



Food Research
Collaboration

Eat more vegetables! Grow more vegetables!
But who will grow the vegetables?

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Food Research Collaboration Policy Insight
July 2022

FRC Policy Insights

The FRC Policy Insights are short reports highlighting gaps and opportunities for improvement in emerging food policy in the UK. The aim is to put detailed, specialist knowledge into the public domain at a critical time for the food system.

Brexit, Covid, the climate and environmental crises, the disruption to supply chains caused by the war in Ukraine, and the UK's acute cost-of-living crisis all have consequences for food policy.

In response, there have been new laws and policy proposals, covering all aspects of the food system, from land use and agriculture to health, trade, labour, technology and innovation.

While policy is being developed, there are opportunities for improvements and course-corrections. We hope these Policy Insights will help to inform that process. If you would like to contribute, please contact the [Food Research Collaboration](#).

A problem and a proposal

We must eat more fruit and vegetables for the benefit of our own health and that of the environment. This message was made very clear in the Independent Review for the (English) National Food Strategy, entitled *The Plan*, published in July 2021.¹ What was less clear was whether there was a plan for where this fresh produce should be grown, who would grow it and how they would be trained. Now the official response, the Government Food Strategy,² has also been published

– to widespread disappointment,³ including from *The Plan*'s author.⁴ Although it offers some welcome commitments for the horticulture sector – including the promise of a dedicated strategy for the sector, something this report also strongly supports – much of its language is vague or ambiguous: it describes what is *already* happening, and what *could* or *might* happen, often without specifying what actually *will* happen.

Meanwhile, since *The Plan* was published, the horticulture sector throughout the UK has faced a perfect storm of labour shortages, cost increases on almost every front (haulage, packaging, energy and other inputs) and increasingly unpredictable weather resulting from climate change.⁵ Some growers are seeing their profit margins disappear altogether. At a time when we might expect to be seeing UK horticulture production *increase* to meet a hoped-for increase in demand, many growers are choosing to *reduce* their acreages of vegetables or shorten their growing season, with the risk of a decline in domestic production in the 2022 season. For example, a fruit farm in Suffolk left 44 tonnes of fruit unpicked last season due to labour shortages, while 60-70% of growers in the Lea Valley had not planted up their glasshouses with salad crops in February 2022 due to gas prices and lack of labour.^{6,7} A parliamentary report on food and farming, published in March 2022, reported that acute labour shortages resulting from Brexit and Covid were threatening food security, the welfare of animals and the mental health of those working in the sector.⁸ In short, while on one hand the public is being urged to eat more vegetables and fruit, the British farmers who grow them are in crisis. Equally seriously, the system for *training* new and existing growers is fragmented and under-funded.

There is, however, a counter narrative of hope in the small and medium scale (SME) organic and

agroecological sector. This sector is successfully attracting new entrants of all ages and backgrounds who are keen to address environmental and food justice issues through practical horticulture. The Landworkers' Alliance (LWA), a union of agroecological farmers, growers, foresters and other land workers, has seen 81% growth in membership over the last three years, while the Organic Growers Alliance saw a growth in membership of 72% between 2018 and 2022,⁹ and the Community Supported Agriculture (CSA) Network's membership has grown from 33 to 200 in the last five years.¹⁰ In comparison to the age demographic of UK farmers, only 3% of whom are under the age of 35,¹¹ 50% of LWA members are under the age of 40. Currently these growers, who tend to sell directly to customers or via short, 'farmer-focused' supply chains, represent a small fraction of the UK market, in which 96% of fresh vegetables are sold in supermarkets.¹² LWA research shows that new-entrant growers favour agroecological horticulture: in a survey of 156 new-entrant members, LWA found that 75% were growing vegetables and 56% were growing fruit. However, while 77% have education at degree level or above, only 21% had agricultural qualifications at Level 2 or above, reflecting the lack of opportunities for practical horticultural training even for the motivated.¹³ It is possible that better supported agroecological horticulture might have the potential to revitalise a flagging sector, helping to attract and retain growers because of its ethos, environmental care and working conditions.

To capitalise on this potential, we urgently need the horticulture strategy the government has now promised for England (and equally for the rest of the UK), and it should centre on *labour, sustainability, profitability and resilience*. By emphasising horticultural career opportunities around sustainability and resilience, a horticulture strategy could successfully engage

a new generation of growers who are attracted to agroecological horticulture. The strategy must combine *short-term measures* to allow the horticulture sector access to the labour it needs now, with a *long-term plan* to recruit and train the horticultural workers and entrepreneurs of the future. It must be backed up by the *resources, legislation and political will* to ensure that implementation begins immediately.

Anticipating the horticulture strategy, this paper lays out the case for why we so urgently need to retain and strengthen our domestic fruit and vegetable production capacity. It looks at the cultural challenges the horticulture sector has faced in recruiting UK workers and entrepreneurs, and outlines the current, fragmented nature of horticultural training, both for entrants to the sector and for those wishing to progress their careers. Finally, it presents five case studies to illustrate grassroots training initiatives which, with government funding, could be scaled up to attract and develop a new generation of growers in the sustainable horticulture sector.

Eat plants to protect the NHS and reduce climate change

The Plan made it clear that any national food strategy should prioritise dietary and behaviour change to prevent poor health, reduce diet-related inequality, and shift from an animal-based to a predominantly plant-based diet to reduce greenhouse gas emissions. While *The Plan's* Recommendation 7, to trial a 'Community Eatwell' programme (later enshrined in the government's Levelling Up White Paper,¹⁴) explicitly

suggested that GPs prescribe fruit and vegetables to increase consumption, successful implementation of a number of the other recommendations would also have resulted in increased demand for fresh produce.¹⁵ Three whole chapters of *The Plan* focused on the need to move away from meat- and dairy-based diets towards plant-based protein and fresh produce. Recommendation 11 singled out fruit and vegetable productivity for innovation investment.¹⁶

Sadly, few of the of *The Plan's* recommendations have made it into the Government Food Strategy (GFS). What comes through loud and clear is an emphasis on high-tech innovation as a main driver of productivity, 'high-quality' jobs and exports. It is revealing that the main discussion of horticulture in the GFS comes in the section (1.3) on 'Levelling Up the Food System by maximising growth opportunities'. The headline ambition here is not to boost domestic horticulture for nutritional or environmental reasons, but to spread opportunities for investment and employment around the country. This is laudable, of course: but the advocates of innovation must recognise that productivity arises not just from technology itself, but also from people: a combination of worker motivation and the application of technical knowledge, with both intimately related to environmental impact and profitability. The GFS acknowledges that food production in the UK cannot sustainably rely on migrant labour, but has little to say about other threats to horticultural production, such as the squeezed profit margins resulting from rising costs and downwards price pressure. It conspicuously fails to make the case for more domestic production on climate grounds. Furthermore, the questions of how the UK will meet the suggested 30% increase¹⁷ in demand for fruit and vegetables, who will grow the produce and how they will be trained remain largely neglected.

Building domestic resilience in the fresh produce supply

At present the UK produces 54% of field vegetables and 16.4% of fruit consumed domestically. While field-scale vegetable production has remained stable at around 2.3 million tonnes over the last 10 years, 'protected' vegetable and fruit production (that is, produce grown under glass or in tunnels) have both declined steadily since 2015.¹⁸ Does this matter when we can import produce from countries with warmer climates, such as Spain, Egypt and Kenya? Yes, for at least two important reasons.

First, much imported produce is grown in countries facing more severe climate impacts than the UK is. The UK is considered by the Notre Dame Global Adaptation Initiative to be among the countries less vulnerable to, and more able to adapt to, climate disruptions.¹⁹ In 2013, 32% of UK fruit and vegetable imports were from areas defined as climate vulnerable, a 60% increase since 1987. For example, large quantities of imported produce are sourced from countries facing increasing water scarcity as a result of climate change, such as Spain, South Africa, Chile, Morocco and Israel. In effect, this means that scarce water from those countries, embedded in the produce, is being transported here.²⁰ On top of this, transportation over long distances – especially by air – adds to the climate-disrupting greenhouse gas emissions of our food supply chains.²¹

The second reason for increasing UK production is to ensure that the existing skills and infrastructure in British horticulture are not lost, but rather developed and built upon. In an Agriculture and Horticulture Development Board (AHDB) survey of skills in the

‘edible horticulture’ sector (which excludes ornamental plants), a small but notable proportion of respondents expressed concern about “the future of highly specialised growing techniques which could be lost, they believe, in the next ten years”.²² Creating a resilient food system entails ensuring that sufficient people have the skill and capacity to grow food efficiently and sustainably. While new technologies might render some older techniques obsolete, at a time when government policy is aiming towards net zero and nature recovery,^{23,24} both traditional and modern practices will be needed to make best use of natural resources.

This leads to the question of whether this knowledge itself should be home-grown or imported. The UK food system has long been reliant on non-UK workers in all sorts of ways. However, since the early 2000s, workers from Eastern Europe have become indispensable to the UK horticulture sector, for reasons connected with pay levels in the UK relative to their home countries, and because they have high levels of relevant skills. Migrant horticultural workers from countries where a larger percentage of the population works in agriculture are more likely to have grown up in farming communities. This can translate both to an understanding of farm work, and to practical skills useful to the UK’s horticulture industry, such as the ability to pick quickly, and operate and mend machinery. In 2019, 21% percent of employees in Romania were active in the agricultural sector, 14% in Ukraine and 9% in Poland, while only 1% of UK employees work in agriculture.²⁵ A wealth of techniques and knowledge is passed down between generations about how to grow a variety of crops in local climates, soils and ecologies. These statistics show the precarious situation in the UK, where diverse skills and knowledge essential to food production are now concentrated in just 1% of the population. While migrant

workers in the food sector have been essential and valued, the case for greater UK food security implies a need to ensure that the skills required to grow food are taught and passed down in the domestic population.

Changing the culture around horticulture

For many decades horticultural work has been undervalued in Britain, despite evidence that it requires complex knowledge and skills.²⁶ The education system has discouraged bright pupils and students from pursuing an interest in land-based occupations, due to their being considered low-paid, ‘unskilled’, manual work. Growers in a recent survey viewed “a negative industry image of low wages and labour-intensive work” as being a significant barrier in the recruitment of labour.²⁷ The survey concluded that, “the sobering bottom line is that around two thirds of employers (61%) regard attitudes, behaviours (27%) and (lack of) interest (35%) as being the major barriers to the employment of apprentices in edible horticulture”. Growers surveyed found that UK nationals wanted to make more money than is offered in the farming/agricultural sector and, generally, they were not interested in manual or seasonal labour.

In contrast, many who choose to work in organic horticulture are less motivated by money than by an attraction to outdoor, practical work, environmental values and other social attributes.²⁸ Research has found that new entrants to growing are more likely to farm organically and engage with agri-environment schemes, and that the new generation of farmers working in sustainable forms of agriculture are more likely to be female, educated and young compared to conventional

farming.²⁹ A separate study of millennials starting out in horticulture found a generation seeking career progression, community, a good work-life balance, and “engaging, meaningful and challenging work”. Most were career-changers in their mid-20s, some wanting “to escape the rat race of city life”, and all spoke of the lack of attention secondary school career services paid to agriculture/horticulture. While most were attracted to the autonomy of running their own business, they were also daunted by the prospect of raising start-up capital.³⁰

All this points to the conclusion that efforts to expand (or even maintain) domestic production will depend on the culture around horticulture changing to provide more rewarding work, better pay and better training. A report for the AHDB found that for edible horticulture to become attractive both for casual British workers and those seeking a long-term career, it is necessary for the sector to adapt, “by paying fairly and creating user-friendly workplaces”.³¹ A recent parliamentary report on labour shortages in the food and farming sector dwelt mainly on immigration issues, but there was also a recognition that “attractive educational and vocational training packages to attract British-based workers” could reduce the sector’s dependence on overseas labour.³²

The GFS recognises that the food sector cannot continue to rely on migrant labour. Its promise of an independent review to tackle labour shortages in the food chain is welcome. It is important that this review should focus on overcoming barriers to entry to horticulture, such as training, access to land and investment capital, rather than assuming that the answers lie in technical solutions such as automation. While in the short term, migrant labour is likely to remain necessary, it is essential that the process to

build domestic skills capacity begins without delay. The current reforms to skills and training, such as the introduction of T-levels, represent a start in this process, but the structure of mainstream horticultural employment may also need to adapt to make jobs on large farms more appealing to domestic new entrants. For example, offering more part-time opportunities and flexible working would allow such jobs to be combined with family life or other employment, relieving the monotony of more tedious jobs.

The varied and changing skills needs of the horticulture sector

The UK edible horticultural sector is highly diverse, comprising a vast range of different crop types (annuals, tree fruit, soft fruit, glasshouse salad veg and herbs), scales (from field scale to urban market gardens), and growing systems (from conventional to organic and Integrated Pest Management), creating a variety of training needs. Even within a sub-sector, the training needs of growers are diverse, ranging from the foundational training required by new entrants to marketing and post-harvest technology skills that hone the efficiency of entrepreneurs and managers. Furthermore, if British workers are to replace overseas workers for harvesting, packing and other seasonal jobs, they will also require training to bring them up to the speed and skill of Eastern European workers.

While new entrants are the most obvious candidates for training, growers of any age and stage can benefit from continuing professional development. Under post-Brexit agricultural policy, the transition to the

Environmental Land Management Scheme will bring additional training needs for existing growers, as they are required to shift towards practices that support soil health and biodiversity while mitigating and adapting to climate change, and alter their approaches to pest and disease management. In addition, the role of skilled agronomists and pesticide sprayers is likely to change in response to environmental concerns and subsequent changes in chemical usage. Workers will need to become trained in the use of new agrochemicals and techniques of soil management, as older chemicals are outlawed.³³ If the environmental resources upon which a horticultural business relies – fertile soil, clean and plentiful water, insect pollinators, a stable climate – are damaged beyond restoration, then productivity and economic viability will be compromised. Training is required to ensure that does not happen.

Automation is being touted as a solution to horticultural labour shortages, but growers see fully autonomous robots as unlikely in the foreseeable future, due to cost and GPS accuracy not yet being developed enough to replace manual labour. Over five to ten years, technology may reduce the need for labour in a hybridised way, with the need for agricultural engineers, IT specialists and technicians being needed to operate increasing levels of automation.

A flexible and holistic approach

If the UK is to increase its horticultural production, it is essential that Defra and the devolved agriculture departments work with the horticulture sector to create and implement a bold strategy to recruit and train a new generation of horticultural entrepreneurs

and skilled, motivated workers. The new Institute for Agriculture and Horticulture (TIAH), due to launch in 2023, will be a first step towards professionalising the sector by providing bespoke horticultural training for new entrants and continuing professional development opportunities for existing growers. TIAH will be a membership organisation, and is currently in development following initiation by the AHDB. TIAH's approach of signposting members along individual training pathways has the potential to offer the necessary flexibility and specialism required by a sector as diverse as horticulture. However, the potential for such a professional body to raise the sector's status will not be realised unless it is embedded in a wider restructuring of the sector and its supply chains, to ensure that growers are able to run profitable, resilient businesses which are supported to invest in their workers. Furthermore, without making horticultural careers more attractive in the first place, the demand for TIAH's services will be limited to a dwindling pool of existing growers. With younger people prioritising environmental stewardship in their career choices, recruiting businesses will need to demonstrate that their workplace is addressing pressing environmental concerns if they wish to make themselves attractive to new entrants.

As part of its advocacy work, the Landworkers' Alliance calls for a 'Horticulture Renewal Programme', in which recruitment and training form part of a wider framework which also supports new growers to access land, infrastructure and equipment; helps existing growers to improve efficiency and sustainability; and, most importantly, addresses supply chain fairness through a variety of distribution models. Short, farmer-focussed supply chains, which award a greater percentage of the sale price to the grower, are better able to support a thriving horticulture sector. Unless

businesses are able to make a sufficient margin to invest in good working conditions and environmental innovation, they are unlikely to attract a new generation of motivated workers, for whom quality of work life is often as important as pay.

Innovative approaches to recruit and train tomorrow's growers: five case studies

Grounders – An initiative aiming to “turn young heads towards the food and farming sectors”

Grounders has grown from an experiment, designed in response to the government's unsuccessful 'Pick for Britain' campaign³⁴, to find out whether combining a seasonal job in soft-fruit picking with food/careers education and a residential experience, could attract young people to consider further work in horticulture. Ten young adults, with no previous experience in food and farming, were offered paid work strawberry picking. They lived in caravans among 200 overseas workers, learned about the horticulture business, gained empathy for food producers and built relationships with a culturally different workforce. Alongside the picking work, they were given presentations about the business, learnt about the wider soft-fruit industry and enjoyed the social side of living

How do you learn to be a fruit and veg grower?

Horticultural training is offered by a mixture of county agricultural colleges, universities, private colleges and social enterprises. The courses and programmes on offer range from practical traineeships and vocational courses to academic degrees. At present the training offered is quite fragmented, with no official list of courses or providers, although the Ecological Land Cooperative fills this gap with a list at <https://ecologicaland.coop/resources/courses-and-apprenticeships>. The new Institute for Agriculture and Horticulture aims to create a clear pathway to appropriate training for new entrants who join the Institute. The AHDB's edible horticulture skills survey lists 33 institutions (including 17 county agricultural colleges, 13 universities and 3 private institutions) mentioned by respondents as training providers – but the list may not be exhaustive. For those interested in organic or agroecological growing, the information here provides a snapshot of the sort of training available.

One- and two-year vocational (City and Guilds or other), accredited training courses in organic, regenerative or biodynamic horticulture are run by six different colleges or social enterprises (OrganicLea; Biodynamic Agricultural College, Kindling Trust, Apricot Centre, School Farm CSA and Black Mountains College). These often involve a work placement.

Several 'mainstream' colleges offer courses which are either focused on organic practices or include them: the Horticultural Correspondence College, Hereford and Ludlow College, Capel Manor College, Bicton College and Plumpton College.

Five 'farm-start' programmes currently exist around the UK, with about five farm-starters per farm involved each year.

Shorter courses of just a few days' length are also available. For example, organic certifier Organic Farmers & Growers, in collaboration with independent awarding body BASIS and agronomy advisers Abacus Agriculture, runs some courses that cover horticulture. Short courses are also run by the land-based training body Lantra's Tyfu Cymru (Grow Wales) (on 'Diversifying into Horticulture'); by the Community Supported Agriculture network (on 'Setting up and scaling up a CSA'; and by individual market gardens and networks. Trill Farm Garden offers an 'Introduction to market gardening' and a couple of salad courses.

Informal traineeship networks operate in Wales, South West England and the Thames Valley, supported either by Landworkers' Alliance or independent growers' groups. For example, in Wales LWA has been working with Lantra to pilot the Resilient Green Spaces Wales Future Farmers Network, funded by the Welsh Government. The aim is to teach key skills and connect trainees to the wider network of organic growers in Wales.

There are also online training courses and resources, including: Biodynamic Agricultural College online courses; the Market Gardener Institute; the Neversink Online Market Farming Course; Elaine Ingham's Soil Food Web School; Michael Kilpatrick's Small Farm University; Ben Hartman's Lean Market Growing Masterclass; and (from Sweden) Richard Perkins' Making Small Farms Work and Permaculture Design Course. For a taster, the website <https://wwof.net/> has details of volunteering opportunities on organic farms. There is also a huge volume of free farming videos on YouTube.

in a rural farming community. A follow-on project is in development, which will include more education about the diverse range of opportunities and skills required for a career in the horticulture sector in response to the limited knowledge the young people displayed about 'farm to fork' issues.

OrganicLea – A peri-urban pathway into horticulture

OrganicLea is a workers' co-operative which runs a market garden on the outskirts of London on 12 acres of land rented from the council. Its one-acre glasshouse, vegetable beds, orchard, vineyard and salad garden, bordering the suburb of Chingford, offer a range of opportunities for urban dwellers to spend time in a beautiful green space. Each week the co-op hosts over 100 volunteers, keen to learn about organic growing, be part of a friendly community and contribute to a movement seeking to provide healthy, sustainable and accessible food to local people. Since 2009, OrganicLea has been delivering courses in City and Guilds Levels 1 and 2 Horticulture, and many of its students have progressed seamlessly from the volunteering that first whetted their appetite for growing. Much of the very practical teaching is integrated with the production, which contributes to a 650-box delivery scheme. The Level 2 qualification prepares students for earning a living from horticulture, and many go on to work in rural market gardens, or other urban or therapeutic growing operations.³⁵

Landworkers' Alliance South West Traineeship Network

The traineeship network arose from a need identified by both trainee hosts and trainees for a body to support the informal arrangements between growers

and aspiring market gardeners which have emerged in recent years. These six-month to two-year placements vary from farm to farm, with differing working hours, rates of pay, in-kind reciprocity (accommodation and produce) and proportions of formal as opposed to 'on the job' training. The traineeship network enables trainee hosts to compare what they offer and expect from trainees and share training materials. A trainee syllabus is being created, to provide teaching structure and a measure of standardisation in the level of competency that a trainee might reach. The network also provides several training weekends each year, at which trainees gather for combined teaching and visit different farms in order to broaden their perspective on organic growing.³⁶

Manchester FarmStart – A stepping stone into market gardening

The Kindling Trust runs two models of farm-start, one for people with little experience of commercial growing and one for people with more confidence. In the first, farm-starters spend two days a week working alongside an experienced grower employed by Kindling Trust, who provides in-field training and takes responsibility for the planning and selling of the produce. The costs of seeds, compost and materials are covered by Kindling Trust, but they also keep all the money from selling the produce, to cover these costs. Participants might after two-to-three years move on to the second model, where they have more autonomy and responsibility. Here they are allocated one-third or one-quarter of an acre of organic land on a site rented by Kindling Trust. The Kindling Trust provides tools and infrastructure such as water, and the whole two-acre site is certified organic. However, each participant has to keep their own documentation to feed into the Soil Association inspection as part of their training. People

buy their own seeds, crop covers and other materials, but keep all money made from selling crops.³⁷

Tyfu Cymru (Grow Wales) – A one-stop shop for horticulture training, advice and capacity building

Since 2017 Tyfu Cymru has been working with supply chain partners to prepare both ornamental and edible horticulture businesses to adapt to environmental and economic challenges. It is funded by the Welsh Government, through the Rural Development Programme 2014-2020, and run by the land-based training body Lantra. So far, they have delivered over 1000 training days and engaged with over 1000 horticulture professionals across Wales and beyond. They offer fully funded training and advice to any business willing to undertake their business review, and work closely with a network of specialist training providers. Recent courses have covered cultivation of crops for seed, soil health for commercial growers, composting and no-till soil building, and integrated pest management, while they also offer standard training in areas such as first aid, digital marketing and financial management.³⁸

Conclusion: It's time to invest in our growers of the future

The Government Food Strategy, for all its disappointments, does contain some comfort for the nation's beleaguered vegetable and fruit growers. There is recognition that horticulture is a sector with potential for growth, and that it is in the throes of a labour crisis.

The new Institute for Agriculture and Horticulture, due to launch in 2023, will provide some help for farmers and growers seeking to access skills. But it is the promise of a 'world leading horticulture strategy for England' that offers the greatest opportunity for systemic change.

Nothing less than a bold, cross-departmental strategy, supported by the UK's four nations, is needed to expand and strengthen the domestic horticulture sector to meet current and future demand. *The Plan* pointed out that before the pandemic, the government spent £130 billion on the NHS every year, of which 95% was spent on treating illness and just 5% on preventative measures. It argued that it would be cost-effective to focus spending on ensuring that fewer people reached the stage of requiring expensive medical care, by making interventions to increase production of and access to fresh produce. The benefits of a strong horticulture sector reach beyond Defra to the Department of Health and Social Care, HM Treasury and the NHS, and an effective horticulture strategy will involve multiple government departments.

We need a horticulture strategy that simultaneously addresses current labour shortages and starts immediately on the longer-term effort to invest in the horticultural workers and entrepreneurs of the future. The initiatives set out in the case studies above show what can be done to recruit, train and support new and existing growers, but their impacts are limited by short-term and piecemeal funding. To achieve an increase in horticulture production to match the 30% increase in consumption necessary to have an impact on public health, these efforts must be scaled up, adequately funded and prioritised in policy. The time has come for a horticulture strategy that sets out to change the culture around horticulture so that it becomes a desirable and accessible career for people from all backgrounds.

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Since completing an MSc in Sustainable Agriculture at Wye College over 20 years ago, Rebecca Laughton has combined work as an organic farmer and grower with research and advocacy for small- and medium-scale agroecological producers. She is the author of *Surviving and Thriving on the Land: How to use your time and energy to run a successful*

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The Food Research Collaboration is an initiative of the Centre for Food Policy. It facilitates joint working between academics, civil society organisations and others to improve the sustainability of the UK food system, and to make academic knowledge available wherever it may be useful.

We are grateful to the Esmée Fairbairn Foundation for funding our work.

Please cite this Insight as:

Laughton, R. (2022) *Eat more vegetables! Grow more vegetables! But who will grow the vegetables?* Food Research Collaboration Policy Insight.

ISBN: 978-1-903957-70-7