

Mapping of existing horticulture training provision (and current sector requirements)

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Prepared for

Resilient
Green Spaces
Mannau
Gwyrdd Gwydn



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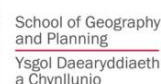
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1. Introduction

1.1 This report summarises the findings from qualitative research conducted in summer 2022 into skills and training in edible horticulture in Wales. The research was commissioned by LANTRA in partnership with The Landworkers' Alliance, Cardiff University and Cae Tan CSA and is part of Workstream 6¹ of the Resilient Green Spaces project².

Resilient Green Spaces is a £1.27m partnership project being led by Social Farms & Gardens to pilot alternative re-localised food systems using communities and their green spaces as the driving force for change across Wales until June 2023.

This project has received funding through the Welsh Government Rural Communities – Rural Development Programme 2014-2020, which is funded by the European Agricultural Fund for Rural Development and the Welsh Government.

Lantra are using their unmatched knowledge and experience of horticulture training in Wales to develop a pilot training package covering the skills needed to run horticultural farming businesses. Training will be delivered in partnership with Cae Tan CSA and The Landworkers Alliance. Cardiff University Sustainable Places Research Institute are countering negative perceptions of careers in horticulture farming through creative engagements with young people.

1.2 The purpose of the research is to identify existing training in edible horticulture in Wales (both formal and informal) and how this provision fits with current skills needs in the sector, with a view to identifying gaps in provision and future priorities.

1.3 The rest of the report is structured as follows:

- Section 2 outlines the approach to the research including details of modifications to the originally proposed method.

¹ Building Horticultural Future Farming Skills

² Resilient Green Spaces is a £1.27m partnership project led by Social Farms & Gardens to pilot alternative re-localised food systems using communities and their green spaces as the driving force for change across Wales until June 2023.



- Section 3 summarises some of the current key trends in edible horticulture.
- Section 4 describes the extent of skills needs in the sector and the specific areas and stakeholder groups in which skills gaps are most apparent.
- Section 5 documents stakeholder views on the importance of training in edible horticulture and scope of existing training in the sector.
- Section 6 focuses on next steps and priorities for skills development and training in the edible horticulture sector.



2. Approach

Original method

2.1 The initial intention had been to carry out a largely quantitative mapping exercise, calculating the number of relevant learning programmes and awards delivered in Wales, where this training is being delivered and the numbers of learning accessing it³. This would be supplemented by a small number of scoping interviews with relevant stakeholders, to understand the nature of supply and demand and the wider context to skills and training in edible horticulture. This approach proved unfeasible for two key reasons:

- It was not possible to secure the necessary data from the Skills, Higher Education and Lifelong Learning department within Welsh Government to map current learning activity in the intended way, i.e.: Learner Dataset⁴, Learning Provider dataset⁵, Learning activity dataset⁶ and Awards dataset⁷.
- Identifying provision that focuses specifically on edible horticulture (as opposed to ornamental horticulture, for example) is not possible without detailed review of every course specification, which was not within the scope of the available resource for this study.

2.2 Furthermore, initial scoping interviews revealed that a substantial proportion of learning and knowledge transfer in the sector happens informally, through mentoring and advice offered via sector bodies and the third sector, which would not be captured in a desk-review of formal, accredited qualifications.

Revised approach

2.3 Given these challenges the decision was taken to carry out a primarily qualitative study, involving interviews with a wider range and larger number of stakeholders, alongside an online stakeholder survey to extend the reach of the research.

³ To include training up to level 4 and non-accredited courses, delivered via Work-Based Learning, FE and ACL.

⁴ For ULR, postcode, age and gender and possibly ethnicity.

⁵ To link learners to a provider.

⁶ To link learner to provision and location.

⁷ To understand completion rates and underlying data



2.4 This included interviews carried out by telephone or MS Teams with ten stakeholders including representatives from:

- Soil Association
- Social Farms and Gardens
- Horticulture Wales
- Land Workers Alliance
- Cardiff University
- Further Education
- Existing growers.

2.5 In addition, an online survey was disseminated via the emailing lists of stakeholders included in the qualitative interviews as well as to contacts shared by LANTRA. Twelve people submitted a response.



3. Current trends in edible horticulture

Escalating interest in growing commercially

- 3.1 A key development in the edible horticulture sector has been the marked increase in people wanting to grow commercially. This was the most commonly cited trend by those completing the survey, noted by nine out of twelve respondents. Land Workers Alliance (LWA) has seen a 30 per cent increase in membership in recent years, the Community Supporting Agriculture (CSA) Network has experienced a similar growth and Social Farms and Gardens (SFG) are increasingly supporting community projects to become more commercial.
- 3.2 Much of this interest is from people entirely new to agriculture who choose horticulture over livestock because it is cheaper in terms of set-up costs and land requirements and potentially more straightforward: “[with horticulture] you’re not dealing with abattoirs, food hygiene, the supply chain is much easier.” (Grower) Furthermore, new entrants may also have experience of growing their own fruit and vegetables and the shift reflects the wider growth of plant-based diets and concerns over the carbon footprint of red meat. Many of these new entrants are career changers, looking for an alternative lifestyle. The focus of growing is on higher value crops – salads, beans, courgettes, tomatoes and soft fruit etc, with less capacity to grow field scale root crops and cereals.
- 3.3 There are two key issues with this trend, however:
- Firstly, most of the growth is in small and micro businesses, many of which are reluctant or unable to scale and hence contribute mainly to the local market, rather than the wider food supply chain: “people are going into half-to-one acre [holdings], when what we need is 50 acres to feed communities and overcome issues around supply chains.” (Sector body)
 - Secondly, this influx of new edible horticulture enterprises is not matched by increased interest in and demand for training; people are coming into the sector expecting to ‘learn as they go along’, experimenting through trial and error or using informal learning from You Tube or other internet sources. Here is a risk that this threatens the long-term success of a fledging business: “[there’s a] perception that you don’t need learning, but actually as you reach a point of running a business, you realise you DO need training. I wonder whether we’ll see a wave of these businesses failing or seeking training.” (Support agency)

Increased consumer demand for local food

- 3.4 All survey respondents (11 out of 12) reported a growth in consumers wanting to buy fresh, local food. The COVID-19 pandemic has been a major catalyst for this, adding to an already growing demand for fruit and veg boxes, although this has abated a little with the lifting of lockdowns.

- 3.5 The research suggests that existing suppliers may not be able to meet much more of an increase in demand, which is very likely to occur with rising fuel costs and disrupted international food supply chains: “demand for box schemes has gone through the roof – demand has been met by upping production, but the sector is now at capacity, so meeting any further demand will require new entrants.” (Grower)
- 3.6 The healthy food agenda is also playing a role in this trend, but stakeholders have been critical that policy makers are not recognising the need to invest in supply as well as boosting demand: “From government, [there’s] been a big drive to increase consumption of fruit and veg, but not enough investment in the sector – i.e.: where this [food] is going to come from.” (Sector body)

Labour shortages

- 3.7 A widely acknowledged key concern for the sector is a declining labour market, particularly in terms of skilled workers; an issue that was recognised by two-thirds of survey respondents. This is attributed to Brexit and to a lesser extent the pandemic. The loss of many overseas workers has been compounded by a decline in the number of young people entering the industry as employees: “UK youngsters won’t replace the jobs of Polish fruit pickers – they want to be bloggers etc. They want an easy life.” (Grower)
- 3.8 Fewer school leavers are choosing to pursue horticultural courses in FE colleges and many of those who do are choosing it as a ‘last resort’ and are not motivated to work in the sector afterwards. Growers report that as well as lacking technical skills, people who are available to work frequently lack the right work ethic: “Many can’t do a full day’s work. They aren’t very fit – it’s attitude more than anything else.” (Grower)
- 3.9 This has limited the scope for existing growers to expand and some have even cut back on production given the lack of suitable staff.

Increased interest in organic and regenerative techniques

- 3.10 The majority of both survey respondents and interviewees cited an escalation in interest in agroecological horticulture, typically on a small-scale. The horticulture sector has historically had a higher proportion of organic certified producers than other agricultural sectors and there has also been an increase in growers adopting organic principles even if they have not gone for full certification.
- 3.11 The issue of certification is interesting, in that many smaller scale growers rely on local reputation and a direct relationship with their customers. These growers effectively open source their growing – allowing customers to visit and witness how things are grown - and hence favour transparency over certification.

3.12 Linked to this trend is a widespread concern about sustainability and climate change, interest in building resilient short supply chains, the need to become more self-sufficient in UK-grown produce and to reduce the carbon footprint of our food.

Additional trends in edible horticulture

3.13 Other, less-commonly noted trends in the sector include:

- Growing numbers of small-scale CSA and social projects, aimed at supporting wellbeing as much as food production
- Specific techniques, including 'No Dig' and vertical growing
- People coming into the sector with high level qualifications⁸ but not in horticulture specifically.

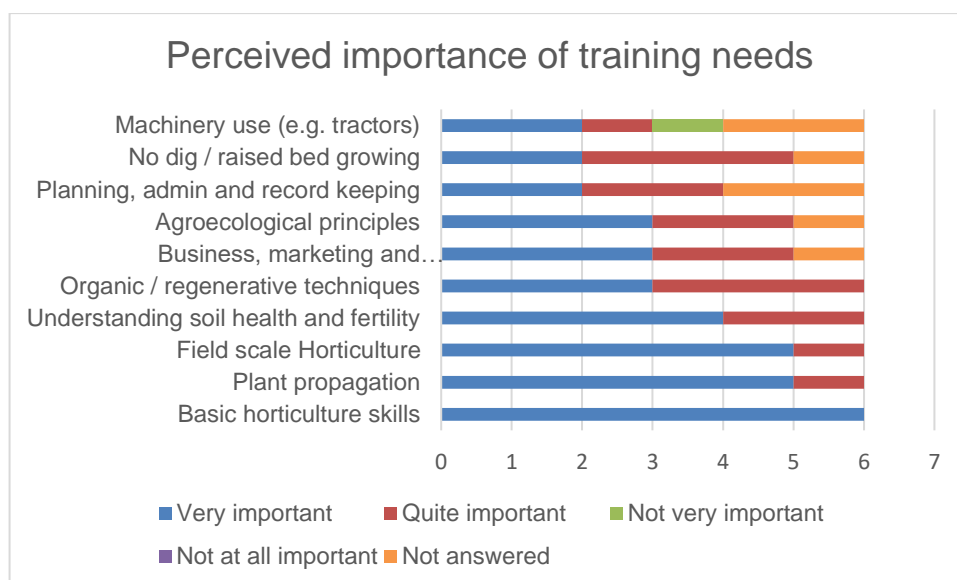
⁸ A recent survey of LWA members found that 77 per cent had a degree level or higher qualification but only a fifth (21 per cent) had an agricultural qualification specifically at Level 2 or above.

4. Skills Needs in Edible Horticulture

Extent of Skills Needs

- 4.1 Amongst survey respondents there was a universal perception of existing skills needs in the sector; five out of 11 reported the lack of skills in edible horticulture in Wales as 'very significant', and six out of 11 as 'significant'.
- 4.2 A key issue is the mismatch between the level of skills and experience that people wanting to work in the sector have and what is actually needed by growers seeking staff. For example, there are many keen, new entrants who have been through a six- or twelve-month traineeship, who then struggle to find work because employers are looking for staff at a higher level, for instance those with the skills to become head growers.
- 4.3 There is also a shortage of appropriate formal training courses in Wales, meaning that most people entering the sector acquire skills through practical routes like traineeships and even just volunteering. Others – particularly those looking to start a business – will rely heavily on YouTube and online advice and guidance but there are pitfalls with this; the programmes are not always specifically relevant to the UK and are not quality assured.
- 4.4 Nonetheless, many stakeholders caveated their comments with the point that their perception was only anecdotal and not backed up by formal evidence. This was reinforced by those who have been involved in research in this area who reported that there is not sufficient data to accurately quantify skills needs in the sector. Part of the problem is a lack of clarification on what is meant by skills needs – hard to fill jobs, for example, can relate to wider labour supply issues or unattractive pay and conditions as well as gaps in specific skillsets or a lack of relevant qualifications.

Scope of Skills Needs



Source: Horticultural Training Mapping survey, 2022, Q3: *How would you rate the following training needs in terms of importance?*

- 4.5 Specific areas of skills needed within the sector tend to fall into one of three main groups:
- Technical growing skills, including many of those identified in the table above, as well as:
 - Irrigation and water management
 - Crop planning and crop rotation
 - Composting
 - Pest and disease management
 - Business management, human resources and marketing, including:
 - Business planning, calculating inputs versus yields
 - Accessing markets and shortening supply chains
 - Managing volunteers and working with trainees.
 - High-tech skills, such as:
 - Hydroponics
 - Precision horticulture
 - Vertical farming / urban farming.
- 4.6 A cross-cutting issue that relates to a range of factors beyond simply skills is the shortage of growers who can grow at field scale and who can therefore offer skills development and training placements on large- and medium-scale farms. This means that there is a significant skills gap in machinery use, for example using a field-scale planter or chainsaw: “you can’t learn how to drive a tractor from reading a book.” (Grower)
- 4.7 The type of skills gaps and the catalyst for and effect of these gaps differ for different areas of the workforce. For new entrants, most if not all of the specific skills listed above can be lacking, depending on the quality and breadth of experience they have had via a work placement or traineeship. For example, a farm may only take them on for March to September, precluding experience of the sector in the winter “down season”.
- 4.8 Existing farmers – for example livestock farmers wishing to convert or diversify into edible horticulture – are likely to lack not only the technical growing skills but an understanding of routes to markets and supply chains, as well as the equipment for planting, harvesting and storing crops.
- 4.9 For experienced horticulturalists, who may have taught themselves much of what they know and acquired growing skills “on the job” but are now looking to expand production, the main issues can be around keeping up with innovation, distribution beyond the immediate local market, using social media and digital marketing.

5. Training in edible horticulture

Importance of training

- 5.1 All survey respondents considered formal training for edible horticulture as important (four out of seven) or very important (three out of seven) and interviewees were unanimous in seeing the value of training, particularly for those new to the sector.
- 5.2 The general consensus was that a combination of hands-on work experience and some formal learning is optimum. In reality, many people come into the sector and learn 'on the job' but this can lead to (often expensive) mistakes being made: "you can learn as you go along but takes time to learn about soil science, plant health ... if you have training beforehand you can be successful from the start." (Sector body)
- 5.3 For new entrants, in addition to acquiring essential knowledge and skills, formal training provides credibility to prospective employers: "shows some form of dedication that you've taken the time to learn and you're serious about it rather than someone being like 'Oh well, I like growing veg in my garden'". (Grower)
- 5.4 Training – both formal and informal – can also support network building and ongoing peer support, which can be invaluable in the early days of establishing a business or seeking employment in the sector: "I learnt so much having formal training and working with someone with experience in the sector. [It] gave me a bigger understanding of the sector and helped me network – I'm still in touch with the cohort I went through training with." (Grower)
- 5.5 For experienced growers, training and CPD is important for keeping up with technological developments and policy changes that will affect their business, for example the removal of peat by 2027.

Existing training routes

Apprenticeships/traineeships

- 5.6 Two-thirds of survey respondents identified apprenticeships and work-based learning as one of the most common routes for accessing edible horticulture training for new entrants. Nonetheless, more in-depth discussions with stakeholders suggest that formal – accredited – apprenticeships are scarce and therefore it is possible that those completing the survey were referring to more informal traineeships, which are offered by some commercial growers and Community Supported Agriculture initiatives (CSAs) across Wales.

- 5.7 Data from Stats Wales⁹ shows 30 apprenticeships in horticulture in Wales for the year 2020/21, of which 20 were at Level 2 and 10 at Level 3. However, data is not available for whether these were in edible or decorative horticulture.
- 5.8 Between 2007 and 2018 the Soil Association ran the Future Growers programme, which trained more than 120 apprentices in sustainable fruit and vegetable production. It started as a two-year programme, where apprentices had a two-year employment contract on a host-farm and attended a structured programme of seminars, workshops and networking opportunities delivered by the Soil Association over weekends. Apprentices gained a minimum wage job, year-round experience of working on a farm as well as formal training and mentoring.
- 5.9 The programme stopped running in 2018 for two main reasons:
- Funding: despite the programme being subsidised, trainees had to pay £2,000 to participate – a fee that was prohibitive to some. When the subsidy ended, programme fees became unaffordable to apprentices who were only earning the minimum wage.
 - Lack of host farm capacity: host farms could no longer afford taking on (paid) trainees during quiet months.
- 5.10 Despite introducing a shorter, one-year, and subsequently a six-month intensive programme to reduce the burden on host farms, the programme was found to be financially unviable.
- 5.11 Cae Tan CSA also runs a Future Growers Programme involving between 12 and 15 trainees based on farms across Wales. Trainees get together on farms for a weekend intensive training programme five or six times a year. There is increasing interest in the programme from prospective trainees who are typically people who have volunteered with the CSA or on other similar projects and are mostly in their mid-late 20s – i.e.: not school leavers.
- 5.12 Nonetheless, the value of a traineeship relies heavily on the quality of trainer – how much attention they give to the trainee, how far they explain the context of jobs needing to be done and core principles and how much they involve trainees in broader business development rather than getting them to complete isolated tasks.
- 5.13 A good on-farm traineeship where this is all provided was deemed by many stakeholders to be far better than a formal qualification for preparing new entrants to the sector.

⁹ <https://statswales.gov.wales/Catalogue/Education-and-Skills/Post-16-Education-and-Training/Further-Education-and-Work-Based-Learning/Lifelong-Learning-Wales-Record/learningprogrammestarts-in-workbasedlearning>

5.14 The main downside of this training route is that the trainee earns little if anything whilst training. In many cases, they might receive accommodation and food and perhaps a stipend, which is not feasible for anyone with caring responsibilities or a mortgage, for example. One option available if taking on 16-24 years olds at risk of long-term unemployment was the former Kickstart Scheme. Funding was only available for the first six months, however, and was not therefore a sustainable source of revenue.

5.15 The other issue is that traineeships are not always valued as highly as formal training. The Small Grants – Horticulture Start Up Scheme that Welsh Government offers does not take into account farm experience as valid training: “a day of accredited Horticultural training counts for more than a year farm experience.” (Sector body)

FE/HE Provision in Wales

5.16 Comprehensive FE data for edible horticulture training was not available from Welsh Government, but there are several colleges which offer courses. As with apprenticeships, it is not possible to determine whether courses are aimed at decorative horticulture (gardening, parks etc) or edible horticulture.

5.17 In 2020/21 there were 605 students on horticulture and forestry courses in Wales, down from 2675 in 2012/13. More than two thirds of students were male.

5.18 Examples of courses available include:

- The Black Mountains College operates a Level 2 Diploma in regenerative horticulture, in association with NPT College
- Bridgend College offers a HND in Horticulture (Production and Design) which includes fruit and vegetable production management and organic horticulture
- Coleg Sir Gar offers an Apprenticeship in Horticulture L2, Practical Horticulture L2 and RHS Principles of Horticulture L2.
- Coleg Cambria provides Levels 1 and 2 certificates in Work-Based Horticulture, which includes aspects of planting, propagating and harvesting crops.

5.19 The majority of those wishing to undertake horticulture courses at FE/HE level are likely to do so outside of Wales, perhaps most likely at:

- Pershore College
- Reaseheath

The new School of Sustainable Food and Farming at Harper Adams University¹⁰ is also likely to provide relevant provision, especially for training in field scale production.

- 5.20 Only one out of the six survey respondents who answered the question considered FE college courses in Wales a common route for accessing edible horticulture training for new entrants. Interviewees similarly reported that few people coming into the sector would have acquired a relevant qualification in an FE college first – or at least not from an FE college in Wales.
- 5.21 The main reason for this is a lack of courses in FE on edible horticulture, with most available qualifications heavily focused on ornamental horticulture rather than fruit and vegetables. Some stakeholders were critical of the lack of hands-on learning in FE, something that is seen as critical to preparation for a career in the sector.
- 5.22 From the perspective of the colleges, it is a challenge to make it economically viable to offer courses in edible horticulture: “it’s expensive to deliver ... need equipment like glass houses and don’t have numbers of students to make it cost effective ... also a lack of growers who operate at the scale to offer placements.” (FE Representative)
- 5.23 Those teaching in FE colleges noted that the type of students taking these courses are not necessarily looking to work in the edible horticulture sector in any case. Many on introductory courses have learning disabilities or poor attitude or behaviour “or been round other courses and just don’t want to work – they take it as last resort.” (FE Representative)
- 5.24 This is potentially a reflection on the perception of edible horticulture in schools, where it is not seen as attractive career option: “It’s almost seen in schools as the naughty kids do gardening.” (FE Representative)
- 5.25 The students who take higher level courses – for example the HND in Horticulture – Production and Design in Bridgend College – tend to be mature students, often looking for a career change and who are more likely to go on to work in the sector.

Learning and support from sector organisations

- 5.26 An important source of informal training and skills acquisition is from some of the main sector organisations who have existing relationships with employers and in-depth knowledge of the sector. Although what they offer is typically

¹⁰ <https://www.harper-adams.ac.uk/news/203640/uks-first-school-of-sustainable-food-and-farming-set-to-be-created-at-harper-adams>

informal and/or small scale, it is critical both for those coming into the sector and existing growers.

- 5.27 Land Workers Alliance runs the Farmstart network across the UK, which provides people with the opportunity to access training and on-farm work experience. The network includes one Farmstart in Wales - Mach Maethlon in Machynlleth, which received funding from Rural Development Programme 2014-2020 to run the “Pathways to Farming” an initial three-year pilot that offered training in agro-ecological food production to approximately ten trainees per year¹¹ between September and June.
- 5.28 Many interviewees referenced the Tyfu Cymru Project, which is also supported through the Rural Development Programme 2014-2020, is run by Lantra Wales and has provided industry specific support and training to the horticulture sector in Wales since 2017. Stakeholders felt that the project had received good take-up and was flexible to the needs of Welsh horticulture businesses.
- 5.29 Several people felt that awareness of Tyfu Cymru across the sector could be better; one individual described attending an event at the Institute of Biological, Environmental & Rural Sciences just before the start of the pandemic where “lots of people didn’t know they [Tyfu Cymru] exist.”
- 5.30 This issue was broadened out to other Wales-specific sources of support and resources: “Tyfu Cymru, Horticulture Wales etc ... they are not the first place people would go ... not sure why – maybe people are not aware of it.”
- 5.31 Since stopping the Apprenticeship referred to above, the Soil Association was considered to provide more advice and guidance rather than training. Similarly, although Farming Connect provides some CPD, it was seen to be more focused on livestock than horticulture and also associated with traditional methods of farming rather than agroecological, which is increasingly the trend in edible horticulture.

On the job / informal learning

- 5.32 In addition to structured, on-farm traineeships, many people come into the sector via working or volunteering and acquiring knowledge and skills as they go. Two out of six survey respondents cited this as a common source of training for new entrants.
- 5.33 It is a more casual way to learn and places less pressure on participants, particularly those who are volunteering and potentially have mental health or substance misuse problems: “A lot of people like informal learning on the job,

¹¹ <https://www.machmaethlon.org/train-in-food-production-with-us/>

mentoring, experiential side of learning from others – especially if they didn't have good experience of school.” (Grower)

- 5.34 Nonetheless, there are obvious downsides to this approach; what is learned on the job or volunteer placement is dependent on what the existing grower or mentor knows themselves and this may not be up-to-date or efficient. Similarly, this type of learning is unlikely to provide some of the skills beyond practical growing that are essential to starting a business, for example knowledge of health and safety and business planning.
- 5.35 There are also risks of exploitation, given that there is no quality assurance of the mentoring received or guaranteed minimum wage, which comes with, for example, an Apprenticeship or structured traineeship.

Online resources

- 5.36 The final way in which new entrants and existing growers acquire skills and knowledge is via online resources and information, in particular videos on YouTube. North American growers in particular have acquired almost “cult celebrity status”, writing books and blogs on their business model and their growing techniques; whilst a good source of inspiration, the different climate and commercial context means that some of these approaches may not be transferable to Wales.
- 5.37 Cae Tan CSA ran an online ‘grow your own CSA’ training that was fully subscribed and is set to be repeated; the UK Organic Gardeners Facebook page was cited as a well-used source of peer support and grower-to-grower knowledge exchange.
- 5.38 The Growing the Future project at the National Botanic Garden of Wales offers a range of online courses in different aspects of edible horticulture – many of them available in Welsh.

Barriers to accessing training

- 5.39 Stakeholders identified the following as key barriers to training and skills acquisition in edible horticulture:
- Cost (noted by four out of seven survey respondents) – this can be in terms of the inability to pay trainees participating in on-farm traineeship and the challenge for those on formal training programmes to pay course fees and fit in employment around a full-time course.
 - Linked to cost is the issue of time (also identified by four out of seven survey respondents) – growing skills are not acquired overnight and require year-round experience, which may necessitate taking time out of current employment for new entrants. For existing growers, accessing CPD means time away from their crops: “people who are growing need to focus their time on actually growing.”

- Location was considered a barrier by one out of seven survey respondents, particular for on-farm traineeships where farms may be isolated and therefore distant from friends and family. There is also an additional cost implication of travelling to remote farms.
- The quality of training available was also considered a barrier by one out of seven survey respondents. This is more of an issue for informal traineeships, where there is not necessarily a guarantee of quality or coverage of all relevant knowledge and skills. In the worst cases: “some people have been exploited [by farms offering traineeships], basically used as just free labour.”
- Apathy and fear of change: for existing growers who may have entrenched ways of doing things, particularly those working in isolated circumstances, there can be reluctance to learn about new ways to improve or streamline their business.
- Lack of awareness of opportunities available: as already noted, whilst a lot of support to develop skills and knowledge is available, existing growers and new entrants alike do not always know where to go or who to ask.

Availability of training through the medium of Welsh

- 5.40 The majority of stakeholders were unaware of the extent to which training in edible horticulture is available in the medium of Welsh; most people surmised that Welsh medium provision was likely to be minimal. In FE, small numbers (one or two per year) of Welsh-speaking students take horticultural courses but typically they are happy to – or even prefer – to be taught in English.
- 5.41 The Welsh qualifications database shows that there are 60 approved horticulture qualifications available in Welsh, compared with 160 in English.
- 5.42 The availability of Welsh language mentoring and training on on-farm traineeships would be dependent on whether mentors and trainees speak Welsh.
- 5.43 Several stakeholders noted that in the event that significant numbers of livestock farmers – many of whom are first-language Welsh speakers – diversify into horticulture, training in the medium of Welsh will be essential to support this transition.

Effect of COVID-19 on training

- 5.44 The effect of the COVID-19 pandemic was unsurprising. Within FE, courses became – at least during periods of lockdown – entirely online and therefore theory-based. This meant that practical learning was left until the end and was therefore rushed. When face-to-face learning was reintroduced, it was necessary to have smaller cohorts, so it became more expensive to deliver and reduced opportunities for informal peer-to-peer learning and networking.

- 5.45 Fieldtrips were also stopped at a detriment to the quality and scope of the training.
- 5.46 Nonetheless, there were also advantages associated with the pandemic. The shift to online learning removed some of the logistical barriers of attending training – such as the need to travel and to find childcare. For less confident learners signing up to a course delivered via Zoom, for example, can be less daunting. It also creates an opportunity for further discussion between learners: “[the shift to online learning] was a big boost for online interaction.”

6. Future priorities

Increasing the size of the sector

- 6.1 A key priority for the sector is to recruit – and to a lesser extent, retain – people in the sector, if production of Welsh edible horticulture is to expand: “We’re at capacity in terms of what current producers can produce. Maybe we need to be considering livestock producers produce vegetables.” (Grower)
- 6.2 Data from the 2021 Agricultural Survey for Wales shows that there has been a long-term decline in the use of land used for horticultural production, with the exception of commercial orchards. Land use for vegetables and salads in the open declined by more than 30%, with a similar decline in the area used for greenhouses.

Table 1 Land use in Wales: Horticulture 2001-2021 (Hectares)

Land use	2001	2006	2011	2016	2021
Potatoes	3,032	2,026	2,539	3,140	2,341
Vegetables & Salad grown in the open	429	420	456	458	298
Commercial orchards	300	260	358	356	336
Glasshouse	34	41	38	28	24

Source: June 2021 Agricultural Survey

- 6.3 Access to land is a critical part of this and is about matching landowners looking for tenants and new entrants looking for land. There is also a planning component to allow for housing to be built to enable growers to live close to their crops. The Our Food 1200 project, based on Crickhowell¹² seeks to ease this challenge: linking farmers to growers and identifying hosts for traineeships, as well as offering advice on planning and lease issues. The Community Land Advisory Service¹³ also provides some support in this area. Scope also exists for quality temporary accommodation for horticulture workers to be designed and built using sustainable Welsh timber. Wood Knowledge Wales could support this.
- 6.4 There is a need for better marketing and promotion of horticulture as a sector and possible career choice. One FE college, for example, had to rebrand its horticulture course as “landscaping”, “because people don’t understand what

¹² <https://ourfood1200.wales/>

¹³

<https://www.farmgarden.org.uk/clar#:~:text=Managed%20by%20Social%20Farms%20%26%20Gardens,ongoing%20support%20from%20Welsh%20Government.>

horticulture means.” The sector needs to have higher profile in the media, so it is seen as an attractive profession: “we need a change of mindset and marketing in terms of how we value horticulture.” (Grower).

- 6.5 Many stakeholders focused on the importance of more promotion in schools and the need to educate the next generation to understand that expanding the Welsh horticulture sector is central to reducing food miles and localising the Welsh food supply chain: “sustainability and the environment is high on everyone’s agenda right now, particularly young people, so [edible horticulture] needs to be sold to people as a career path.”
- 6.6 Whilst there is already some engagement at primary school level, it needs to be more prominent at secondary, when students make choices about what they want to do in the future, as well as post-compulsory education: “we need to talk to people who are already in the sector, JCP, schools and Careers Wales.”
- 6.7 It’s also about attracting capable students and not just those who see growing as an easy option: “when we [a sector organisation] have gone into schools, we’ve seen some really keen students, but I think most able students are encouraged to more academic routes.”
- 6.8 Nonetheless, some stakeholders doubt the effectiveness of promotion and engagement activity unless something is done to improve the profitability of the sector: “Quite often people will say we need more growing on the curriculum, but that isn’t going to cut it ... you can’t separate the skills issue from making growing more viable, more profitable.”
- 6.9 One grower remembered the start of his career being “quite intimidating” in terms of whether he would make enough money to survive, particularly given that there are “so many bad examples of businesses.”
- 6.10 There is significant call for government funding at all levels – capital grants for new entrants and support for existing growers to expand and livestock farmers or tourism businesses to diversify: “it’s more than just the availability of training ... it’s about being realistic in terms of what people need – and that is financial investment.”
- 6.11 There is a role for community growing initiatives in attracting people into commercial edible horticulture, particularly as these projects often have links to people from disadvantaged backgrounds and therefore have the potential to improve the diversity of people in the sector.

Greater provision of apprenticeships and traineeships

- 6.12 Increasing availability of formal apprenticeships and traineeships is the most critical, specifically skills-related priority for the sector. Part of this is about support to make it affordable for both trainers (i.e.: existing growers) and trainees. Other important factors include:

- Combining an appropriate balance of on-farm practical experience and theory.
- A rotational model to allow trainees to experience a range of different settings
- Effective quality assurance to guarantee that trainers/mentors are investing sufficient time and effort in supporting trainees
- Year-round traineeships to ensure trainees capture a full picture of the sector.
- Inclusion of more than just technical growing skills; traineeships also need to include business management, staff management, marketing etc.
- Training placements with field-scale growers, particularly those who adopt, sustainable techniques: “the good thing about smaller producers is that they are generally doing it sustainably ... the issue is that there isn’t any [trainee] provision with larger growers who are organic or doing agroecological growing.

The proposed Tir Glas initiative at University of Wales Trinity St Davids will incorporate a new centre for horticulture as part of the wider Academy of Sustainable Food. The centre will be in a position to support partners in developing learning with close connections to farmers and growers.

Other priorities

6.13 Other priorities identified through the research include:

- Future proofing: a focus on “skills needed in 2030 not 2022”
- Grant support for organisations that are already providing or developing training programmes: “growers are very happy to share expertise and help the next generation of growers coming up – but ideally we need to reward growers to act as trainers.”
- Investing in supply chains and ensuring that there is a market for produce: “it’s not only about growers but also educating restaurants and consumers on the importance of localised consumption.”
- Move towards mixed farming systems: “facilitating availability of land for growers to use on livestock farms and the logistics of getting agreements in place ... certification issues if [the livestock farmer is] organic, for example.”
- Focus on specific training topics, including:
 - Field-scale growing skills – using machinery – maintenance and operation
 - Setting up a site – polytunnels, irrigation etc.
 - Pest and disease management
 - Managing volunteers and working with trainees
 - Propagation and working in glass houses
 - Business and marketing skills
 - Use of robotics and other high-tech developments.

- Dealing with succession issues.

7. Appendix 1 – List of Institutions Offering FE / HE Courses in Horticulture.

Writtle University College

- Apprenticeships: Horticulture & Landscape Supervisor – Level 3 Apprenticeship
- Horticulture & Landscape Operative – Level 2 Apprenticeship

College Courses:

- Level 3 Advanced Technical Diploma in Horticulture
- RHS Level 3 Certificate in Practical Horticulture
- RHS Level 2 Certificate in Practical Horticulture
- RHS Level 2 Certificate in Practical Horticulture - King's College Cambridge
- RHS Level 2 Certificate in the Principles of Horticulture
- RHS Level 2 Certificate in the Principles of Plant Growth and Development
- RHS Level 2 Certificate in the Principles of Garden Planning, Establishment and Maintenance

Undergraduate courses:

- BSc (Hons) Horticulture
- BSc (Hons) Sustainable Food Production
- New 2023: The Higher Certificate in Urban Horticulture
- Postgraduate courses:
- MSc Horticulture
- MSc Crop Production (Horticulture)
- MSc Postharvest Technology

WCG (Warwickshire College Group)

Distance learning:

- Indoor Plants (Distance Learning - 20 study hours) ACS Certificate
- Fruit and Vegetables (Distance Learning - 20 study hours) ACS Certificate
- Aquaponics (Distance Learning - 20 study hours) ACS Certificate
- Farming and Gardening Vertically (Distance Learning - 20 study hours) ACS Certificate

Pershore College

- Agri-Tech (Horticulture) BSc (Hons) - Full Time 3yrs (19/09/2022 - 16/06/2023)

- Agri-Tech (Horticulture) BSc (Hons) - Part Time 4-6yrs (19/09/2022 - 16/06/2023)
- Agri-Tech (Horticulture) BSc (Hons) Level 6 (Top-Up) - Full Time 1yr (D603) (19/09/2022 - 16/06/2023)
- Agri-Tech (Horticulture) Foundation Degree (FdSc) - Full Time 2yrs (D600) (19/09/2022 - 16/06/2023)
- Agri-Tech (Horticulture) with Foundation Year (BSc) Hons - Full Time 4yrs (D602) (19/09/2022 - 16/06/2023)
- Crop Technician (Container-based) Level 3 Advanced Apprenticeship - 01/08/2022 - 31/07/2023
- Horticulture - Practical Horticulture RHS Level 2 Certificate - 03/11/2022 - 20/07/2023
- Horticulture (Introduction to landscaping and plants) Level 1 Diploma - 06/09/2022 - 23/06/2023
- Horticulture (Landscaping) Level 2 Diploma - 06/09/2022 - 30/06/2023
- Landscape/Horticulture Operative: Level 2 Apprenticeship - 01/08/2022 - 31/07/2023
- Landscape/Horticulture Supervisor: Level 3 Apprenticeship: Flexible start, 36 months

SMB Group – Brooksby Campus

- BTEC Level 2 Technical Diploma in Horticulture – (1 Year) starting 30-08-2022
- BTEC Level 3 National Diploma in Horticulture - (2 Year) starting 30-08-2022
- Land-based Skills Level 1 – (1 Year) starting 30-08-2022
- RHS L2 Certificate in Practical Horticulture new specification – (1 year) starting 12-9-2022 (subject to RHS approval)
- Horticulture Apprenticeship - Horticulture or Landscape Operative Level 2
- Moreton Morrell College
- Countryside Skills - Preparation for Employment - 06/09/2022 - 23/06/2023

RBG KEW

- Kew Diploma in Horticulture (3yrs duration)
- Kew Specialist Certificate in Display & Nursery Glass (1yr duration)
- Kew Specialist Certificate in Ornamental Horticulture (1yr duration)
- Kew Specialist Certificate in Propagation (1yr duration)
- Kew Specialist Certificate in Kitchen Garden Production (1yr duration)

- Kew Specialist Certificate in Rock Gardens & Alpine Cultivation (1yr duration)
- Kew Specialist Certificate in Orchid Cultivation (1yr duration)
- Kew Apprenticeship in Botanical Horticulture (2yrs duration)
- Kew Apprenticeship – Wakehurst (2yrs duration)
- Kew Apprenticeship in Arboriculture (2yrs duration)
- Kew Apprenticeship in Glasshouses (2yrs duration)
- Introduction to Horticulture @ Kew (1yr duration)

All positions above are salaried, with students/apprentices on fixed term contracts of employment.

Teagasc Kildalton College (Ireland)

- Level 5 Certificate in Horticulture: A one year full time course (part-time option also available) that runs from September to May each year. This is a one year introductory course for people interested in a career in the commercial and amenity horticulture industries.
- Level 6 Advanced Certificate in Horticulture: A one year full time course (part-time option also available) for students who have completed the Level 5 Certificate in Horticulture or equivalent. Students choosing this course specialise in one of the following areas: Nursery and Garden Centre, Food Production, Sportsturf or Landscape Design and Construction. Students complete 16 weeks at college and an industry work experience as part of this course.
- Bachelor of Science in Horticulture: A 3-year ordinary level degree offered by South East Technological University in conjunction with Kildalton College. This course is designed to train professional horticulturalists.

Wiltshire College & University Centre

- Level 2 Horticulture, Full-Time, 1 Year, 05/09/2022, Lackham
- RHS Level 2 Certificate in Practical Horticulture, Part-Time, 32 Weeks, 22/09/2022, Lackham
- RHS Level 2 Certificate in the Principles of Plant Growth and Development, Part-Time, 32 Weeks, 23/09/2022, Lackham

Bridgwater & Taunton College

- Plant Botany and Sustainable Horticulture in the Modern World
- Permaculture 2: Design and Construction
- An Introduction to Permaculture I: Principles and Practice (online)
- RHS Principles of Horticulture Certificate (Evening) Level 2 (online)

- Practical Horticulture Skills Level 1
- RHS Principles of Plant Growth, Health and Applied Propagation Level 3
- RHS Principles of Garden Planning, Construction & Planting Level 3
- RHS Horticulture Diploma Level 3
- RHS Practical Horticulture Certificate Level 3
- RHS Practical Horticulture Certificate Level 2
- Understanding Climate Change and Environmental Awareness Level 2
- Horticulture/Landscape Supervisor Apprenticeship Level 3
- Horticulture/Landscape Operative Apprenticeship Level 2
- Horticulture Technical Diploma Level 2

Shipley College

- Full time courses:
- Horticulture Diploma Level 2
- Horticulture Level 2 Apprenticeship
- Horticulture Diploma Level 3 – introduction to horticulture principles and practices

Part time courses:

- Access to Horticulture Work Programme
- Horticulture Level 3
- Horticulture Diploma Level 3
- Next Steps – Level 1
- Full time course: Horticulture Level 2 (Short course)
- Part time courses:
- Horticulture Level 2 Diploma
- Sector-based work academy group 1 – Practical Horticulture Skills Level 1 Certificate

Other colleges

- Derby College
- Moulton College
- Nottingham Trent University
- Derwen College
- South Staffordshire College
- Solihull College & University
- Walford & North Shropshire College
- Easton College
- Oaklands College
- Suffolk New College

- Bedford College group
- Capel Manor College
- East Durham
- Northumberland
- Myerscough College
- Reaseheath
- SRUC
- Borders College Galashiels
- Dundee & angus
- Edinburgh
- Glasgow Clyde
- UHI Moray
- RBG Edinburgh school of horticulture
- Abingdon & Witney
- BCA
- Chichester
- Hadlow College
- Sparsholt
- RHS Wisley
- Bicton college
- Duchy
- University of Gloucester
- Kingston Maurward
- Bath
- City of Bristol college
- Bridgend College
- Coleg Sir Gar
- Cambria College
- Askham Bryan
- Bishop Burton
- University of Sheffield