food Standards Agency found that people wanted to see protection for British farming post-Brexit. 59% said they were worried over the future of British farming and 58% expressed concerns over the UK’s dependency on food imports. 59% agreed with ‘I trust local food producers to have higher quality standards than big business’ but only 47% said they actively try to buy from local food producers¹⁴.
- A 2021 survey undertaken by OnePoll for the National Farmers Union showed support for British food and farming - 73% of the public often or always look specifically for British food when shopping, and 88% of the public feel that it is important that Britain has a productive farming industry¹⁵.
- A YouGov survey run on behalf of Veg Power in 2021 found that three quarters of adults said it should be easier to identify which veg are in season when shopping, with 80% saying that they would like supermarkets to do more to promote seasonal veg, for example through clearer advertising and messaging for in-season vegetables¹⁶.

Population-wide consumption of fruit and vegetables can be boosted by improving the food environment

- Making fruit and vegetables more accessible, affordable and appealing would increase consumption.
- This includes investing in advertising for fruit and vegetables, strengthening the school food standards and the requirements for wider public procurement, and improving business transparency.
 - Fruit and vegetable advertising: Investing in fruit and vegetable advertising can drive aspiration and normalise consumption. Government investment could build on the work

¹¹ SHEFS, [Is the UK’s supply of fruit and vegetables future proof?](#)

¹² The Food Foundation, Veg Facts 2021: <https://foodfoundation.org.uk/publication/veg-facts-2021>

¹³ The Food Foundation, Veg Facts 2021: <https://foodfoundation.org.uk/publication/veg-facts-2021>

¹⁴ Food Standards Agency, The UK Public’s Interests, Needs and Concerns Around Food: <https://www.food.gov.uk/sites/default/files/media/document/The%20UK%20Public%27s%20Interests%20Needs%20and%20Concerns%20around%20Food%20-%20Main%20UK%20report.pdf>

¹⁵ National Farmers Union: <https://www.nfuonline.com/updates-and-information/new-survey-shows-british-public-wants-government-to-champion-and-protect-british-food-in-trade-deals/>

¹⁶ The Food Foundation, Veg Facts 2021: <https://foodfoundation.org.uk/publication/veg-facts-2021>

of Veg Power and the 5-a-day campaign. Forty million people have been reached every year since 2019 by Veg Power's 'Eat Them to Defeat Them' children's advertising campaign and this work has led to the consumption of a billion children's portions of fruit and vegetables¹⁷. There is an opportunity to scale this up further and combine it with school and early years programmes, as well as to support a new marketing fund (potentially co-funded with retailers and producers) for British fruit and vegetables to advertise seasonal produce.

- School food standards: Updating the School Food Standards to require two portions of vegetables to be served in each main meal would help to increase consumption of vegetables by children during the school day. Scotland introduced new standards for school food in September 2020 which requiring that a minimum of two full portions of vegetables and a full portion of fruit are offered as part of a school lunch, with full portions of fruit and or vegetables also available in, for example, tuck shops. The Scottish Health Survey has showed that between 2019 and 2021 there was a significant increase in fruit and vegetable consumption among children¹⁸.
- Public Procurement: As proposed by Defra in their recent consultation, mandatory standards for food procurement should be introduced across the whole public sector. As long as these standards are accompanied by an appropriately robust enforcement regime, applying consistent standards will generate economies of scale – helping to create viable new markets for healthy, sustainable food – therefore benefitting both producers and suppliers. To increase fruit and veg consumption we support strengthening the requirements in the existing standards. All main meals should contain two portions of vegetables. If fruit is used in a dessert, then that should count as an additional portion. A variety of fruits and vegetables should be procured to ensure recommended nutrient intakes can be achieved across all age groups. Vegetarian and vegan options should always be available.
- Business transparency: A new Food Data Transparency Partnership (FDTP) was committed to in the Government Food Strategy in June 2022 to improve business transparency, to encourage competition among retailers, and to enable Government and civil society to monitor progress. We would encourage the Government to press ahead with these plans, introducing requirements for businesses to report on their fruit and vegetable sales and food waste.

Fruit and veg are often unaffordable for low-income consumers but improving the food environment and strengthening nutritional safety nets can ensure that everyone, including low-income consumers, eat more British fruit and veg

- Consumption of fruit and vegetables shows strong, wealth-related differences – the highest income groups consume about 1.5 portions per day more than the lowest¹⁹.

¹⁷ Food Foundation. Peas Please Progress Report 2022: <https://www.foodfoundation.org.uk/publication/peas-please-progress-report-2022>

¹⁸ <https://scotland.shinyapps.io/sg-scottish-health-survey/>

¹⁹ SHEFS, [Is the UK's supply of fruit and vegetables future proof?](#)

- Although there has been a drop in numbers of those in high income groups eating less than one portion of veg a day over the past decade, the same cannot be said for low-income groups, suggesting widening dietary inequalities²⁰.
- Between February 2022 and February 2023, the price of fruit rose by 15.7% and vegetables by 18%²¹. With more healthy foods nearly three times as expensive per calorie as less healthy foods, it makes economic sense for households to switch away from purchasing fruit and vegetables when budgets are tight.²²
- Evidence-based policy mechanisms to support low-income consumers to access more fruit and vegetables include improving and expanding the Healthy Start scheme, expanding Free School Meals, trialling fruit and vegetable prescriptions, and investing in community restaurants.
 - Healthy Start: This scheme provides weekly payments to low-income households with pre-school aged children to be spent on healthy food, including fruit and vegetables. Expanding entitlement to the scheme to bring it in line with the equivalent Best Start Foods scheme in Scotland would ensure all pregnant women under the age of 18 and pre-school children from benefit-receiving households are eligible (including children with ‘no recourse to public funds’), and raising the value of the voucher to keep up with inflation would ensure that its buying power is not gradually eroded over time²³. Many supermarket retailers introduced schemes to add value to Healthy Start vouchers during the Covid-19 pandemic. Research from IGD/University of Leeds²⁴ and the University of Birmingham²⁵ separately evaluating Sainsbury’s and Lidl’s Healthy Start value-add offers during 2020-21 have found that both approaches materially impacted on the amount spent on fruit and vegetables.
 - Free School Meals: Expanding eligibility for Free School Meals to all children living in households on Universal Credit would ensure children from low-income families get access to fruit and vegetables at lunchtime during the school day²⁶.
 - Fruit and vegetable prescriptions: Government should remain committed to piloting fruit and vegetable prescriptions in England through the three-year Community Eatwell programme, as outlined in the 2022 Levelling Up White Paper²⁷. Under this scheme, GPs will be able to prescribe vouchers for fresh fruit and vegetables as well as food-related education and social support to those experiencing food insecurity or diet-related illness. If evaluations show it to be effective, the scheme could be rolled out nationally.

²⁰ The Food Foundation, Veg Facts 2021: <https://foodfoundation.org.uk/publication/veg-facts-2021>

²¹ The Food Foundation, Food Price Tracker: <https://foodfoundation.org.uk/initiatives/food-prices-tracking#/undefined/Consumer-Price-Index>

²² The Food Foundation, Broken Plate 2022: <https://foodfoundation.org.uk/publication/broken-plate-2022>

²³ The Food Foundation, Healthy Start Working Group Policy Positions: <https://foodfoundation.org.uk/publication/healthy-start-working-group-policy-positions>

²⁴ IGD/University of Leeds, Healthy sustainable diets: driving change: <https://igdwebfiles.blob.core.windows.net/websiteassets/Portals/0/downloads/Content/Healthy-Sustainable-Diets-Driving-Change.pdf>

²⁵ University of Birmingham, shared privately with The Food Foundation

²⁶ The Food Foundation, The Superpowers of Free School Meals: <https://foodfoundation.org.uk/publication/superpowers-free-school-meals-evidence-pack>

²⁷ DLUHC, Levelling Up in the United Kingdom: <https://www.gov.uk/government/publications/levelling-up-the-united-kingdom>

- Community Restaurants: community restaurant (or community kitchen) is a space for people to come together to eat cheaply and nutritiously. At their peak, there were about 2500 community restaurants ('British Restaurants') during the 1940s (twice the current number of McDonald's restaurants). Community restaurants can help revive the high street, produce vegetable-heavy nutritious food more cheaply than cooking from scratch at home, and support people struggling with broader social issues like loneliness and social isolation.²⁸

Dynamic procurement models help public money reach a wider range of small and medium suppliers

- Dynamic food procurement pilots in England and Wales have shown real promise. The model adheres to strict legal regulations whilst overcoming some of the inherent barriers that usually prevent smaller businesses supplying the public sector.
- Dynamic food procurement enables a mix of small and large suppliers to fulfil contracts, enabling access to smaller suppliers whilst ensuring volumes for larger orders are met²⁹.

Horticulture is labour intensive, and growers need certainty in order to invest

- Horticulture requires a large workforce of skilled and motivated workers in order to function efficiently and relies heavily on overseas workers.
- Continued shortages of migrant labour, driven by the UK's exit from the EU and by the Covid-19 pandemic, are a pressure point for producers, with unharvested crops resulting in food waste, loss of income and growers shifting from vegetable to arable crops.
- Growers need long term certainty within the Seasonal Workers Scheme to provide confidence they will have sufficient access to a productive workforce to invest for the mid to long term³⁰.
- Alongside this, greater research and investment in automation and robotics is required to fast track technology development for the most labour-intensive roles. This will also change the profile of a proportion of the labour demand, requiring seasonal and trained professionals with technical skills – vocational and technical horticultural courses will also be needed³¹.

Solution: Defra's plan for British horticulture should focus on:

²⁸ The Food Foundation, Community Restaurants: A Cost of Living Intervention:

<https://www.foodfoundation.org.uk/publication/policy-briefing-community-restaurants-cost-living-intervention>

²⁹ Soil Association, Shortening Supply Chains:

https://www.soilassociation.org/media/20821/shortening_supply_chains_report_web.pdf

³⁰ Fruit and Vegetable Alliance, Cultivating Success: Priorities for increasing sustainable production to meet growing demand, March 2023 [unpublished, private paper]

³¹ Fruit and Vegetable Alliance, Cultivating Success: Priorities for increasing sustainable production to meet growing demand, March 2023 [unpublished, private paper]

- Supporting increased fruit and vegetable consumption whilst protecting low-income consumers to realise significant health and environmental benefits. This should include using public procurement, nutritional safety nets like Healthy Start and Free School Meals, more advertising (like Veg Power), greater business transparency, and community restaurants, helping to reduce health inequalities.
- Boosting domestic fruit and vegetable supply to meet greater consumer demand and to ensure that the UK's fruit and vegetable supply chains are not unsustainably dependent on imports from countries likely to experience future climate and water stress – shifting land into horticulture drawing on technological innovation to reduce carbon and biodiversity impacts, giving producers certainty on the availability of labour, and providing greater subsidy and investment support for smaller producers who create connection for consumers, environmental public goods and produce a greater diversity of products.

Links to Food Foundation/SHEFS policy briefing series on the production and consumption of fruit and vegetables:

Briefing 1: [Is the UK's supply of fruit and vegetables future proof?](#)

Briefing 2: [Pathways to Five-a-Day](#)

Briefing 3: [Pathways to Five-a-Day and Biodiversity](#)

Briefing 4: [How can policymakers boost fruit and vegetable production and consumption?](#)