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The state of skills for UK horticulture

Production horticulture is the most labour intensive part of UK agriculture, employing a huge range of skills and professional specialisms. This briefing focuses on the horticultural workforce, summarising the best available data on work and skills in the sector, including reported shortages. These are the issues that the [Knowing to Grow](#) project focuses on, seeking to understand horticulture's skills problem and how they might evolve in future. Initial findings and results are shared in this series of Working Papers; companion papers present stakeholder views on the challenges and strategies for addressing them. The project focuses on businesses growing fruit and vegetable – the edible or production sector – although it is not always possible to distinguish data on this and ornamental or landscape horticulture. Certain information is not readily available for horticulture specifically, in which case data reported for the wider sector – agriculture and land-based industries – is included.

Key points:

- There are significant gaps in data and labour market intelligence for the horticultural industry. This has been exacerbated by the cessation of sector skills reporting, and is particularly problematic given the industry's high proportion of seasonal and migrant workers which are typically under-monitored and reported.
- The permanent workforce is likely to be dominated by older males, whilst seasonal staff are over-whelmingly non-UK citizens.
- Although high pay roles are available, averages salaries in production horticulture are historically lower than for other land-based sectors, and the national average.
- In recent years production horticulture has reported seasonal roles going unfilled. The number of unfilled vacancies reported is greater than the number of recruits available through the seasonal workers pilot in 2019.
- Levels of skilled work in horticulture are not matched by formal qualifications amongst the workforce. Lack of formal entry requirements and high costs of training each individual are thought to be among the reasons for this.
- Numbers of undergraduates studying horticultural subjects has declined since 2014.
- The sector faces skills related challenges common across the UK economy, with additional pressures from being rurally located.
- Over the next 10 years the horticultural workforce is projected to reduce in overall number, but increase in overall skills needs with a shift towards more specialist and technical roles. Recruitment pressures will continue due to the significant proportion of the current workforce close to retirement age.

The workforce

The UK Government's farm business survey shows that 40,614 people were employed in edible and ornamental horticulture during 2017, 13% of the total agricultural workforce. Of these 46% were

employed on a casual basis; horticulture employs at least 40% of all those casually employed in agriculture.¹ The ONS has noted the difficulty of stating accurately how many people work in seasonal roles in agricultural industries in the UK as there is no official data source.² The UK land based sector is typically dominated by small enterprises with less than 10 employees, and a relatively high proportion of self-employment.³ In 2009 89% of production horticultural businesses (edible and ornamental) were identified as micro-businesses, employing less than 10 staff.⁴ But overall, the sector has larger businesses than average for UK agriculture. Welsh data does not distinguish numbers employed by farm business type, but a survey of 120 growers found that 70% or more have less than 5 full time staff.⁵ The profile of jobs within agricultural businesses are distinct from the wider economy with a concentration 'in the middle' – 48% skilled trade occupations compared to 11% in all sectors. This is balanced by a lower proportion of managerial and professional occupations.⁵

It has been suggested that the horticultural workforce is ageing, with the average age for businesses' key decision makers being 55.⁶ Agricultural occupations do tend to have an older than average workforce, and to be male dominated.⁷ The proportion of people aged 45+ working in agriculture has been increasing since the early 2000s.⁸ The agricultural sector typically has a relatively low number of new start-up enterprises, with inter-generational transfer a key entry route.⁹

A precise breakdown of the workforce by nationality is unavailable, particularly due to difficulties tracking seasonal employees and as ONS employment surveys do not include all agricultural establishments¹⁰. The number of non-UK EU nationals employed in agriculture overall, rose steadily between 2011 and 2015, to more than 22,500, although this is thought to be under-estimated.¹¹ A survey of major labour providers administered by the NFU, suggests that in 2017 99% of seasonal workers in horticulture were non-UK nationals, with the majority of those from Romania and Bulgaria (67%).¹² At its close in 2012 the Seasonal Agricultural Workers Scheme was providing over 21,000 workers from overseas, almost its total quota. The pilot of a replacement scheme is open to 2,500 seasonal workers in production horticulture during 2019-20.¹³ The NFU and others campaigned for reintroduction of the scheme, and continue to highlight the potential for controls on migration from within the EU to be detrimental to the industry.¹⁴

Pay and conditions

It is difficult to identify a typical salary for horticultural jobs, due to the wide range of occupations and lack of sector-wide reporting. Some roles include accommodation or other non-salary benefits which

¹ DEFRA 2019 Results from the Seasonal Labour in Horticulture Survey 2018 for England https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785863/Labour_in_Horticulture_Quarterly_Survey_2018_Final_14mar19.pdf

² ONS 2018a Labour in the agriculture industry, UK <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/labourintheagricultureindustry/2018-02-06>

³ UKCES 2012 UK Commission for Employment and Skills 2012 Agriculture, Forestry & Fishing: Sector Skills Assessment 2012 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/312548/briefing-paper-ssa12-agriculture.pdf

⁴ Lantra 2010 Environmental and Land-based Industries https://warwick.ac.uk/fac/soc/ier/ngrf/lmifuturetrends/sectorscovered/agriculture/lantra_aacs_lmi_march_2010.pdf

⁵ Lantra 2014 *The UK Land-based and Environmental Sector: Skills Assessment Update*

⁶ Lantra 2010

⁷ UKCES 2012

⁸ UKCES 2012

⁹ UKCES 2012

¹⁰ The UK's main Labour Force Survey does not include communal residencies such as those occupied by many seasonal agricultural workers.

¹¹ AHDB 2016 The impact of Brexit on the UK agricultural workforce <https://ahdb.org.uk/knowledge-library/the-impact-of-brexit-on-the-uk-agricultural-workforce-20-september-2016>

¹² ONS 2018a

¹³ DEFRA 2019 <https://www.gov.uk/government/publications/seasonal-workers-pilot-request-for-information/seasonal-workers-pilot-request-for-information>

¹⁴ NFU 2019 *Access to labour - contact your MP now* <https://www.nfuonline.com/sectors/horticulture-and-potatoes/hort-and-pots-news/nfu-expert-insight-lobbying-for-labour-access-what-can-you-do/>

are reflected in pay. Indicative information is available from a leading website publicly promoting horticultural vacancies. For 64 nationally advertised permanent grower roles, salary ranged from £15,000 to £70,000+ per annum. Not all of those in the lowest band were trainee roles or inclusive of accommodation. More than 60% of posts were concentrated in the £20-40K bands.¹⁵

For ornamental businesses, the HTA provides benchmarking information on pay and conditions. This suggests the industry pays salaries comparable to those for similar roles in other sectors.¹⁶ For the edible sector, the annual ONS employment survey provides some insight as data is broken down by standard business identification categories.¹⁷ In 2018 the mean annual gross salary for employment in the industry category 'Growing vegetables, roots and tubers' was £20,847, and for 'Plant propagation' businesses it was £19,432. Both are lower than average for all employees within 'Agriculture, forestry and fishing' of £22,366, and considerably less than the mean national salary of £29,832. In 2012 Lantra suggested that the gap between hourly wage rates for the land-based sector and the national average had widened, although noting complications around accurate data on wages levels, particularly for seasonal roles.¹⁸

Historically, production horticulture has been perceived as a low pay sector, with widespread casualisation.¹⁹ There have been known and prosecuted cases of exploitation including modern day slavery.²⁰ Although the cessation of the Agricultural Wages Board in England in 2013 removed sector-specific regulation of wages, since 2016 they are subject to living wage regulations. The labour intensity of production horticulture means that increases in the living wage have significant impacts on businesses' profit margins.²¹ Labour costs represent a significant proportion of producers' costs, which in such a tight margins sector where producers have less influence than those they supply, might create pressure to reduce employee benefits.²² These workers may be particularly susceptible to exploitation given their isolated work sites, migrant status, and reliance on employee provided accommodation.²³ Piece rates and performance bonuses can considerably increase earnings for those on minimum wage or in seasonal roles. Ongoing shortages have encouraged some growers to enhance the conditions they offer workers.

Labour shortages

As noted above it is difficult to know exactly how many people work in the sector, particularly in seasonal roles. In 2018 the UK Government began surveying horticultural businesses in England to assess their need for seasonal labour.²⁴ Of those needing seasonal labour, (between 25% and 36% of respondents) the proportion reporting a shortfall varied between 26% and 34% depending on the time of year. The shortfall ranged between 7 and 51 person days. Earlier data is available from the NFU survey of seasonal labour recruiters. As a voluntary survey not including businesses directly recruiting staff, this is expected to under-estimate recruitment. The survey found that during 2017 recruiters filled 30,600 horticulture positions, but advertised 35,000, leaving at least 4,000 unfilled.²⁵

¹⁵ Search on www.horticulturejobs.co.uk completed 25.05.19

¹⁶ HTA 2016 Grower Wages Benchmarking Report <https://hta.org.uk/asset/CBD90F85-7F7A-42B9-A124A2E7A9AAA0C8/>

¹⁷ ONS 2018b Earnings and hours worked, industry by four-digit SIC: ASHE Table 16

<https://www.ons.gov.uk/file?uri=/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/industry4digitsic2007ashtable16/2018provisional/table162018provisional.zip>

¹⁸ UKCES 2012

¹⁹ Devlin, S. 2016 Agricultural labour in the UK, *London: Food Research Collaboration*.

²⁰ Sustain 2018 Why would anyone want to pick our crops https://www.sustainweb.org/publications/why_pick_crops_newreport/

²¹ Anderson Midlands 2015 The National Living Wage: A report to assess the potential financial implications for UK horticulture <http://horticulture.ahdb.org.uk/sites/default/files/Final%20National%20Living%20Wage%20Report%252C%20Andersons%252C%20Dec%202015.pdf>

²² Sustain 2018

²³ Rye, J. F., Scott, S., 2018 International Labour Migration and Food Production in Rural Europe: A Review of the Evidence, *Sociologia Ruralis*

²⁴ DEFRA 2019

²⁵ ONS 2018 Labour in the agriculture industry, UK

A survey of production horticulture businesses in 2007 found a very high level of hard to fill vacancies – 64% of all vacancies, compared to 30% for all sectors, and 40% for agriculture, forestry & fishing.²⁶ The same survey found that lack of skills within the existing workforce was less of a concern to employers in production horticulture. Agriculture, Forestry & Fishing businesses typically have a high proportion (29%) of skill shortage vacancies - low numbers of applicants with required skills.²⁷ Labour market information has not been reported on a sector-specific basis since 2014, and Lantra no longer publish skills assessments for agriculture, forestry and fishing.

Qualifications and training

Compared with averages for the whole UK economy, a higher percentage than average of people working in agriculture, forestry and fishing have no formal qualifications.²⁸ It has also been the sector with the third lowest proportion of employers providing training.²⁹ 2008 data for production horticulture (edibles and ornamental) suggests that 25% of workers had no qualification, whilst only 58% had qualifications Level 2 or above.³⁰ However, this does not reflect the level of skills required to work in the sector. Lantra accounted for this mismatch between qualifications and skills within land-based industries by pointing to a lack of formal entry requirements and lack of occupational regulation.³¹ They also identified that cost of training each employee is the highest of any sector, presenting a potential barrier to provision. Other reasons for lack of engagement with training are suggested to be lack of awareness of provision and availability, and difficulties covering staff absent for courses.³² Formal training accessed within land based industry has been found dominated by regulatory requirements. In addition, it may be that the nature of these businesses mean they lack inherent incentives to prioritise skills development.

Employer surveys have found that fewer agricultural businesses than average across the economy report skills gaps in their workforce (10% compared to 13%).³³ However, research in Wales³⁴ suggested at least 40% of food businesses experienced technical skills gaps in their workforce, and suggested the need for approximately 75,000 additional skilled workers in the food chain in Wales by 2020. Future skills needs for land based industries have been suggested as business and management skills (e.g. project or risk management), ICT and science with a move to professionalization and more technical roles.³⁵ Lantra's last forecasts highlighted the likelihood of increasing demand for people skilled in business skills such as leadership, marketing and finance alongside technical and job-specific skills.³⁶

A range of further and higher education courses are directly linked to careers in horticulture, or focus on its specialist knowledge. For 2019 entry 22 institutions were offering undergraduate/post-18 courses focused on horticulture or crop science.³⁷ Of those focused on horticulture specifically 8 were degree level, 5 HNDs, 4 HNCs and 7 foundation level. For post-16 education 48 institutions were offering a total of 122 horticulture focused courses or programmes for 2019.³⁸ Of these 38%

²⁶ Lantra 2009

²⁷ UKCES 2012 UK Commission for Employment and Skills 2012 Agriculture, Forestry & Fishing: Sector Skills Assessment 2012 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/312548/briefing-paper-ssa12-agriculture.pdf

²⁸ Lantra 2014

²⁹ Lantra 2009

³⁰ Lantra 2009

³¹ Lantra 2009

³² UKCES 2012

³³ UKCES 2012

³⁴ Welsh Food & Drink Skills Project 2014

³⁵ UKCES 2012

³⁶ Lantra 2014

³⁷ Search of www.ucas.com May 2019

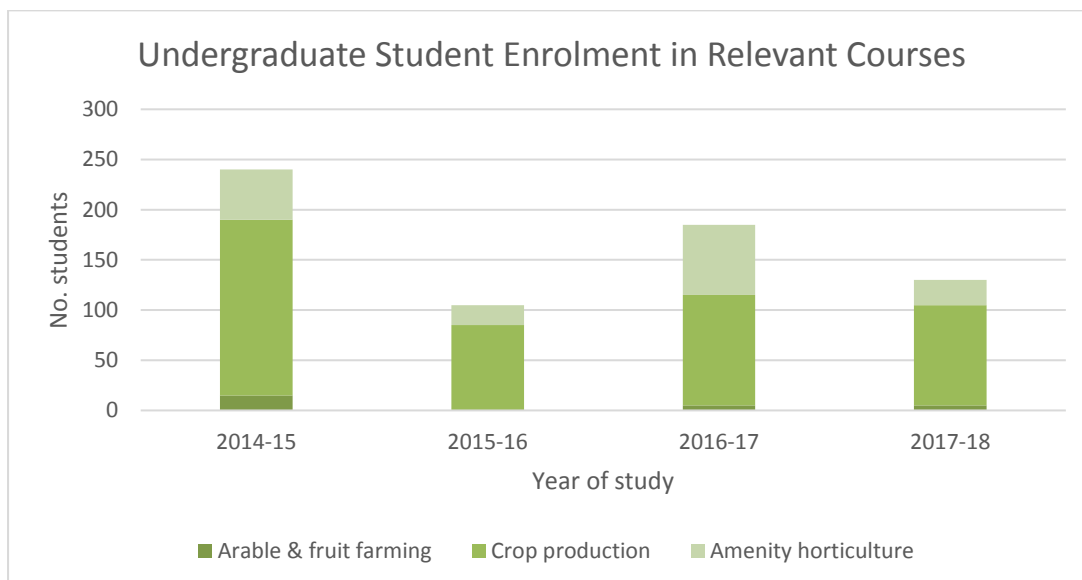
³⁸ Search of www.ucasprogress.com May 2019

were apprenticeships of any level, 56% were diplomas of any level, and RHS certificates, HND, BTEC or skills programmes.

Educational Level	No. of courses for 2019 entry	Course Title	No. of courses for 2019 entry
Bachelors degree	15	Agronomy and crop science	1
Diploma	1	Agricultural & Crop Science	2
Foundation level	8	Agriculture - crop management or production	3
HNC	4	Agriculture -Precision Crop Technology	1
HND	5	Applied Horticulture	1
TOTAL	33	Horticultural Science and Management	2
		Horticulture	16
		Horticulture - Commercial	2
		Horticulture – Landscape & garden design	2
		Horticulture – plant science	3

Table 1: Post-18 /undergraduate education provision for horticulture and related subjects

Data is available on numbers of students enrolled across different subject areas; standard reporting groups of courses in the UK’s standard classification, in this case Agricultural Sciences. Figure 1 shows trends in numbers studying subjects directly relevant to careers in horticulture, and suggests an overall decline in uptake since 2014.³⁹ During this period no students were recorded studying organic farming. Across this period the number of undergraduates studying any subject in the broader category ‘Agriculture & Related subjects’ remained fairly consistent at around 15,000. This means that the proportion of students on horticultural degrees as a proportion of all agricultural students has decreased from 1.6% in 2014/15 to 0.9% in 2017/18. It is not clear whether declining numbers of student enrolments is due to fewer places being offered, the cessation of course provision, or failure to attract students to available courses.



³⁹ Based on analysis of HESA data <https://www.hesa.ac.uk/data-and-analysis/students/table-22.csv>

Challenges

Some of the issues facing production horticulture are not unique to this sector. The UK as whole has been identified as suffering from insufficiently skilled labour entrants, and a mismatch between skills supply and demand.⁴⁰ In 2009 Lantra⁴¹ summarised issues in the production horticulture labour market as:

- dominance of capital intensive micro-businesses
- high levels of self-employment
- high levels of seasonal working
- outdated image linked to difficulties recruiting
- workforce dominated by older and male workers, and
- low levels of formal qualifications.

Whilst much of this characterisation would still apply, since then the issue of the UK exiting the EU and related changes to labour migration patterns has dominated and driven debate on the sector's workforce. Declining availability of migrant and seasonal workers affects horticulture more than other agricultural sectors, and is unlikely to be fully eased by the pilot scheme. Production horticulture's challenges in recruiting and retaining adequate skilled staff pre-date the vote to leave the EU, and are influenced by wider socio-economic forces. As a predominantly rural industry, horticultural employers face the challenge of attracting workers to locations where accommodation costs are high and service provision poor, or require long commutes.⁴² The RSA suggests that resolving such challenges will require the industry to engage more with wider debates about the changing nature of work, and to consider issues of quality. Further detail on these challenges is explored in *Working Paper 3*.

Future trends

Although employment within agricultural industries has long been declining, forecasts suggest increases in employment in the sector driven by expansion and the high proportion of employees near to retirement age.⁴³ The changing nature of jobs in the sector is also seen to create pressure to draw greater numbers of new recruits.⁴⁴ However, others note insufficient detail on the numbers of new-entrants required to secure agriculture's future, or the profile of skills required.⁴⁵ Projections suggest that by 2030 the UK will have 12,400 more people employed in agriculture, a 0.3% increase from 2018, compared with a projected 1.1% decrease for the EU overall.⁴⁶ The profile of agricultural employment is also predicted to shift, with a significant decline in number of low skilled roles, and considerable increase in high skilled ones.

The trajectory for production horticulture specifically will depend on developments within the industry, and policy decisions. For example, tight controls on immigration might affect operations to such a degree that growers go out of business, relocate overseas or invest in automation. Some suggest that the current government's approach towards food production is likely to result in a smaller, more skilled labour force, less reliant on large numbers of staff, with greater use of technological solutions and consolidation into fewer larger businesses.⁴⁷ An alternative route would

⁴⁰ Government Office for Science 2017 Future of Skills and Lifelong Learning https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/727776/Foresight-future-of-skills-lifelong-learning_V8.pdf

⁴¹ Lantra 2009 The Production Horticulture Industry Labour Market Information

<http://www.growingjobs.org/downloads/Research%20LMI%20factsheet%20Production%20horticulture.pdf>

⁴² RSA 2018 Good Work for a thriving economy <https://medium.com/the-rsa-food-farming-countryside-commission/good-work-for-a-thriving-economy-64218899466e>

⁴³ Lantra 2014

⁴⁴ UKCES 2012

⁴⁵ DEFRA 2013 Future of Farming Review Report

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211175/pb13982-future-farming-review-20130709.pdf

⁴⁶ CEDEFOP <http://www.cedefop.europa.eu/en/publications-and-resources/data-visualisations/skills-forecast> accessed 25.04.19

⁴⁷ Devlin 2016

be to promote increased domestic production of fruit and vegetables, thereby increasing demand for horticultural labour. This would extend pressure to allow a supply of migrant workers, or require innovative work to attract a domestic workforce.⁴⁸

As this paper has demonstrated, the availability and accuracy of data on work and skills in horticulture is currently inadequate to provide a reliable picture of the state of the sector. Any future trends predicted on the basis of this data are therefore susceptible to inaccuracy. The sector is also particularly vulnerable to political decisions yet to be resolved, leaving the future even more unpredictable.

Read all the working papers from this project:

<https://www.cardiff.ac.uk/sustainable-places/research/projects/knowning-to-grow>



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⁴⁸ Devlin 2016