



SHEFS

POLICY BRIEF 4:

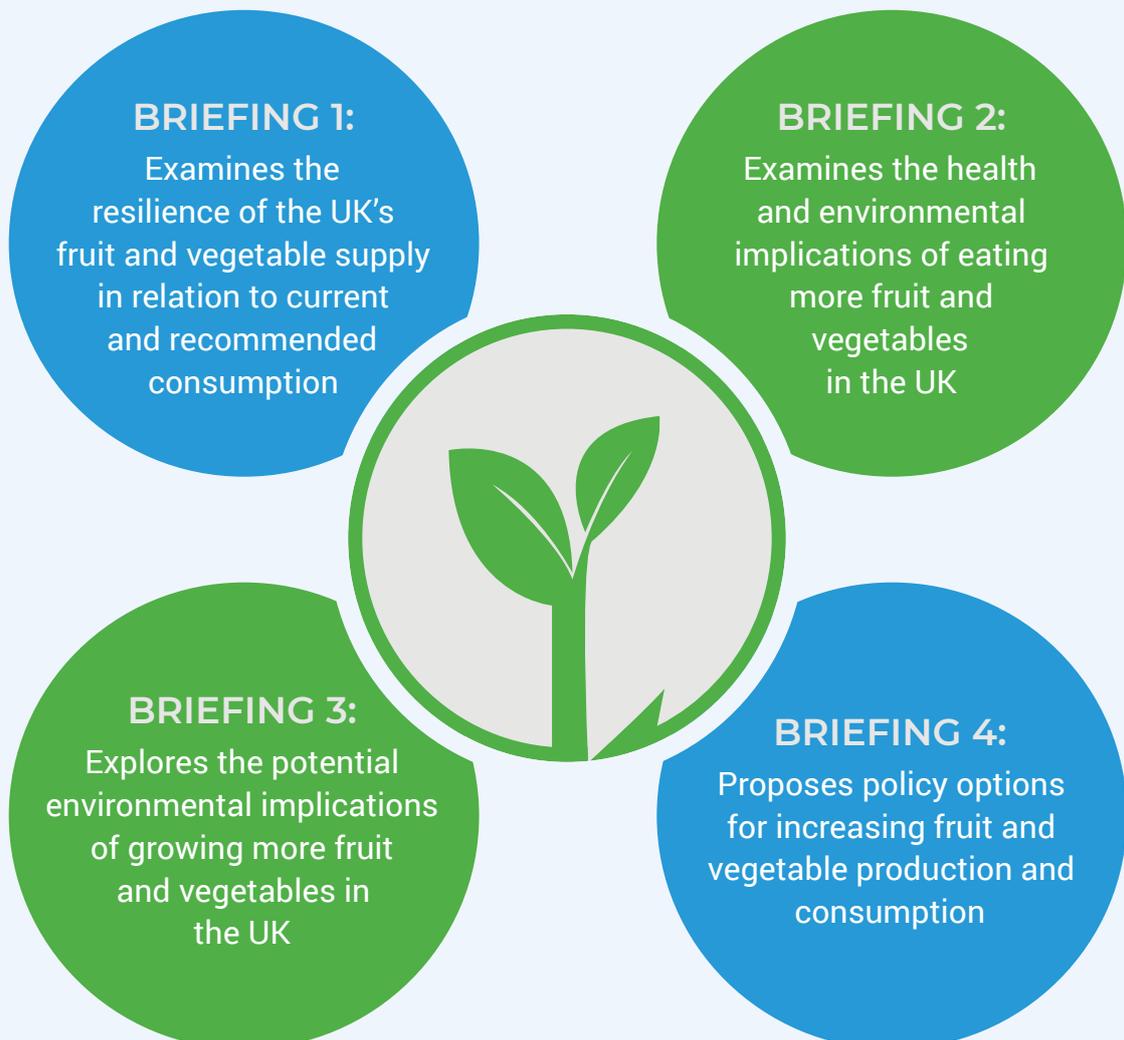
How can policymakers boost fruit and vegetable production and consumption?

WHAT IS SHEFS?

SHEFS (Sustainable and Healthy Food Systems) is a global research programme using novel techniques to generate and synthesise evidence, and to help decision-makers create policies that deliver nutritious and healthy diets in an environmentally sustainable and socially equitable manner.

ABOUT THIS SERIES

This series of four policy briefings draws on research conducted by the SHEFS consortium funded by the Wellcome Trust. It explores the potential health and environmental benefits of increasing our consumption of fruit and vegetables in the UK, explores the potential biodiversity impacts of growing more fruit and vegetables in the UK, and examines the resilience of our fruit and vegetables supply chains in light of climate change. It ends by considering the mix of policies that should be considered to support fruit and vegetable consumption and production in the food and agriculture strategies of all four UK nations.





POLICY BRIEF 4: HOW CAN POLICYMAKERS BOOST FRUIT AND VEGETABLE PRODUCTION AND CONSUMPTION?

AUTHOR: **ALICE ENGLISH AND ISABEL HUGHES**

SUMMARY

- **BRIEFING 1** showed that a considerable proportion of fruit and vegetables consumed in the UK are imported from countries vulnerable to the effects of climate change.
- **BRIEFING 2** showed that increasing intake to five-a-day (while reducing meat and sugar consumption on a per kcal basis) would lead to significant health and environment benefits.
- **BRIEFING 3** showed that the land-use changes associated with a shift to diets containing more vegetables and less meat could result in gains to biodiversity in the UK.
- This briefing (Briefing 4) is the final in this series. It explores the implications for policymakers of the research presented in the first three briefings and identifies four priorities for policymaking: 1) supporting increased fruit and vegetable consumption; 2) protecting low-income consumers; 3) boosting domestic fruit and vegetable supply; and 4) better leveraging government leadership. A number of specific policy interventions are proposed to demonstrate how Government could make progress in each of these four areas.





We are not eating or sourcing enough fruit and vegetables

The UK's Eatwell Guideⁱ recommends that UK adults eat on average around seven portions of fruit and vegetables per day. But current consumption levels are falling short, even if measured against the more modest '5-a-day' public health messaging target, with only 33% of adults and just 12% of 11–18-year-olds currently achieving the five-portion target.ⁱⁱ In his recent independent review of the food system, Henry Dimbleby recommended that the Government should aim to deliver a 30% increase in fruit and vegetable consumption across the population by 2032.ⁱⁱⁱ

To meet fruit and vegetable demand, we have become increasingly reliant on imports, with the UK market currently importing 47% of vegetables and 84% of fruit.^{iv} But total supply of fruit and vegetables in the UK is still well below the amount required for everyone to eat five portions per day (Figure 1) – even if we assume no food waste.

SHEFS research has shown how important fruit and vegetables are for...

... FOOD SECURITY

Briefing 1 showed that the UK fruit and vegetable supply chain is vulnerable to climate change and water stress.

A considerable proportion of fruit and vegetables consumed in the UK is imported from countries vulnerable to water stress or the effects of climate change, jeopardising the long-term resilience of our supply chains.

- SHEFS researchers found that 54% of imported fruit and vegetables in 2013 were from countries likely to face high to extremely high water scarcity in the near future (by 2040) – a 32% increase since 1987.
- 32% of imports of fruit and vegetables in 2013 were from areas defined as climate vulnerable - a 60% increase since 1987.
- These shifts are driven to some extent by changing consumption patterns. For example, consumption of imported tropical fruits such as bananas and pineapples has rapidly increased, whilst consumption of vegetables that are traditionally grown in the UK such as cabbages, peas and carrots has declined.
- Decreases in fruit and vegetable supply (as well as increased price) could be highly unfavourable for population health and would likely have greater impacts on lower income households.

FIGURE 1:

Number of portions of UK fruit and vegetable consumption and supply (per person per day)²





... OUR HEALTH AND FOR THE CLIMATE

Briefing 2 showed that increasing consumption of fruit and vegetables in the UK would lead to significant health and environmental benefits.

Increasing intake to five-a-day (while reducing meat and sugar consumption on a per kcal basis) would increase healthy life expectancy and reduce greenhouse gas emissions.

- All of the pathways to five-a-day considered by SHEFS researchers increased life expectancy and decreased greenhouse gas emissions. The greatest benefits were seen in the pathway ('Veg-Same') that increased vegetable intake only (rather than fruit and vegetables), and where the additional vegetables came from the same varieties we currently eat, and from the same countries from which we currently source. This pathway would require us to increase both domestic production and imports of vegetables. It would contribute eight months to the NHS target^v to extend healthy life expectancy in the UK by 5 years by 2035 and would reduce greenhouse gas emissions from diets by 8.2%. All scenarios increased costs for consumers, pointing to the need for careful policy intervention to ensure that those on lower incomes are not further disadvantaged.

... BIODIVERSITY

Briefing 3 showed that increasing production of fruit and vegetables in the UK could support biodiversity.

If coupled with the land-use changes resulting from reduced meat consumption, a shift to diets containing more vegetables could result in gains to biodiversity in the UK.

- Current horticultural land has low levels of biodiversity but increasing fruit and vegetable consumption whilst simultaneously decreasing meat consumption (on a per kcal basis) reduces the overall land requirement, allowing some land to be used instead for species-diverse habitats like natural land covers. This is because producing meat requires more land per kcal than vegetables.
- SHEFS researchers modelled the land-use changes and potential biodiversity impacts associated with the same 'Veg Same' pathway from Briefing 2. They found that in this scenario, out of the 814 species they considered, 599 (range of possibility 583–615) were projected to have increased habitable area of at least 10%, and 63 (range of possibility 52–74) were projected to have decreased habitable area of at least 10%.
- Climate change is likely to impact UK biodiversity negatively, but the effects could be mitigated, to some degree, by the land use changes that were modelled.
- This work suggests that strategies to increase vegetable consumption and reduce meat consumption should be encouraged in tandem, and that farmers should be incentivised to make shifts in land use that might enhance biodiversity.



But concerningly, both production and consumption of fruit and vegetables in the UK are increasingly under pressure.

Since we published the first briefing in this series back in June 2020, the policy and economic context for fruit and vegetable production and consumption in the UK has experienced significant volatility.

Horticultural producers are seeing production cost increases of up to 27%, with inflation at record levels and increasing input costs.^{vi} Rising energy prices are hitting energy-intensive producers (such as glasshouse growers) particularly hard. Despite the rise in costs to consumers at the retail level, producers are reportedly only receiving a tiny proportion of the retail price and profits.^{vii} 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 and loss of income. Even prior to the turmoil of recent years, vegetable production has been declining and is currently at a 20 year low.^{viii}

For consumers, the cost-of-living crisis is putting strain on household budgets. Between October 2021 and October 2022, the price of fruit rose by 10.3% and vegetables by 15.1%. With more healthy foods nearly three times as expensive per calorie as less healthy foods^{ix}, it makes economic sense for households to switch away from purchasing fruit and vegetables when budgets are tight, particularly for those living on a low-income. Even before the cost-of-living crisis, consumption of fruit and vegetables showed strong, wealth-related differences – with the highest income groups consuming about 1.5 portions per day more than the lowest.^x

In the policy sphere, a series of delays have been announced to key policies from the Government's 2020 *Obesity Strategy* (for England) which were designed to take less healthy foods out of the marketing and advertising spotlight.

Longer-term systemic drivers continue to create challenges for fruit and vegetables at all stages of the value chain. Horticultural producers in the UK tend to be smaller in scale and in receipt of lower levels of subsidy than producers in very competitive industries elsewhere in Europe (for example in The Netherlands, where horticulture has benefited from a lot of capital investment and state support). Food manufacturers and retailers have economic incentives to prefer processed foods – which are less perishable, cheaper to produce with higher margins, easier to pack and distribute, and more amenable to marketing and branding. Henry Dimbleby described the interplay between these economic incentives and our biological preference for energy-dense foods as a 'junk food cycle' in his independent review of England's food system - *National Food Strategy: The Plan*.

Even before the cost-of-living crisis, consumption of fruit and vegetables showed strong, wealth-related differences – with the highest income groups consuming about 1.5 portions per day more than the lowest.^x





THE RESEARCH SUGGESTS THAT THERE ARE FOUR KEY PRIORITIES FOR POLICYMAKERS:

- 1. Supporting increased fruit and vegetable consumption** to realise significant health and environmental benefits.
- 2. Protecting low-income consumers** to ensure that they are not disproportionately impacted by price rises associated with climate disruption and a shift to diets that include more fruit and vegetables.
- 3. 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.
- 4. Better leveraging government leadership** to ensure that the co-benefits of increased fruit and vegetable production and consumption for health, greenhouse gas emissions and biodiversity are fully realised.

to sensory food education for early years practitioners in collaboration with TastEd^{xi} and should now look to provide funding and more substantive support to early years settings to enable a nationwide rollout.

b) In schools:

- Promote fruit and vegetable consumption in schools by increasing the volume of fruit and vegetables served at snack times and mealtimes.
- Expand England's School Fruit and Vegetable Scheme (and introduce similar schemes in other devolved nations) so that all primary school children can benefit and increase funding to enable schools to procure higher quality produce from local suppliers (as recommended in the National Food Strategy).
- Strengthen England's School Food Standards so there is a requirement for two portions of vegetables to be included in each meal (as is already the case in Scotland).
- Provide funding to enable training and support of school catering teams to provide tasty and appealing vegetable-based meals.
- Adopt a combination of stay-in school policies and lunchtime activities to encourage students to opt for a school meal.
- Encourage retailers in the vicinity of schools to position, advertise and label healthy choices including fruit and vegetables to be more visible and attractive to students.

Delivering on these priorities will require policymakers to take concerted action across the food system. A number of specific policy interventions are proposed below to demonstrate how Government could make progress in each of these four areas.

1 SUPPORTING INCREASED FRUIT AND VEGETABLE CONSUMPTION

a) In the early years: Invest in a nationwide early years programme for teaching children to develop healthy taste preferences and a lifelong preference for fruit and vegetables, as recommended in Dimbleby's National Food Strategy: The Plan. This could build on Finland and Sweden's experience and the nascent work of TastEd (previously Flavour School) in the UK which provides sensory food education in early years settings. The Department of Education recently launched a guide





c) On TV and online: Invest in fruit and vegetable advertising to drive aspiration and to normalise consumption. This could build on the work 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 vegetables.^{xii} 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.

d) In supermarkets and restaurants:

- Fully implement the policies announced in the 2020 Obesity Strategy to encourage businesses to focus promotions and advertising budgets on healthier options, including fruit and vegetables.
- Introduce requirements for businesses to report on their fruit and vegetable sales as part of new Food Data Transparency Partnership (FDTP) which 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.
- Rebalance the cost of unhealthy and healthy foods, including fruit and vegetables, so the cheapest options are the healthiest.



2 PROTECTING LOW-INCOME CONSUMERS

a) Expand the entitlement of Healthy Start vouchers to bringing eligibility in line with that of Best Start Foods (the equivalent scheme in Scotland). This would ensure all pregnant women aged under 18 and households with pre-school aged children from households that are in receipt of benefits are eligible (including children with ‘no recourse to public funds’).

b) Expand Free School Meal eligibility to all children living in households on Universal Credit as an urgent response to the cost-of-living crisis, ensuring that children from low-income families get access to fruit and vegetables at lunchtime during the school day.

c) 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 Paper. 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 should be rolled out nationally.

d) Develop a scheme with wholesalers aimed at increasing the fruit and vegetable offer in convenience stores in areas of high deprivation. This would help to ensure fruit and vegetables are accessible for all, preventing some areas being ‘deserts’ for such foods. Work driven by Rice Marketing and Impact on Urban Health on increasing the availability and accessibility of healthier options in deprived areas has already begun in the London boroughs of Lambeth, Southwark and Newham. The Southwark pilot project demonstrated that, when given the right support, independent convenience retailers will offer products that are lower in salt, sugar and fat - including fruit and vegetables - resulting in increased sales of these products in these areas.^{xiii} If rolled out nationally, effective cross-sector partnerships would be needed to ensure wholesalers, retailers, suppliers and local authorities are aligned on making healthy options more available.



3 BOOSTING DOMESTIC FRUIT AND VEGETABLE SUPPLY

a) Through increased production: Alleviate immediate pressures on horticultural producers by putting in place measures to secure a reliable supply of seasonal labour as well as support to manage rising energy costs. Deliver a new horticulture growth strategy for England (as committed to in the Government Food Strategy) support production volumes to sustainably increase by at least 30% by 2032 to match the required growth in consumption levels. This should address the challenges faced by the horticulture sector in a holistic manner, taking small, medium and large producers into account, and delivering enabling policies and greater financial support to help the sector grow sustainably. For growers of all sizes, it could include capital investments to increase productivity and competitiveness (e.g., for glasshouses, irrigation, machinery, orchard planting etc). For larger growers, it could include increased investment and research in labour-saving technologies, and strategic focusses on the productivity of specific crops so the UK becomes a world leader in these crops. The strategy could support new farmers, young farmers, and growers with smaller farms by improving access to land for new entrants, delivering stronger farmer extension support, and providing targeted financial incentives and grants to growers who prioritise innovation, ecological growing techniques and direct engagement with customers. This could include support for peri urban growing schemes. The strategy should prioritise supporting the environment and align with emerging horticulture plans in the devolved nations such as Wales' Horticulture Development and Start Up schemes which are further ahead.

b) Through decreased waste: Encourage increased reporting of on-farm food waste levels and drivers to enable policy and practice shifts to be identified and support the reduction of farm-stage food waste.^{xiv} Encourage businesses to sign up to WRAP's Courtauld 2030 commitment and follow their Target, Measure, Act approach which has shown success in reducing waste and associated costs.^{xv} Also, encourage cross-chain collaboration with the continued development of whole-chain food waste reduction plans to reduce waste from farm-to-fork. Finally, encourage retailers to expand their efforts to support whole crop purchasing and introduce more flexible standards to manage production and quality variations.



4 Better leveraging government leadership

a) Introduce mandatory standards for food procurement across the whole public sector

in line with the recent proposals consulted on by the Department for Environment, Food and Rural Affairs. These standards should be 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. Ensure all publicly procured food is required to include two portions of vegetables as standard in every main meal (if fruit is used in a dessert, then that should count as an additional portion). Refocus procurement weighting systems to make sure that nutrition, welfare and environmental standards are assigned more importance than cost alone in tendering decisions. Public procurement is the government's most direct tool to shape the food system.

b) Introduce cross-departmental governance structures

to enable a less siloed approach to policymaking on fruit and vegetables to be taken. This would link work across the Department of Environment, Food and Rural Affairs (horticultural production, food retail, and supply chains), the Department of Health and Social Care (public health, diets and welfare food schemes), and the Department for Education (school food).



Conclusion

This SHEFS briefing series has demonstrated the opportunities for ‘win-wins’ presented by fruit and vegetables – they have the potential to improve both our own health, and the health of our environment.

Policymakers must take action to design a food environment in which is it easy and attractive for people to choose to eat more fruit and vegetables, and to address the financial and practical barriers that may prevent them.

Simultaneously, farmers in the UK must be supported to realise the potential of the domestic horticultural industry for growth and to ensure the resilience of our future fruit and vegetable supplies.

The policy proposals outlined in this briefing focus on sustainably driving up UK horticultural production levels to ensure sufficient, resilient future supply, in combination with targeted measures to increase consumption, particularly in children, through a combination of government leadership, business engagement, and support for people on low incomes.



References

- i. Food Foundation. Veg Facts 2021; 2021. <https://foodfoundation.org.uk/publication/veg-facts-2021>
- ii. Food Foundation. Veg Facts 2021; 2021. <https://foodfoundation.org.uk/publication/veg-facts-2021>
- iii. National Food Strategy: The plan, 2021
- iv. DEFRA. Horticulture Statistics 2019.; 2020. <https://www.gov.uk/government/statistics/latest-horticulture-statistics>.
- v. NHS Long Term Plan » Online version of the NHS Long Term Plan. <https://www.longtermplan.nhs.uk/online-version/>. Accessed July 10, 2020.
- vi. Promar International. The Impact of Inflation on the UK Horticultural Sector, 2022.
- vii. Sustain. Unpicking food prices: Where does your food pound go, and why do farmers get so little? 2022. <https://www.sustainweb.org/publications/dec22-unpicking-food-prices/>
- viii. Food Foundation. VEG FACTS 2020 IN BRIEF.; 2020. www.foodfoundation.org.uk. Accessed June 22, 2020.
- ix. The Food Foundation, Broken Plate 2022, P.12
- x. Maguire ER, Monsivais P. Socio-economic dietary inequalities in UK adults: An updated picture of key food groups and nutrients from national surveillance data. *Br J Nutr.* 2014;57(2). 10.1017/S0007114514002621
- xi. Gov.uk, Get help to improve your practice: Sensory food education, <https://help-for-early-years-providers.education.gov.uk/get-help-to-improve-your-practice/sensory-food-education>. Accessed October 4, 2022.
- xii. Food Foundation. Peas Please: National Lottery Community Fund Progress Report, 2022. Pre-publication.
- xiii. Impact on Urban Health. Putting health at the heart of convenience: Lessons from the Good Food Retail and Wholesale pilot, 2022. Pre-publication.
- xiv. WWF-UK. Hidden Waste: The scale and impact of food waste in primary production, 2022.
- xv. WRAP. The Courtauld Commitment 2030: Progress and Insights Report 2021/2022; 2022.



SHEFS

**FRUIT AND
VEGETABLES
POLICY BRIEF
SERIES**

shefsglobal.lshtm.ac.uk

 [@SHEFSGlobal](https://twitter.com/SHEFSGlobal)

With special
thanks to

