Gloucestershire Local Skills Improvement Plan (LSIP)

Priority Findings - Agriculture, farming, pre-gate food production, Agri-tech and land management

1. **Introduction**

Agriculture provided 0.5% of the UK's total economy in 2021, employing almost half a million nationally and managing 71% of the UK's land.[1] In 2021, the net contribution to UK Gross Value Added (GVA) was £18.9 billion. Farms in Gloucestershire are smaller sized than the England average, at 76 hectares (ha)[2] vs 85 ha, likely due to the prevalence of dairy farming, which usually has a smaller area per farm than other types of farming. The average performance in the UK of the top performing 25% of farms is 1.6 times better than the bottom 25% performing farms. There is potential for increased productivity and efficiency, to lift the performance of lowest performers closer to the national average and one of the ways this could be achieved is through greater technological adoption and innovation.

Demographically there is a high, and increasing, dominance of business owners and other staff employed in the sector of advanced age. The average (median) age for the most recent year available (2016) of 60 (up from 58 in 2005). 36% of the sector are aged over 65 – the most populous age category, as compared to 12% aged 44 or under[3]. Agriculture has long been part of the Gloucestershire landscape and local communities, with over 70% of the county comprised of agricultural land.

An EFRA report delivered to the House of Commons in March 2022 suggested that the current shortfall in the labour market for food and farming roles was around half a million vacancies, out of a total workforce of 4.1 million[4], with knock on impacts on food production, hospitality and animal welfare. The sector as a whole has a good history of incorporating technological solutions to labour-intensive practises (such as seen within robotic dairies) and there are some leading regional partner organisations. Operated facilities within the region include the Farm 491 agri-tech accelerator, Royal Agricultural University, Hartpury University & College's Agritech Centre and Digital Innovation Farm. Wiltshire College & University Centre's Agritech Centre at Lackham is just outside Gloucestershire but forms part of the economic geography of the sector and area.

The skills needs' risk within this sector is to maintain economic competitivity against a significantly reduced available workforce, whilst ensuring the draws to the sector remain and are clearly known to improve recruitment into education and work. The opportunity is improve productivity and the usage of technology and data to make farming more lucrative whilst improving quality of output and work-life balance, including to improve the succession of farming businesses to the next generations and also attract new entrants to consider farming if they have not grown up within farming families.

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[1] From *DEFRA*, *Agriculture in the UK*, 2021
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1106562/AUK_Evidence_Pack_2021_Sept22.pdf
[2] From *DEFRA, Holdings, areas and make up of UK agriculture by county,* June 2022
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1084972/structure-england-june21-county-23jun22.ods
[3] From *DEFRA*, *Agriculture in the UK*, 2021
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1106562/AUK_Evidence_Pack_2021_Sept22.pdf
[4] From *House of Commons DEFRA Report, Labour Shortages in the food and farming sector,* March 2022
https://committees.parliament.uk/publications/9580/documents/162177/default/

NB The motivations for those working within the sector are mixed, and not always from a business/commercial/profit maximisation standpoint – the intrinsic value of stewarding the land/self determination and rural lifestyle are factors that attract and keep those in the sector.

Please note that this sectoral statement looks at wide needs within agriculture and farming, including horticulture, pre-gate food production, agri-tech, professional services to the sector and land management. As such some of the roles associated with this sector are difficult to delineate in terms of ultimate needs and roles. We envision further sub-sectoral delineation of needs appropriate to the sector in the region during Phase 2 delivery. Allied roles to the sector (including but not limited to sales, veterinary technicians, nutrition, breeding and genetics, agronomy etc) have been incorporated into our discussions with employers and highlighted where possible within reported skills needs, but likely will need further delineation throughout the project cycle.

Delivery within FE provision towards agricultural needs primarily comes from Hartpury University and Hartpury College, catering to over 4,500 students, and for HE and Foundation degrees from the Royal Agricultural University (both with significant national and international footprints in terms of learner locations and employer partners). Hartpury offers a range of Access, Level 2 and Level 3 Academic, Technical and Vocational Courses including apprenticeships as well as HE and higher level provision. RAU offers Foundation, Undergraduate and Postgraduate degree courses across a broad spectrum of subject areas within the sector.

2. Labour market intelligence trends for the Gloucestershire region

Gloucestershire has a farming, food, drink and rural economy sector valued at nearly £1.5bn GVA - 8.8% of the local economy compared to 6.4% nationally - and the sector supports over 50,000 jobs across wider industry in the county, around 14.9% of the total workforce[5]. Forecasts for sector employment, growth and labour requirements are sparse, with advancements and adoption of technology potentially being utilised further to mitigate labour market shortages.

The NFU President Minette Batters reported in April 2022 an 'estimated 500,000 vacancies left unfilled across the food and farming industry', with NFU seeking a review of both the Shortage Occupations List and the Seasonal Workers Scheme[6].

National trends are broadly replicated in Gloucestershire, but due to the region creating double the national proportion of sectoral activity is particularly acute – Gloucestershire agriculture directly supports 6,280[7] jobs, with professional supporting employees estimated around 210. If the figures attached to the almost one in eight roles not filled reported (as above) by Efra in April 2022, we would expect of the 50,000 roles in the region there to be approximately 6,250 current vacancies within farming, food production and the rural economy. This would potentially equate directly to 700 – 900 farming sector vacancies, though this difficult to estimate more precisely due to the majority of employment in the sector via owners and manager family units, alongside roles classified as other

[5] From *GFirst LEP Agrifood and the Rural Economy Report,* 2019, https://www.gfirstlep.com/downloads/2019/the-gloucestershire-agrifood-and-rural-economy-final-report-apr-2019.pdf

[6] From the NFU Online, April 2022, https://www.nfuonline.com/updates-and-information/efra-labour-shortages-report-warns-of-shrinking-sector/

[7] From *GFirst LEP Productivity Evidence Report*, 2019 https://www.gfirstlep.com/downloads/2019/gloucestershire_five-foundations-of-productivity_evidence-report_2019.pdf & *GFirst LEP Draft Local Industrial Strategy* https://www.gfirstlep.com/downloads/2019/gloucestershire_draft_local-industrial-strategy_2019.pdf

industries due to their supporting nature. Defining the impact of the rural economy within farming is particularly difficult due to increasing diversification of traditional farming models.

Table 1 - GB level employment (thousands) by Broad Industry Group (full-time/part-time and public/private sector split)												
									Reference year 2021, Thousands			
Broad Industry Group	Full time employees			Part time employees			Total employees			Total employment		
	Public	Private	All	Public	Private	All	Public	Private	All	Public	Private	All
Agriculture, Forestry & Fishing	1.7	164.3	166.0	0.3	53.7	54.0	2.0	218.0	220.0	2.5	483.8	486.3
Mining, Quarrying & Utilities	30.8	331.5	362.2	3.4	29.3	32.7	34.2	360.8	395.0	34.4	361.9	396.3
Manufacturing	18.6	2057.5	2076.1	1.0	217.5	218.4	19.6	2275.0	2294.5	19.6	2305.3	2324.9
Construction	26.3	1217.9	1244.3	4.5	229.6	234.0	30.8	1447.5	1478.3	31.2	1537.8	1569.0
Motor Trades	1.6	427.2	428.8	0.6	83.5	84.1	2.2	510.7	512.9	2.2	538.4	540.6
Wholesale	1.9	914.1	915.9	0.2	149.4	149.7	2.1	1063.5	1065.6	2.1	1081.0	1083.1
Retail	0.7	1156.6	1157.4	0.5	1625.7	1626.2	1.2	2782.3	2783.5	1.3	2877.7	2878.9
Transport & Storage (inc Postal)	136.7	1135.1	1271.8	13.0	246.4	259.4	149.7	1381.5	1531.2	153.0	1433.5	1586.5
Accommodation & Food Services	5.3	956.5	961.8	10.6	1306.9	1317.5	15.9	2263.4	2279.3	15.9	2322.9	2338.8
Information & Communication	26.4	1133.7	1160.1	4.2	183.7	187.9	30.6	1317.4	1348.0	32.1	1324.3	1356.4
Finance & Insurance	29.2	895.2	924.4	6.3	148.6	154.9	35.5	1043.8	1079.4	35.7	1055.8	1091.5
Property	15.0	381.4	396.4	4.4	144.2	148.6	19.4	525.5	544.9	20.8	574.8	595.7
Professional, Scientific & Technical	48.6	2124.5	2173.2	12.1	508.9	521.0	60.7	2633.4	2694.1	61.2	2729.6	2790.8
Business Administration and Support Services	73.6	1744.2	1817.9	21.8	850.3	872.2	95.5	2594.6	2690.0	95.9	2638.4	2734.3
Education	764.9	722.7	1487.5	730.6	430.7	1161.3	1495.5	1153.4	2648.9	1497.5	1156.4	2653.9
Health	1211.7	1169.9	2381.5	761.4	987.9	1749.2	1973.1	2157.7	4130.8	1973.6	2208.6	4182.3
Public Administration	1075.4	9.1	1084.5	311.0	3.5	314.5	1386.4	12.6	1399.0	1386.4	12.6	1399.0
Other	53.0	641.9	694.9	43.8	546.6	590.5	96.8	1188.5	1285.4	97.5	1253.8	1351.4

Source: Office for National Statistics

Key
CV < 5%
CV => 5% and < 10%
CV =>10% and < 20%
CV=> 20%

The colour coding within the tables indicates the quality of each estimate based on the coefficient of variation (CV) of that estimate.

The CV is the ratio of the standard error of an estimate to the estimate itself. For example, an estimate with a CV of 5% will have a standard error that is 5% of the estimate. The smaller the coefficient of variation the greater the accuracy of the estimate. CVs that are greater or equal to 20% should be used with caution.

Notes

1. Employment is defined as employees plus working proprietors

2. Figures are rounded to the nearest thousand and to one decimal place. For example 2.4 is equal to 2,400, and represents a figure in the range 2,350 - 2,449. Figures may not add up when combined from the table above due to rounding.

According to the most recent data available, taken in March 2022 there were 2,120 VAT and/or PAYE registered businesses within Gloucestershire[8]. Within the wider South West region, of the 21,205 businesses within the crop and animal production sub category (SIC -01) the bottom two turnover categories (£0-49,000 and £50-99,000) comprise a majority (11,290)[9]. The overwhelming majority of businesses are small – 18,855 employ up to 4 staff. Only 5 businesses are in the large category employing over 250 full time equivalents[10].

The significant majority of workers within Gloucestershire's agricultural sector are farmers, partners or directors working either full time (2,025) or part time (2,080) on their own farm. Another notable contingent are casual workers, numbering 1,073. A relatively small number, 344 are salaried managers working on a farm owned by another individual or company, and the remainder are classed as regular workers (783 on full time basis, 581 working part time)[11].

3. **Job postings and forecasts to meet replacement and expansion need (existing staff leaving the sector's workforce either into different sectors or retirements and new employment generation against expected sectoral growth)[12].**

Publicly available data about replacement and expansionary labour needs either on current or forecast basis has been lacking. The sector is characterised by small family-owned businesses, informality of job opportunities (where roles aren't often advertised and often filled by personal contacts of the business owner/manager), self-employment and use of casual labour.

[8] From ONS data, UK Business Activity Size and Location, 2022
https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivitysizeandlocation

[9] From ONS data, UK Business Activity Size and Location, 2022
https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivitysizeandlocation Table 8

[10] From ONS data, UK Business Activity Size and Location, 2022
https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/ukbusinessactivitysizeandlocation Table 3

[11] From *DEFRA, Holdings, areas and make up of UK agriculture by county,* June 2022
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1084972/structure-england-june21-county-23jun22.ods
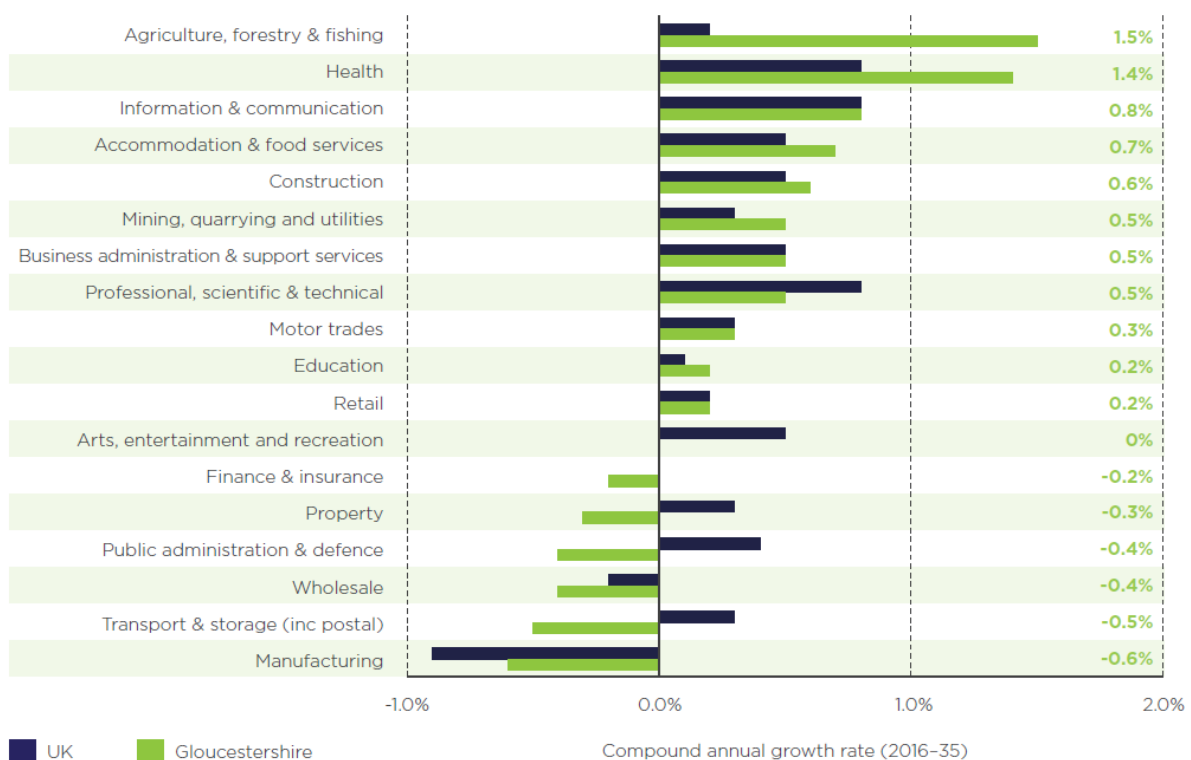
[12] Article from *HR Magazine online,* 2022 https://www.hrmagazine.co.uk/content/news/businesses-face-record-recruitment-difficulties/

Hartpury University & Hartpury College report excellent 'positive progression' for learners in FE courses; overall progression into a job or further HE or FE study for both 21/22 and 21/20 were 100%. At the point of exit in 2022, 29.1% of the Agriculture cohort had secured a job related to their area of study before they left, with an additional 2.1% also securing employment not directly related to their area of study, showing a strong correlation between learning and vocational pathways.

Some of the FE (and to a lesser extent HE) provision is of value to categories of learners who have on the job experience or who have been brought up on farms and in rural settings but seek formal technical qualifications either to consider diversification opportunities for their farm, or to benefit from up to date learning about regulatory changes, technological updates, ecology and biodiversity developments affecting the sector. This would particularly suit modular provision and flexible/hybrid delivery around other work commitments.

Fig 1.29[13] (ONS, below) shows that the agriculture, forestry & fishing sector represents the highest compound annual growth rate in roles out until 2036 at 1.25% per annum – far in excess of the UK average of around 0.2%. With 15% of Gloucestershire's workforce in agri-food[14], productivity and added value in the sector are key for future proofing the sector and ensuring its continued success within the region and nationally.

Fig 1.29 Projected change in employment by broad sector, 2016–35

Sector	Rate
Agriculture, forestry & fishing	1.5%
Health	1.4%
Information & communication	0.8%
Accommodation & food services	0.7%
Construction	0.6%
Mining, quarrying and utilities	0.5%
Business administration & support services	0.5%
Professional, scientific & technical	0.5%
Motor trades	0.3%
Education	0.2%
Retail	0.2%
Arts, entertainment and recreation	0%
Finance & insurance	-0.2%
Property	-0.3%
Public administration & defence	-0.4%
Wholesale	-0.4%
Transport & storage (inc postal)	-0.5%
Manufacturing	-0.6%

UK ■   Gloucestershire ■   Compound annual growth rate (2016–35)

If the breakdown of the regional working population in Gloucestershire is similar to neighbouring

[13] *GFirst Productivity Evidence Report* 2019 *https://www.gfirstlep.com/downloads/2019/gloucestershire_five-foundations-of-productivity_evidence-report_2019.pdf* Page 30

[14] *GFirst Local Industrial Strategy, 2019*
https://www.gfirstlep.com/downloads/2019/gloucestershire_draft_local-industrial-strategy_2019.pdf Page 48

counties and the South West as a whole, we would expect the make-up of specific primary roles to be approximately;

Occupations Employed by this Industry	% of Total Jobs in Industry
Farmers	+-30.0%
Farm Workers	17-19%
Managers and Proprietors in Agriculture and Horticulture	5-7%
Horticultural Trades	2-4%
Fishing and Other Elementary Agriculture Occupations n.e.c.	3.0%

Despite the current downturn and the forecasted slow growth for the British economy in the next 5 years, there are significant opportunities attached to this sector, including additional potential for domestic and exported production, improved productivity and efficiencies through technological adoption, especially against a backdrop of heightened public awareness about food security and global factors triggered by events such as the Russian invasion of Ukraine in early 2022.

4. Occupational shortages (within existing roles/pathways)

Due to the nature of employment within this sector and the current majority of owner/occupiers and familial units, it is significantly difficult to analyse existing shortages and needs within roles. We are colloquially aware of needs for engineers, Labourers, technician and Maintenance, Repair and Operations (MRO) roles, with additional need in farm management, data, scientific and professional roles.

Utilising prior research into digital transformation and the Agricultural Knowledge and Innovation System (AKIS) (such as the referenced report from the Land Use Policy Journal) and the work of J.Ingram and others, we have attempted to divide up shortages and opportunities into different acting groups within the farming landscape – farmers, advisors and professional service providers, researchers, and suppliers & third party support, for their incorporation in the supply chain needs and equipment, platform and service provision into the sector. The best existing delineation of sector specific agriculture, environmental and animal care pathways is available via the Institute for Apprenticeships in their occupational maps[15]

Agriculture, Land Management and Production Pathway		
Technical (L2-3)	Higher (L4 -5)	Professional (L6-7)
Agricultural Engineering Operative/Technician	Agricultural Engineering Manager	Agricultural Engineering Professional
Agricultural Operative/Technician	Agricultural Manager	Agricultural Professional
Arboriculture and Forestry Operative	Arboriculture and Forestry Supervisor	Arboriculture Professional
Environment Technician	Environment Specialist	Environment Professional

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[15] Institute for Apprenticeships Occupational Maps, online, 2023,
https://www.instituteforapprenticeships.org/occupational-maps/

Landscape Horticulture Operative/Technician	Landscape Horticulture Manager	
Production Horticulture Operative/Technican	Production Horticulture Manager	Production Horticulture Professional
Animal Care and Management Pathway		
Technical	**Higher Technical**	**Professional**
Animal Care and Welfare Assistant	Animal Care Specialist	
Equine Groom/Farrier	Equine Specialist	

We have attempted below to show some of the existing roles' needs and requirements to indicate where sectoral needs may be met via existing courses, with or without micro-interventions, but we faced significant issues with division of the existing agri-food labour market due to the factors discussed above. Below we align some suggested roles and FE pathways via potential training needs rather than shortages. We have not as yet looked at these shortages in relation to current supply volumes from colleges and ITPs, therefore these priorities are here for discussion with providers at this stage. We have attempted to RAG rate needs (Red, Amber, Green, with Red being highest) to highlight to most pressing existing role shortages within this sector, but this is based on wider speculative analyses of the changing agri-food landscape rather than specific data sets and we therefore welcome further suggestions in delineation attempts.

Role	Potential Occupational pathway	R	A	G
General farm roles	L2 and 3 technical qualification routes L4 and 5 specialist and managerial routes	x		
Equipment farm roles (internal and external) Support and suppliers	L2 and 3 technical qualification routes L4 and 5 specialist and managerial routes Agricultural Engineers Vehicle/mechanical/electrical maintenance qualifications MRO and land based service engineer/technician (L2/3)	x		
Roles attached to livestock	L2 and 3 technical qualification routes L4 and 5 specialist and managerial routes		x	
Roles attached to arable and crop production	L2 and 3 technical qualification routes L4 and 5 specialist and managerial routes		x	
Professional and advisory roles Research, scientific, academic and R&D roles (inc. agri-tech, data and technological advancements)	L6 and 7 Professional and higher technical routes Other Professional and skilled supporting roles including agronomists (L5-7)			x
Data and analysis consultancy	Various routes both sector specific (L3-7) and via computing, business, scientific and data pathways		x	

5. **Occupational Opportunities – Skills for new technologies**

Whilst we can identify with more certainty some of the more imminent technological needs within this sector, we have not attempted to outline too explicitly the roles that these will fit into, due to the rapid and sometimes unexpected changes under which economic and other factors are impacting this sector. We have therefore broken down technological and expected sectoral needs into broad areas or specific to a technology, alongside some forecasting of expected demand (extrapolated to a regional level where possible or pre-existing).

Agritech is a burgeoning sub-sector within agriculture and farming, driven by data, automation and precision application, incorporating technologies such as[16];

- breeding and genomics
- plant, animal, and soil sciences
- remote sensing and monitoring
- crop and livestock data management and modelling
- integration and visualisation of complex data sets
- machine learning and artificial intelligence
- robotics
- precision engineering
- "smart" management of inputs (nutrients, water, energy and products for plant and animal health)
- communications technologies

An estimated 78% of farmers already incorporate some form of agritech nationally (Agri Epicentre, 2021[17]), with take up highest amongst younger farmers and within the largest holdings. Adoption is highest in technologies including machine guidance systems (40% reported they are using this), soil mapping (35%), livestock growth monitoring (30%) and variable rate application of chemical or biological inputs (28%). Interestingly, only around one-third believe technology will help them reduce carbon emissions. Whilst we can identify with more certainty some of the more imminent technological needs within this sector, we have not attempted to outline too explicitly the roles that these will fit into, due to the rapid and sometimes unexpected changes under which economic and other factors are impacting this sector. We have therefore broken down technological and expected sectoral needs into broad areas or specific to a technology, alongside some forecasting of expected demand (extrapolated to a regional level where possible or pre-existing).

Gloucestershire has leading expertise in agri-tech and significant accelerator and R&D expertise, increasing the potential to improve both domestic and export opportunities in new and existing production, with Sustain's 2021 report[18] suggesting that just expanding local food chains could lead to the creation of 200,00 jobs nationally. These are opportunities Gloucestershire as a region is well-placed to capitalise on. But the balance between new technological adoption, focus-shift as required by changes to legislation and the economic marketplace and meeting current demand has the potential to introduce additional friction to employers and producers. Businesses are facing challenges from increasing core costs and difficulties recruiting.

Therefore we are highlighting potential advantageous technologies more than point towards new role creation in the short term. Whilst some of these technologies are becoming acutely more integrated into general practise, such as data management and modelling (often driven by supply chain

[16] Definitions taken from http://www.ifm.eng.cam.ac.uk/resources/government/making-smart-specialisation-smarter-an-industrial-innovation-system-approach-the-case-of-agri-tech-east/
[17] From *Agri EpiCentre article,* 2021
[18] https://www.sustainweb.org/publications/the-case-for-local-food/

requirements) and plant, animal and soil sciences (due to necessity and cost reduction such as planning and targeting fertiliser application), others [such as hydroponics and fully remote automation of farm operations] currently are further from commercial uptake across the sector as a whole.

Right now our priority is that Colleges and other providers of training for these occupations, gear up their practical facilities and as far as possible and begin (if not already), to offer the upskilling and awareness needed alongside new occupational programmes where there is local demand or expected imminent local demand. We hope to have discussions with providers and stakeholders about how demand could be stimulated further and timing of growth.

Each new technology for potential adoption has various roles/functions attached to it, which we have here summarised within three categories loosely as assessing/advising, installing and commissioning, and maintenance repair and operation (MRO) and indicated whether these are directly roles within holdings or within wider agricultural support industries.

Occupation	External- Assessor/Advisory roles	External - Installation/ Commissioning	Internal/External – Maintenance, Repair and Operation
Technology			
Smart management technologies, inputs	Suppliers/ independent advisory businesses		Farm manager/owner/ senior, third party contractual See Priority 7 below
Automated farming techniques including roboticised systems, drone surveyance and measurement, drone/automated delivery systems	Owner/manager, support requirements	Third party contractors, technologically aligned	Technician, general labourer, third party See Priority 7 below
Diversification attached to sustainability	Owner/manager, support requirements	Non-agricultural specific supply & installation companies	Farm manager/owner/ senior, third party contractual See Priority 7 below
Smart technologies for monitoring: Data platforms, sensors, analysis, (AI/ML), visualisation	Suppliers/ independent advisory businesses		Technician, Farm owner/manager/contractor See Priority 7 below
New engineering requirements attached to new hardware/ equipment/ machinery	Suppliers/ independent advisory businesses		Technician/ mechanical/ electrical engineering See Priority 7 below
Communications and connectivity	Owner/manager, support requirements	Non-agricultural specific supply & installation companies	All on-site roles See Priority 7 below

There is some early indication that in particular engineering and data capabilities attached to supply chain requirements are already creating unmet demand in these areas.

6. Businesses Reported Skills Needs - Granular Business Intelligence via LSIP

Please note that the LSIP research will continue until April 2023 in the first phase, with additional needs, refinements, deep dives and any identified new foci to continue longer term until May 2025. These below skills needs findings are based on the initial 3 months of LSIP research and delivery and hopefully indicate (in a no way comprehensive manner) expected 'direction of travel' in the final report. As any additional needs are identified and verified we will share prior to report release with stakeholders in the most appropriate identified means.

The LSIP has worked to gather current in-depth business intelligence on perceived unmet needs, understanding of current delivery and potential economic and technological changes. The intention of the LSIP research methodology is to add current and granular intelligence to existing understanding and not to replace prior research into skills needs, particularly those datasets which could be considered statistically robust.

We have divided these findings into approximated areas of need, and - alongside the sections above on occupational shortages and industrial trends – expect these to form a reasonably comprehensive picture intended to address current and expected unmet needs within the sector, both in terms of interventions in existing provision (micro or modular) and identification of potential new provision (although this falls primarily towards in-work and modular needs due to the methodology utilised in the LSIP primary research phase). The areas these are outlined under are:

- Critical Workplace, Core and Transferable skills
- Core Digital Skills
- Sector Specific Skills, Technological Change and Digitalisation Skills
- Decarbonisation, Sustainability and Alignment to the UK's Net Zero Strategy Skills Needs
- *Systemic/Labour Market/Other reported needs*

We have indicated where we believe businesses have reported these needs most significantly in terms of where they fit within career and occupational progression (from new entrants through to experienced) and believe there are areas of funding and provision that align more or less closely:

Experienced Current Employees (upskilling, modular, CPD)	Experienced/Occupationally Competent New Employees (upskilling, skills gaps, new work functions)	Career movers from another sector (part experienced and/or direct/linked training eg Boot Camps	Those in both work and formal training e.g. apprentices	Younger/New Entrants/non-experienced 16-19 and adults
In-house, innovation/AEB/ LSIF	In-house/bespoke/ Innovation/AEB/ LSIF	AEB, Bootcamps, Other DfE e.g. certificates of future technology, In-house, LSIF	Apprenticeship	T Levels, other 16 to 19 vocational, Vocational HE and preparatory

We do not intend to be prescriptive in suggestions where FE Providers (and others) may see an ability to respond to LSIP skills needs findings, more to indicate where we see current potential opportunities that align with occupational progression, life stages and current funding mechanisms.

Critical Workplace, Core and Transferable Skills

Need Statement	PROVISIONAL PRIORITY	Experienced Current Employees (upskilling, modular, CPD)	Experienced/Occupationally Competent New Employees (upskilling, skills gaps, new work functions)	Career movers from another sector (part experienced and/or direct/linked training eg Boot Camps)	Those in both work and formal training e.g. apprentices	Younger/New Entrants/non-experienced (16-19) and adults
Greater focus on communication skills, including sales and external stakeholder interaction, including in data and engineering/technician/MOR roles	**1. Explore the introduction of Skillbuilder and work entry skills in pre-16 and post-16 academic education** **2. Integrate Skillbuilder or similar and entry skills into non T Level 16 to 19 voc FE**		x		x	x
Attitudes and work readiness	**As 1 above**				x	X
Understanding of sector, independent work ability, project management principles, decision making and critical thinking	**3. Short course programme for existing staff and build into Apprenticeships, 16 to 19 and AEB programmes**		X	x	x	x
Resilience and anxiety in new entrants	**As 1 above**				x	X
Maths, measurement and analytics across all roles in sector	**As 2 and 3 above**	x	X	x	x	x
New entrants expectations and culture transformation (inc. hybrid work expectations) – senior/managerial/owners	**As 1 above**	x	X			
Extended practical experience (such as in sandwich courses) seen widely as immensely beneficial	**4. Further explore employers understanding ofwork placements and provision (Beyond T Levels) into 16 to 19 and HE**			X	x	x
Support for employers/owners to identify/navigate and broker needs attached to upskilling, CPD. Workforce development and reskilling	**5. Establish skills brokerage service for employers**	x	x			
Additional professional upskilling/CPD in management roles: people, project, HR, compliance	**As 3 above**	x	x	X		

Core Digital Skills

Need Statement	PROVISIONAL PRIORITY	Experienced Current Employees (upskilling, modular, CPD)	Experienced/Occupationally Competent New Employees (upskilling, skills gaps, new work functions)	Career movers from another sector (part experienced and/or direct/linked training eg Boot Camps	Those in both work and formal training e.g. apprentices	Younger/New Entrants/non-experienced (16-19) and adults
Wide range of needs attached to the digital transformation of the sector: •data ownership and management •data protection, sharing and security •data driven decision making •data analytics and intelligence •supply chain requirements (and potential increasing needs for compliance/ability) •localised intelligence platforms •data as driver efficiency and productivity •CRM and data platforms	**6. Specialist digital /data basic skills programme (as from construction sector) short course programme for the sector** **7. Build content of 6 into Apprenticeship , 16 to 19 and relevant HE**	X	x	x	x	x
Presentation abilities (more particular to data-led/data intelligence/platform organisations)	**As 6 above**	X			x	x
Microsoft platforms	**As 6 above**			x	x	X
Digital communications and social media	**As 6 above**	x	x	x	x	X
Wider understanding of digitalisation and its impacts on industry/sector	**As 6 above**	X			x	x

Sector Specific and Technological Change

Need Statement	PROVISIONAL PRIORITY	Experienced Current Employees (upskilling, modular, CPD)	Experienced/Occupationally Competent New Employees (upskilling, skills gaps, new work functions)	Career movers from another sector (part experienced and/or direct/linked training eg Boot Camps)	Those in both work and formal training e.g. apprentices	Younger/New Entrants/non-experienced (16-19) and adults
Technology adoption and function: Automation/robotics/drones/ sensors (including data/image capture, potentially service improvement or delivery (spraying), CPD approach preferred (modular upskilling)	**7. Technological change short course programme for managers and those involved in engineering**	X	x		x	x
Connectivity/IoT and importance/ impact on technology adoption	**As 7 above**	x			x	x
Reskilling and futureproofing existing workforce, understanding of sectoral change and change management	**As 7 above**	x	x			
Sensors/ ML and data systems	**As 7 above**				x	x
Data within existing technologies and usage – usage, value, adoption, integration	**As 7 above**	x	x		x	X
AR/VR and simulation as both learning methods and tools in sector	**As 7 above and also explore methods with college**	x			x	x
Understanding current and future changes to sectoral drivers/legislation/policy/ economic factors/ area based payments	**8. Short course offer for all key staff re future of the sector, green economy, achieving net zero, administration etc**	x	x		x	x
Engineering in widest sector, but especially prevalent needs for/to technicians, dealerships and MRO, engineering attached to machinery, livestock, data, buildings & systems	**As 7 above**		x		x	x
Agritech principles and progression for wider sectoral impact	**As 8 above**	x			x	x
Farming is a high technology sector, awareness is low in engineering and data progression routes and CAEIG	**As 7 above**					

Net Zero Skills

Need Statement	PROVISIONAL PRIORITY	Experienced Current Employees (upskilling, modular, CPD)	Experienced/Occupationally Competent New Employees (upskilling, skills gaps, new work functions)	Career movers from another sector (part experienced and/or direct/linked training eg Boot Camps	Those in both work and formal training e.g. apprentices	Younger/New Entrants/non-experienced (16-19) and adults
Energy & efficiency top priorities: • Emissions and scopes • Effective & appropriate measurement • RoI and 'sustainable sustainability'	**As 8 above**	x	x	x	x	x
Validation and standardisation of decarbonisation/ sustainability requirements and standards, mitigation and carbon capture/credits pan-sector	**As 8 above**	x	x		x	X
Fossil fuel usage within agriculture – impact of equipment, alternative and emerging fuels (bio, methane, hydrogen, electrification)	**As 8 above**	x			x	x
Materials, alternatives and wastage/pollution	**As 8 above**	x			x	x
Conservation, biodiversity and stewardship – policy, legislation, practise	**As 8 above**	x	x	X	x	x

Skills & Labour System Feedback

Please note that although these are not explicitly skills needs, these are other issues highlighted by employers and stakeholders that may require addressing alongside interventions in provision directly. We do not suggest that these issues are for FE providers to respond to directly, but these were all raised by enough employers to warrant incorporation

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Sector as whole (outside some data platforms) reports lack of entrants and awareness alongside lack of experienced available workforces, although agri	**Part C LSIP**					

education has seen increasing attraction YOY from non-farming backgrounds						
General populace unaware of lifestyle and worklife balance available in sector	**Part C LSIP**					
Lecturers being lost to industry due to pay inequalities and demand	**9. Programme to attract and retain teaching staff (see also other sectors)**					
Earlier and more in-depth interventions and CAEIG seen as key, assist employers to engage and upskill careers advisors on sector roles, benefits and pathways	**Part C LSIP**					
The country no longer manufactures significant agricultural machinery						
Some concerns about managing hybrid work expectations of future workforce, changing expectations of current learners	**Part. C LSIP**					
Understanding of T Levels is inconsistent, with a number of employers not understanding where these fit within their needs or the requirements attached to them.	**Part C LSIP**					