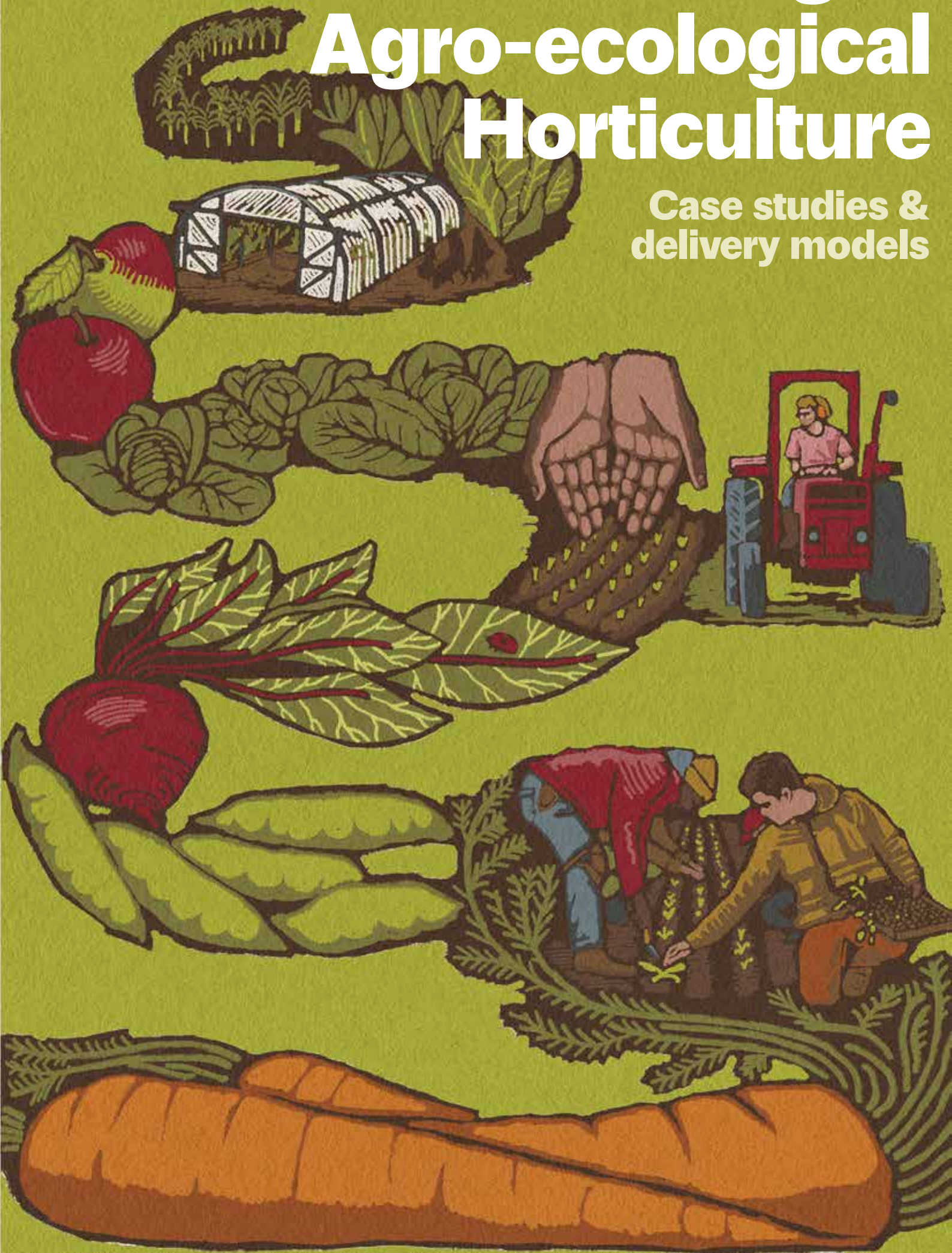


Training in Agro-ecological Horticulture

Case studies &
delivery models



Demand for opportunities to learn how to grow food to agro-ecological principles has never been higher.



Those seeking training often struggle to identify routes in, whilst growers with expertise to share are not always clear how to best support trainees. Through co-operation with educational institutions agro-ecological farming can access financial resources and learning pathways which help assure training quality.

Researchers from Cardiff University, working in partnership with Landworkers Alliance, Lantra Cymru and Social Farms & Gardens, set out to explore what those with experience as trainer or trainee feel is needed for future training provision. Discussions highlighted a need to understand how farmers and growers are working with educators and accredited training

pathways, and how this might become more widespread.

So the team set out to harvest experiences from training delivered in partnership with further education colleges, and other models for formalised learning. Insights from case studies around the UK are shared here: how delivery works, and how others might build on or replicate the model.

Trainers and trainees told us that accredited training is not the only pathway into food growing - supporting future generations of growers requires wide-ranging actions to create varied learning routes. Models highlighted here form part of that landscape.

This project received funding from Cardiff University AHRC Impact Acceleration Account.



Resilient Green Spaces

This training in horticultural farming was piloted by Lantra Cymru and Landworkers' Alliance/Gweithwyr y Tiras as part of a large partnership project led by Social Farms & Gardens. Across two rounds, 29 trainees were hosted on 8 agro-ecological farms around Wales.

The training

Trainees worked with host growers to gain practical experience in agro-ecological horticulture. Each farm recruited their trainee, and was responsible for remuneration. There were no restrictions on who could become a trainee.

Learning

“It has made me feel like getting into growing is an achievable goal.”

Training comprised: at least 5 months on-farm experience (21+ hours a week), 5 webinars delivered by expert trainers, specialist sessions in tractor driving and first aid, and 4 farm visits. It followed a curriculum tailored to running a commercial agroecological horticultural farm, accredited by Agored Cymru. Webinars covered foundational scientific knowledge such as plant biology, soil health and crop planning, plus business planning.

Each cohort visited farms to see different production systems or specific skills such as farm design and crop rotation. These provided opportunities to encounter a range of growers and their expertise. Growers were supported with train-the-trainer sessions, and could adapt training to their farm.

Finances

The project was funded by Welsh Government Rural Communities Rural Development Programme. This paid for staff coordinating the pilot, and training activities beyond work-based learning. This included travel and subsistence for farm visits, and paying those delivering specialist sessions. Trainees' pay when working on farm was the responsibility of individual hosts. Some accessed the government's Kick Start funding enabling them to take on new employees.

For many trainees, being free made the traineeship attractive relative to other programmes. Earning a fair wage for their work was reported to make the traineeship more accessible.





Strengths

“It’s not just you and your farm, there’s other people that are living through the same experience.”

The training addressed lack of specialised agro-ecological training in Wales. Farms already training growers appreciated the combination of autonomy and the structure brought by the curriculum and off-farm sessions. Coordinating partners retained oversight of trainees pay and conditions, providing some external quality control.

Trainees appreciated varied learning modes and financial support for essential needs like childcare or IT equipment. All said they felt enabled and inspired to work in horticulture. As part of the network individuals learnt beyond one farm, whilst hosts learnt from each other. Farm visits were particularly valuable as trainees experienced diverse techniques, approaches and business models. They fostered a like-minded community to provide ongoing support which boosted trainees’ confidence.

Limitations

Most trainees would have appreciated longer training, suggesting two years minimum. But few growers could host longer placements as winter workloads cannot cover additional wages. On-farm training is only accessible if individual growers can afford to pay trainees for their work. The end of Kick Start reduced the potential for this. Hosts and coordinator reported limited capacity for project administration and communication.

Building on their success

“It would be good to see growers and colleges combine their knowledge and resources more.”

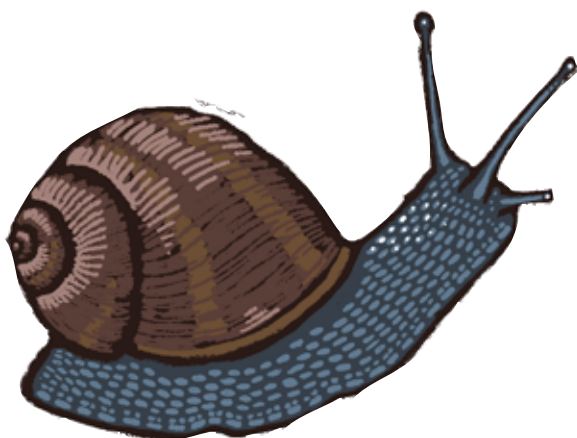
Project funding made coordination of the pilot and its activities possible. The partners believe this collaborative approach is worth replicating, providing there is financial support for coordination. Landworkers Alliance continue to support networking and create materials to facilitate knowledge sharing. In Wales Farming Connect support training for trainers through mentorship and farm visits.

Black Mountains College

This decade young college in Bannau Brycheiniog National Park focuses on education for those seeking to build a fair and just future. It offers vocational training tailored to sustainable careers, and an interdisciplinary degree programme.

The course

The NVQ2 Level 2 in Regenerative Horticulture is delivered in partnership with NPTC Group of Colleges, at BMC's own farm, or in Treherbert, Rhondda Cynon Taf. Modules are delivered by experienced horticulturalists, specialist in organic, permaculture and no-dig techniques. The syllabus is required to meet standard requirements for horticultural education, but is tailored to prioritise sustainability. The year-long course combines outdoor learning with classroom sessions, and is open to anyone aged 16+. Students without a minimum of Grade 4/C GCSE English and Maths are supported to achieve this.



The learning

Learners spend two days each week working on practical horticultural tasks on local farms where learning is guided by their host. Topics include soil ecology, propagation and planting, plant health and disease – all with an emphasis on sustainability. A third day focuses on the college's core course designed to develop students for careers amongst climate crisis. Tutorials are delivered through multi-sensory learning, fostering diverse ways of knowing and future skills such as carbon literacy.

Finances

Students do not pay tuition fees as NVQ course are covered by Welsh Government funding. It is estimated that NVQ delivery costs £6000 per student, including a 15% administrative fee to the college. The college can support some living and travel costs for the year, but a majority is paid by students. BMC's other costs are covered by philanthropists and fundraising.

Strengths

The course is very popular, with learners finding it more accessible than alternatives. Practice based learning is particularly valuable for those seeking careers in growing, and those without a background in classroom learning. For 2024-25 a Level 3 NVQ in Agroecology will offer a follow-on course.



Adapting existing learning pathways proved an achievable way to establish an accredited course tailored to students' and BMC's ethos. Collaboration with local farms and community organisations, allows students to learn valuable practical knowledge in situ, whilst benefiting the wider community. Trainees told us they like the combination of this with accreditation which brings clarity and accountability around their learning.

For those seeking deeper learning BMC degrees are praised by this student: "it's a much more holistic and multidisciplinary way of looking at things." The course includes an independent final year project which allowed them to pursue their interest in soil regeneration. The cohort is reported to be diverse, with people bringing different experiences and students with caring responsibilities welcome:

"I can combine the work life and student life, it's a really good option, the way they've set the course up to accommodate people with children and responsibilities."

Limitations

The college wants to retain its independence and focus on sustainability, which is not always easily accommodated when linking to more established programmes. Rubrics for accredited courses can be outdated and prescriptive, with processes of approving new courses hindering innovation.

It can be difficult for students to find affordable accommodation near the college, a key element of financial pressures they face during and beyond their studies. Many need to earn an income alongside a course, and are mindful that they will require funds to enable them to move on afterwards.

Building on their success

The college is growing, expanding its courses and student numbers. Their NVQ programme has successfully worked within the rubric of existing accreditation, while managing to modify the curriculum to facilitate learning of more sustainable approaches to horticulture. This model might be replicated where further education colleges are open to collaborating.

Learning About Apprenticeships

Several growers expressed interest in offering apprenticeships but did not know how they work. We invited Cae Tan CSA and Bridgend College to explore how they might support apprentices as part of the project's long-running training provision on Gower, South Wales. The college has an established horticulture programme, placing apprentices with numerous employers. At present none are agro-ecological growers. So how would an apprenticeship at Cae Tan work?

The apprenticeship

An employer commits to offering sufficient work to provide experience to meet learning objectives, and a minimum two-year contract. Bridgend College recommend working 30 hours per week for the two years of the apprenticeship. The minimum requirement is 16 hours per week.

The process

As employer, Cae Tan would recruit their apprentice. Apprentices commence college in September, so administrative preparations begin from spring. The college makes a series of checks, confirming a safe, healthy work environment. Employer and apprentice complete forms requesting essential information. The college then invites the apprentice to pre-enrolment to check their eligibility to work in the UK. Next the college sets up a three-way online meeting to formally confirm the apprenticeship.

Bridgend College seeks to make the process as light-touch as possible for employers. They support first-timers to use the digital platform associated with apprenticeships in Wales. They need employers to provide information in a timely manner, particularly in the busy period just before the new academic year.

The apprentice

Anyone aged 16+ can become an apprentice. All

apprentices in Wales must sit the WEST Diagnostics test at pre-enrolment to assess abilities in listening, reading, writing, digital knowledge and maths. Anyone without the required level of key skills is supported to develop them alongside their work.

The employer

Cae Tan would be required to support an apprentice as they do any employee. They need to offer work which enables learning across the Level 2 Horticulture curriculum. Bridgend College follow City & Guilds standards for workplace apprenticeships. Employers commit to using the digital platform for monitoring learning. They meet with the apprentice and assessor to review progress roughly every two months.

Finances

For their first year the apprentice is paid apprentice minimum wage – currently £5.28/hour. For their second year they must receive national living wage appropriate for their age, including for days spent in college. There are no other costs to the employer.

Bridgend College access funding from Welsh Government for their costs to train apprentices. Welsh Government has





previously offered financial support to employers of apprentices, but none is currently available.

The apprentice is liable for their costs of travelling to college. Bridgend College has a Deprivation Fund available for situations of particular need.

Learning

The apprentice attends college a day per week during academic terms, around 33 days annually. A Cae Tan apprentice would join other horticultural apprentices to pursue Level 2 NVQ in Production Horticulture. This includes generic aspects such as health and safety or working with others, alongside work specific topics. The employer can help select curriculum units to match skills and tasks appropriate to their operation. This would include plant biology and propagation, through to selling. Where required, the apprentice attends college sessions to develop their literacy and numeracy.

At work the Cae Tan team would supervise the apprentice to develop and apply skills across the process of raising crops to harvest. Those instructing apprentices need to be industry competent, which need not mean holding any particular qualifications.

The apprentice builds a portfolio of learning evidence, such as photographs of completed tasks. College assessors visit to assess learning against the standards by observing them at work.

Could it work for Cae Tan?

“I think if we can make it work, it’s a really great addition. I don’t think it necessarily would work for every single one of our trainees. It would have to fit the individual.”

For growers like Cae Tan an apprenticeship is appealing as a two-year programme linked to college learning. Their growing includes tasks and skills an apprentice needs to experience to fulfil the learning requirements. Their concerns include having sufficient work for an apprentice over winter, and coordinating college days with their operations. It would also be a significant financial commitment to pay full salary for the second year. Bridgend College believes there is sufficient flexibility for the qualification to fit a CSA. They could find it challenging to accommodate a single apprentice in production horticulture amongst a cohort mostly working in parks and landscaping. Ideally a number of growers in the region would employ apprentices simultaneously.

Organic Lea

This cooperative of 24 workers grows food in Lea Valley on the edge of London. They seek to inspire and enable others to grow food, so support various pathways into growing - informal options through to accredited programmes. Organic farms in Sussex, Norfolk, Suffolk and Kent supply produce for the box scheme, and assist with training.

The Learning

Organic Lea's training programmes have welcomed people with an array of backgrounds and experience, mostly aged 25 - 40. They are accessible for those without previous formal qualifications. Many begin by volunteering at the garden.

More intensive learning is supported through programmes from 7 weeks to 3 months long, which are very popular. All combine practical work at the garden with classroom sessions covering theoretical aspects of horticulture, which increase in line with progress through the pathways.

Entry level learners gain recognition of what it means to work in horticulture through "coming through the gate...a hand in the soil." This offers a stepping-stone to other courses, building confidence to join them.

Level 1 courses bring more formalized learning, classroom time and peer support. This is required for progress to Level 2 which involves one day per week working at Organic Lea. Learners complete some home-based learning to fulfil the qualification requirements which is assessed via observation of practical work and a portfolio.

Learners spend time across all aspects of Organic Lea's operations, including harvest and packing. An optional module focused on enterprise skills is valuable for those seeking to establish a food growing business.

Finances

Organic Lea's training provision has been financially supported by bodies including local authorities and central government. This has made it possible to grant student bursaries for tuition costs.

Strengths

"We really value that our trainers are also practitioners"

Organic Lea has a long-established tradition of training alongside the garden, with many growers becoming trainers. Delivery has remained constant, whilst learning content has adapted to changing contexts, and through reflexive practice to improve the training. Certification by City & Guilds helps





ensure training quality, and gives learners the recognition they deserve.

Learners are constantly working alongside other learners, mentors, and trainers meaning they learn from people with experience across horticulture and build a support network. Growers involved in delivering the training also benefit from connections built through this cooperation.

Provision is designed to accommodate people seeking to learn at Organic Lea. This means only offering part-time courses, allowing students to earn alongside their course. Previous trainees have gone on to work on smallholdings and market gardens, with several continuing to contribute to Organic Lea as trainers

Limitations

The nature of horticulture can limit learning or cause frustrations for some. For example, “nothing happens over night” and the amount of manual work can be off putting. Growing cycles are mis-matched with the training cycle, meaning many students do not experience all aspects of a season’s tasks.

Lack of funding for learners is the biggest barrier to learning, limiting diversification: “in terms of jobs... in terms of the environment and... building strong communities in the countryside that can meet everybody’s needs.” Part-time courses aid financial

accessibility but slow progress. Bursaries are only available for tuition fees, excluding those who cannot finance their living costs.

Building on their success

“Network me and give me decent mentors... that’s the perfect model for me.”

With additional financial support Organic Lea could offer more places and longer courses, and financially support learners beyond their tuition costs. They are exploring potential to extend learning through Level 3 courses, and to offer the enterprise module across all pathways. More advanced training could operate regionally through growers cooperating to support learners across farm types and settings. A collaborative model of training provision would benefit from support from organisations like Landworkers Alliance to build and mentor networks of growers and trainers.

The pathways offered by Organic Lea demonstrate the value of varied options suiting different people. No single model is the answer, and those who support learning can adapt together as contexts evolve.

Plumpton College

Plumpton College is a specialist land-based college in Lewes in East Sussex, with indoor and outdoor facilities. They provide an array of horticultural and agricultural training programmes to a range of learners: from Level 1 courses for home educated pupils aged 14-16, to degree programmes. This case study delves into the Level 3 Crop Technician apprenticeship.

The Learning

The course is open to anyone over 16, and has welcomed trainees in their 50s. They come to college for a week each month, for a mix of practical and theoretical sessions, and farm visits. The course is accredited as a government approved apprenticeship.

“The curriculum is very much geared towards being able to operate the different equipment to go through the whole process of growing vegetables from soil preparation, all the way to harvest and storage.”

There are two pathways: soil or container based. The former is more for growing fruit and vegetables, while the latter favours growing nursery stock. The curriculum also includes business management, including preparing business plans, ownership structures, policy and record keeping.

Finances

The course is funded through the government apprenticeship scheme. This covers tuition and training materials. Employers pay the trainees' full-time salary and help with travel costs.

Strengths

The course is funded and the trainees are in full-time work, making this financially accessible. College sessions are scheduled to fit around work and travel times. Teaching can be tailored to specific trainee needs:

“We respond to employers. So we've got employers telling us we need students to have these skills, so we go and teach them.”

The trainer was praised for being knowledgeable, approachable and supportive, and giving useful detailed feedback. The weekly diary entry that students are required to complete is helpful for recording learning. Students attend college 4 days per month, which can be accommodated within work schedules.

The cohort was reported to be diverse, benefiting peer knowledge sharing as all have different work experience. They also developed a sense of being part of a wider network of horticulturists.



Limitations

It's difficult to find employers for full-time apprentices:

“The main issue with this apprenticeship is that we don't have growers. So it's a big barrier.”

Building on their success

Plumpton College will launch a new Foundation Degree in Sustainable Horticulture Management in 2024. With greater financial support, more growers could employ apprentices, feeding a cycle in which more people learn how to establish market gardens and become future employers.



Pathways to Farming

This training and mentoring programme established by community organisation Mach Maethlon is in its sixth year. It is now run by Ecodyfi and The Centre for Alternative Technology. It aims to strengthen the local food economy by training and mentoring new horticultural food producers.

The Learning

The course is designed to equip people with knowledge and skills to establish an effective horticultural business. It demonstrates how to scale-up from gardening to commercial growing, including accessing markets.

Training includes online and in-person classes, practical sessions on the growing site, and study visits to growers of varying scales. The curriculum is seasonal with more theoretical learning during winter, and more practical work during the growing season. Low season learning takes 0.5 – 1 day a week, increasing to 2.5 days in peak season.

Taught sessions cover topics including, soil science, crop basics, pests and diseases, crop planning, packaging and labelling, marketing and making money. Additional training covers food safety, strimming, watering systems and seed saving.

Following the taught sessions, participants devise a cropping and business plan. Those without their own land are allocated a micro plot on the training field leased from the Centre for Alternative Technology. Subject to funding, year two focuses on upscaling growing for sales. Mentors are also available.

Finances

The course has been funded via grants from the Rural Development Programme, Dyfi Biosphere, and Shared Prosperity. The cost has varied as the course has evolved. The current model and cohort of 15 trainees costs around £1500 per participant.

Strengths

PTF encourage networking among trainees, with small-group learning fostering a supportive community. In-person sessions help to form “powerful networks” that are mutually supportive as people embark on their own enterprise. These networks are diverse, meaning people have varied expertise to share.





Online learning has been particularly helpful for those based in more remote rural locations; being free also makes the training accessible.

Trainees found it valuable to experiment with growing crops over a season, testing their ideas and gaining experience of selling. It has proved a good way to gauge the viability of working in horticulture and running a business through:

“the support of having the space, the land and the kit presented to me...to make sense of whether it was what I wanted, or something I felt I could do.”

Limitations

Not all trainees bring on-farm growing experience, making it a steep learning curve. Challenges around accessing land exclude many young people from establishing a business. Time required for the training also makes it less accessible to those needing an income from full-time work.

The partners have spent considerable time seeking funding, with the UK's exit from the EU limiting access to grants. It is time consuming to manage

grants, with associated processes sometimes causing delays to provision. Without funding it is not possible to provide formal qualifications such as chainsaw permits.

Building on their success

Securing long-term funding would allow the partners to consolidate and maintain the training. It could then contribute to a stronger horticulture sector supporting UK food systems. Graduating trainees need support to establish horticultural businesses given the the associated financial and personal strains.



School of Geography
and Planning

Ysgol Daearyddiaeth
a Chynllunio

Published 2024

For more information contact

Dr Hannah Pitt

pith2@cardiff.ac.uk

Design & illustration:

Frank Duffy frankduffy.co.uk