

Agriculture, Agritech and Aquaculture Interviews: Thematic Analysis

DORSET LSIP

INSIGHTFUL RESEARCH TEAM

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1.0 Introduction

This paper will detail the thematic analysis of interview transcripts from the Agriculture, Agritech, and Aquaculture sectors. In total, 12 one-to-one interview engagements with employers were achieved allowing for clear themes to be generated on the skill needs, perceived challenges facing the industry, and preferred solutions for tackling the skills deficit. Themes will be described in detail, capturing the nuance in the codes, and clear verbatim quotations from interviews will be provided.

Code frequencies from the interview analysis can be viewed on the following google sheet:
<https://docs.google.com/spreadsheets/d/14AZ6AhbEpolwCCUgl1L3D7drUmJXgAk5mPQuV9hMWNA/edit#gid=0>

Executive summary

The skill gaps present in the agriculture sector are wide ranging and highly detrimental to effective work in the industry. Fundamental skills such as basic knowledge of farming principles, maths and English literacy, animal husbandry, arable management and the operation of machinery were all said to be lacking. It is going to be essential that these skills are taught effectively to upcoming farmers to ensure new employees are highly capable.

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As the industry continues to develop, it is important that the skill requirements of the future are considered and implemented in education early. Employers want effective use of modern farming technology and the cutting edge of efficient farming methods to be taught at college level. Having said this, the availability of college courses and apprenticeships in Dorset has been a major challenge and is something that needs to be resolved. Employers have faced considerable issues with apprenticeships being cut and outdated course content. It is going to be important for apprenticeships and agricultural college courses to be reinstated in Dorset with a new and improved curriculum and a large on-farm learning component.

The agricultural sector is highly motivated to move towards the net zero target. The key methods they are utilising to push this forward are increasing efficiency on farms and using new technologies. Although the sector is generally progressing well there are some hurdles that need to be overcome. These difficulties include the variability in seasons impacting soil and carbon measurements which would benefit from greater expertise or government guidance.

Technical Skills		Non-technical Skills		Causes of Technical Skill Needs	
Animal Husbandry	13	Managerial Skills	10	Unattractive Industry	11
Fundamental Skills	10	People Skills	5	Labour Shortage	9
Computer Skills	7	Work Readiness	5	Lack of Apprenticeships	8
English Literacy	7	Communication Skills	4	Shortage of young people	7
Machinery Skills	6	Work Ethic	4	College Courses	6
Data Analysis	4	Motivation Skills	3	Apprenticeship Difficulties	4
Drivers	4	Personal Interest	2	Competition	4

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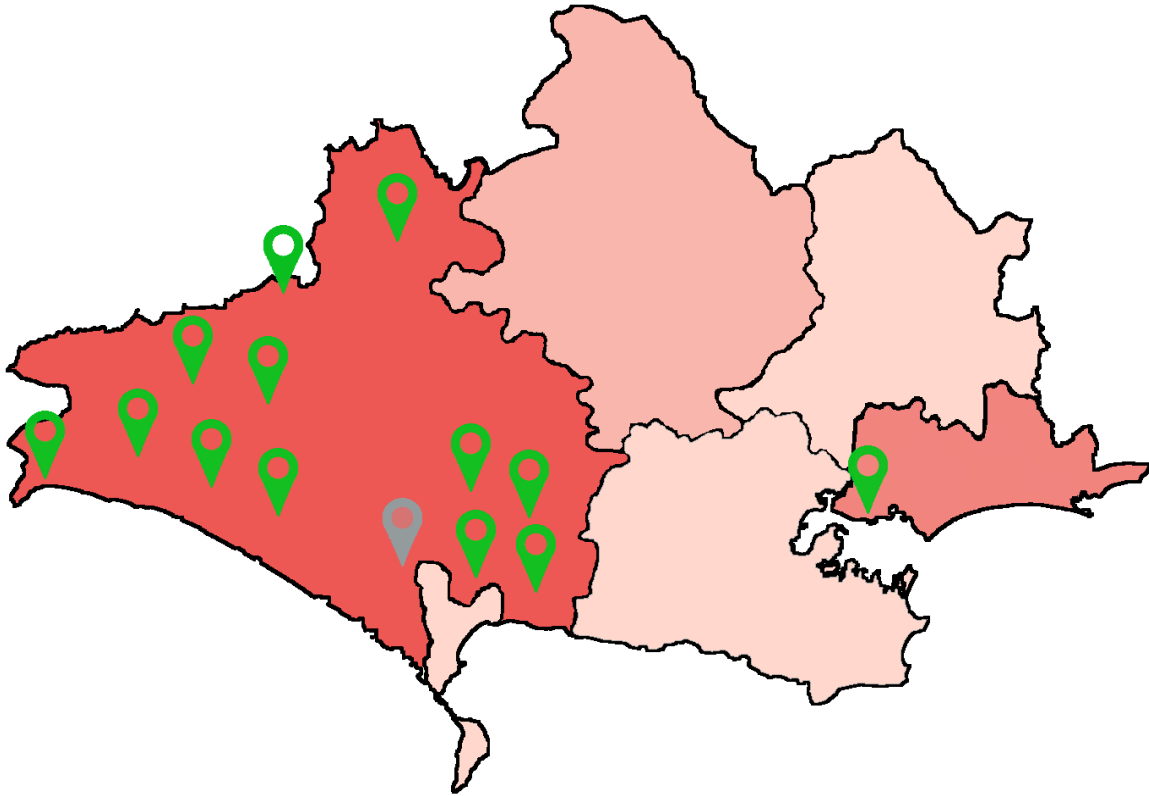
Maths Skills	4	Psychological Skills	2	Brexit	3
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Cross sector methodology

This report will outline the findings of the Dorset Local Skills Improvement Plan (LSIP) research in the agriculture, aquaculture and agritech sector. These findings will provide valuable insight into the current feelings of employers in Dorset and what they desire from education providers. The research methodology used to gather these findings was based on best practices from current literature and is briefly outlined below.

Firstly, a psychometric survey was created and distributed to employers to assess their satisfaction with employee skill levels. This survey was carefully developed in a 3-stage process of item generation, theoretical analysis, and psychometric analysis. The aims of these stages respectively were to generate items that are clearly understood and relevant, to ensure the items have clear definitions and measure the intended construct, and to test the item's reliability and validity. This resulted in a final survey of 12 questions measuring employee's technical skill level, employee's non-technical skill level and the organisation's preparedness for the transition to net-zero. This survey was distributed by the research team and Dorset Chamber resulting in 386 responses. In follow up to this survey, several employers were invited to participate in a qualitative 1:1 interview. For a survey response or interview to be eligible it had to meet the following criteria: the individual must be responsible in some way for ensuring staff have the skills required, the business must operate within Dorset and it must fit into one of the targeted sectors. Interview recruitment was challenging, so to supplement the number of interviews and target specific areas that were underrepresented, direct interview recruitment was used in conjunction with leads and partners provided by Dorset Chamber. The interviews were semi-structured, and 12 interviews were conducted from the agriculture, aquaculture and agritech sector between 25/01/23 and 08/03/23.

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Survey responses:	44
Interview responses:	13

B.C.P	12
North Dorset	8
East Dorset	1
South Dorset	5
West Dorset	18

The interviews were transcribed and anonymised by the research team increasing familiarity with the data. An inductive 'bottom up' process of thematic analysis was used to identify themes from the interviews and involved two rounds of coding. The first-round organised data into meaningful groups and the quotes from these groups were used to create a code book which was then applied during the second round of coding. Additional codes were added as needed during the second round of coding and the whole process was collaborative and iterative. After the second round of coding was complete, themes were identified by multiple researchers individually, reviewed collaboratively and then finalised.

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The following report describes the final themes in detail and provides a clear representation of the views of employers regarding skill deficits, the causes of these deficits, potential solutions and where they are in the transition to net-zero.

2.0 Skill needs.

This section will detail the priority technical and non-technical skill needs outlined by employers during the one-to-one interview engagements. Along with this, clear future skill needs will be outlined, detailing aspects of roles that employers expect to become more important in the upcoming years through developments in farming.

2.1 Priority skill needs

Fundamental Skills Are Lacking

A priority area outlined by employers was fundamental skills. More specific fundamental skills will be discussed in more detail in upcoming themes, but first, it is important to outline the perception from employers that employees coming through are lacking in the core farming skills needed in the workplace. There is the feeling that fundamental skills have become less of a focus in development, but they will continue to be key skills for businesses. Additionally, having the core fundamental skills in place will be important for the future to allow for more innovative methods of farming to be integrated with higher-level skills development.

Transcript 8 "Learning the basics in agriculture and how our farm runs through the seasons and yeah some sort of things like, sort of learning to use different tools and doing different jobs, you know, sort of learning like you know sort of chainsaw training and fencing and sort of a bit of sort of veterinary science and cropping you know"

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Transcript 8 *"I: So you think it's more going back to the fundamentals then? P: I think so because I think then if the fundamentals are in place, I think that can be adapted to sort of the modern technology, which I think young people tend to pick up very quickly anyway."*

Transcript 9 *"We should go back to we need the brightest and the best, but we do need that core information to be delivered"*

Transcript 12 *"It's very difficult to find people that will come straight into the industry with the core skills that we need."*

Animal Husbandry

One of the priority fundamental skill needs outlined by employers is in animal husbandry. There is a need for more employers to have the ability to manage animal stock, monitor animal welfare, and administer animal care. These skills are very important within the industry, but there is a lack of people with those skills. Furthermore, as will be discussed further, having the fundamental animal husbandry skillsets in place will allow for future farming efficiency to be possible - an area that will be particularly important for the transition to net zero.

Transcript 8 *"I think probably, probably the main one would be, I feel is sort of good stockmen, really, people who are good with animals..... I suppose the colleges need to still be able to put the basics in place and around agriculture and the sort of care for animals"*

Transcript 8 *"I think it's probably attention to detail in terms of care for animals. And it's picking up when an animal is not very well, any health issues and it's sort of just really good hygienic routines, which can be sustained and you know, it's understanding all those sort of routines and how sort of important mastitis detection and sort of, you know, heat stress detection in animals and, you know, helping sort of feed the animals efficiently in terms of good consistent diets"*

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Transcript 10 "I come back to the point you got when I get a new person on the farm, I say to them, "right, you've probably never injected an animal before, but I'm going to show you how to inject an animal, but I want you to tell me about this bottle of antibiotics" and I pass on the antibiotics. In other words, I want to know when the sell by date is, I want to know what the dose rate is and so on and so forth."

Transcript 2 "You need people to milk but there aren't many."

Arable Management

Along with the fundamentals of animal farming, there is a need for more skills in arable management. These can come in skills related to dealing with crops and soil management. These core, fundamental skills will continue to be in priority for agriculture businesses. It was outlined that skills in arable management would be important in relation to the transition to net zero and reductions in carbon and waste caused by overproducing.

Transcript 9 "But that phrase, what it really means is we have to stop losing topsoil at the rate that we're losing topsoil, because it's very long term to create topsoil. It's a very long process. And so we have to manage the soils far better than we have been. And the environment, we've got to do things in carbon neutral ways"

Transcript 8 "Learning to sort of, learning the basics in agriculture and how our farm runs through the seasons and yeah some sort of things like... cropping you know"

Transcript 6 "But I think we're just probably efficient cows, good husbandry and just looking at the way we're planting crops and things."

Transcript 6 "It's not looking to the same things, it's looking to improve things to regenerate them. Person 1: Yeah I did see something in one of your bios about soil quality. Would it be that type of thing? Person 2: Yeah exactly"

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English Literacy and Maths skills

English literacy and maths skills were outlined by employers to be extremely important, and they value employees coming through who have good fundamental English and maths skills. However, particularly with English literacy, there is the perception from employers that many young people coming into the industry have very poor English literacy rates, but those are fundamental needs for businesses. Furthermore, where foundational maths skills are important, they will also be essential in the future in relation to data analysis – more machinery use will come with increased use of data, and there will be a need for skills in being able to interpret that data.

Transcript 7 “And what was so good about the [provider name] people is they got their Maths and English GCSE, and I’m adamant that yeah it is so important in life”

Transcript 9 “Well, for a start, they need to be able to look at data and a lot of them need to be part of the support industries as well.”

Machinery Skills

Where farming is a rapidly changing industry and is quickly becoming more mechanised and computerised, there is a need for more people to have good hands-on machinery skills in the workplace. In relation to this, maintenance skills will be required to help upkeep the machinery used on farms.

Transcript 8 “I: What does good agricultural training look like? Person 2: With modern agriculture getting a lot more technical, a lot more mechanised. So it's sort of training in terms of use of machinery, probably training in terms of looking after animals and running milking parlours and management of stock”

Transcript 7 “Yeah okay. So it does sound like agriculture is really moving, is a fast paced industry in the sense ... Person 2: Yeah and the machinery side is even more.

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You've got all these GPS systems that we use and all our systems that we use for keeping the grain stores all cool and dry"

Transcript 7 "But it's ... it's attaching the electrical side to the physical side and understanding what the gains are. And all this electrics it all needs maintaining, we live in a very hostile environment and anything computer based or electronic based it has a ... and you need to know how to reboot it you need to know how ... when the weather pisses on it, breaks all the mother boards or whatever, yeah its ... you've got to be ... and understand how to wire up an internet connection to keep everything going."

Computer Skills

As with most industries, the agricultural sector is becoming more computerised in the methods used. Due to this, there is a need for more people to have good, foundational computer skills to allow for adept uses of different systems used on the farms and this aspect will tie in well with skills in using machinery.

Transcript 8 "I: Is it just learning the machinery? Because I imagine there's multiple suppliers right? P: Yeah. Yeah there is yeah. I mean it's definitely not hard, I mean you know they've made these machines easy to operate but I think it just comes with a bit more of a sort of technical type, computer sort of side to it. Which you know, someone with a bit more computer skills."

Transcript 7 "I: So, what are some of the technical things in farming that are really present P: So, you've got all the ... even in the dairy with the all the amount of IT we use in the dairy. Either maintenance or the electronic side of it is huge in how we look after these animals"

Transcript 11 "So for example right now with the website we need help at the moment with the IT and while obviously we have some skills in house, it's not enough to do that"

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Transcript 10 *"It's a really difficult question because it's such a broad spectrum, like from the warehouse to the office to IT to game keeping"*

Tool Skills

Different tool skills are important within agriculture. In particular, employers outlined that training on using chainsaws would be helpful for employees on the farms. However, employers outlined that there were not any local colleges offering training for these tool skills.

Transcript 8 *"Sort of learning to use different tools and doing different jobs, you know, sort of learning like you know sort of chainsaw training and fencing"*

Transcript 7 *"I: Are they not getting that at the moment though? P: Well they were, they were, so all my lot... and I tell them if there's a chainsaw course get the chainsaw course, get the sprayer course done and all these things, now I've got a lad wasting 3 hours a day driving to (Redacted) college and back."*

Drivers

Along with more hands-on tool skills, agriculture businesses are in need of more drivers to suit their needs, included in this are people with abilities to operate telehandlers. However, there is the feeling that employing drivers can be costly and difficult when in competition with other industries.

Transcript 12 *"So yes, that's one and then the full time staff - we've got varying roles. So we've got transport and distribution type roles - drivers are definitely something that we need. So we quite often have to recruit drivers through agencies which is extremely costly compared to obviously employing them directly."*

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Transcript 2 *"You need tractor drivers, but then they can get paid more to drive lorries"*

Transcript 3 *"the telehandler course is a fantastic example, but its leaving a gaping hole, I've got 3 youngsters working for me that haven't been on the telehandler course. And that from a health and safety point of view for me is a huge failure."*

Management Skills

People with good managerial skills are needed within the agricultural sector. There are needs for good management skills in terms of leading and motivating staff and in business management, but these management skills will also be important when it comes to the animal husbandry side of the business to improve skills in managing animals.

Transcript 12 *"So one of the biggest challenges we get is, you know, we train up staff but the actual experience of understanding how to get vision across the people, how to motivate people and how to support people, that's probably the hardest and the longest bit"*

Transcript 12 *"But personal skills, in terms of people management is a really important part because, everyone's different and therefore I coach all my staff on how to talk to people and how to maintain relationships and get trust and build teams themselves and quite often, it's done in the workplace,"*

Transcript 8 *"I think you know in in fairness, you know there is I think, probably the farms have got bigger, so they've sort of taken in other small farms. I mean there is still small family farms but generally the... so there is quite good opportunities at sort of management level."*

Transcript 8 *"Probably training in terms of looking after animals and running milking parlours and management of stock. So all that type of thing is probably quite crucial"*

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Transcript 3 *"I: It looks like a lot of business planning. P: People think farmers just sit on their tractors all day but they are good at managing businesses.... Farmers aren't market-makers, they don't set the price. They produce and then get told the price by someone else. To manage that you need a lot of awareness of cost and revenue plans long term. You can't just start a farm instantly"*

People Skills and Communication

People skills and communication are important. Businesses feel that a lot of people coming into the industry can be lacking in these skills, where there is a need for people to be able to have abilities in communicating ideas across and to have good teamwork skills to build relationships between colleagues on farms.

Transcript 6 *"I: So is there anything you feel is missing from the training that is currently provided? P: Possibly people skills like working alongside other people."*

Transcript 6 *"And do you think that's across farming? Person 2: Yeah I suspect so. Because it's the ones not really sure what to do that shy away. Some of them are quite insular and find it hard talking to other people."*

Transcript 12 *"how do you have that tackled in a college type syllabus environment? Yeah, it's nearly psychology. That would be explained to people as what behavioural characteristics of people are, about how to get people to commit to doing a job and working together, how do you get open free communication within teams, the importance of discussing ideas, looking for ways that people are shortening the job."*

Transcript 7 *"And it's not just growing the skills it's growing the individual into a nice person, and they're all ... a lot of mine ... the ones I pick up, I go for the ones that are bit ... they've been a bad bugger at school and fallen out with all the teachers but I find those ones have a bit of go in them"*

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Work Readiness and Work Ethic

Employers within the agricultural sector indicated some concerns about the work readiness and work ethic of employees. These aspects are important for this industry, where early hours and difficult job roles can often be unattractive. Therefore, there is a need for greater levels of work readiness in people coming through.

Transcript 6 "I: What are some of the skills you currently find are short in the labour force, what skills are difficult to find?P: Probably work ethic..."

Transcript 12 "But I think it's a great idea what you're doing because what employers really want is people who understand, are fairly clear minded and are prepared to put the hours in and work hard"

Transcript 12 "Quite often, the youngsters that are coming in through post A levels that want to stay in the area, just don't have that kind of experience"

Transcript 6 "On the other hand, we live in a lovely place and I've got a lovely view, but I'm not exposed to the big, wide world. And when you're young, I think it's really important that you generate exposure to the big, wide world. And you also create a network of like minded young people, and they all share ideas"

2.2 Future Skill Needs

More Efficient Farming Methods

An important focus within the interviews was the transition to more efficient farming methods. There is a need for people on the farms to have skills in being able to carry out more efficient farming and to improve yields on the farms. The fundamental skills noted

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previously in animal husbandry and arable management will be important for allowing this higher level, more efficient skillset to develop. As will be discussed further, this aspect will be essential for the transition to net zero.

Transcript 8 "And I think probably again sort of mechanisation and improving efficiency on farm. So there's big encouragement of that, you know, I think there's more encouragement for almost increase yields from ... so the cows and wheat yields because you know, if you can produce more milk from less cows you're probably releasing more, less sort of emissions."

Transcript 8 "I: It sounds like you need a higher kind of skill set, you know, there's less people, it becomes more automated and robotic. P: Absolutely yeah, which is probably the same for most industries but it's sort of, you know, there's a there's a big move to improve the efficiency on farms."

Transcript 6 "I: What are some of the big changes that are affecting you? P: Just really different ... you know different way to reseed ... it's quite specific in agriculture ... different methods of farming. I: Okay so what's some of the new methods that you guys are embracing there? P2: Along the lines, I don't really like the word, but regenerative farming, so like different ways of farming."

Transcript 9 "And the environment, we've got to do things in carbon neutral ways. And of course, all that is very technical and the same goes for animals."

Modern Technology and Computerised Methods

As the agricultural industry advances, there is the expectation that the workplace will continue to become much more technological with the use of more modern equipment and processes. Within this will be the use of more computerised methods of farming, which relates back to the need for more computer skills on farms. Due to this, there will be the need for people to have skill levels to be able to use those new technologies.

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Transcript 8 “so we've probably got machines in place which would milk higher numbers of animals at a faster pace. So sort of rotary parlours for the goats which can milk sort of 900 goats an hour and on the cow side, you know ... quite modern sort of computerised milking parlour.”

Transcript 7 “I: So it does sound like agriculture is really moving, is a fast paced industry in the sense ... P: Yeah and the machinery side is even more. You've got all these GPS systems that we use and all our systems that we use for keeping the grain stores all cool and dry”

Transcript 9 “It's going to tell the staff when the cow is coming into oestrus and therefore can be served and put back at the calf. It's going to tell the staff when it's going to be lame in two days time. It's going to be able to tell the staff when the cow is going to get mastitis in two days time, et cetera, et cetera. And the staff have got to be able to understand the data and be able to interpret it.”

3.0 Employer perspectives on Challenges and Causes

This section will detail the main challenges faced by employers in terms of limiting their ability to upskill employees. These aspects are perceived by employers to be potential causes of key skills deficits in the industry.

Apprenticeships

Many employers have faced difficulties in their abilities to be able to offer apprenticeships. It was outlined that local colleges cut apprenticeships which were valued highly, while smaller businesses feel that a lack of funding and different government regulations have made it difficult for them to be able to offer apprenticeships.

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Transcript 6 *“So apprenticeships are really important butt they have ditched them from our local agricultural college.”*

Transcript 7 *“I: Why haven't they been on the course, is it not available? P: Well they ...this term should have been done. All the work land based apprenticeships at [redacted] were going to get done at this time of year.*

Transcript 9 *“I know of one college that stopped doing apprenticeships altogether as a result, and that's just shocking. Which college? Well, it's a local one, let's just leave it at that.”*

Transcript 9 *“And the apprenticeship levy is really working for him. Yeah, but it's not working at the other end of the scale for small employers like me. And his employer is really pleased to be able to use this levy to fund him to do this MBA and some others as well. That's great. So I'm not against the principle of it, but for small employers it's just been a nightmare”*

College Courses

Some employers held concerns about college courses for the agricultural sector. Employers outlined that they feel many of the courses have syllabuses which need updating and are teaching skills that are not currently relevant to what employers need, thus, there is a need for the syllabus to be more relevant to the needs of employers.

Transcript 6 *“Person 1: Yeah that really does make sense. How far out of date do you think the syllabus is then. Are we talking 5 years or 10 years say. Person 2: I think it could be 10 years even more.”*

Transcript 9 *“I: But with a big update on the courses, they're also saying that a lot of these courses are really quite out of date when it comes to it. P: I absolutely agree”*

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Transcript 12 “You can send someone to [redacted] to do a diploma in agriculture but what they'll be doing there is totally unrelated to what we do here”

Labour Shortage and Shortage of Young People

The agricultural sector is another industry which is struggling due to a general labour shortage. Within this, is the concern with the lack of young people coming into the industry. Young people are valued highly in this industry, and employers are interested in taking more young people on, but the shortage makes it difficult. Furthermore, some employers outlined concerns regarding Brexit having an impact on the labour shortage and skills deficits, where they no longer have access to foreign employers to fill gaps.

Transcript 8 “It's probably all round with agriculture so it's you know there is a shortage generally of staff in the agricultural industry.”

Transcript 7 “But I think ... with these farms in West Dorset, we're going to really struggle to run them. And why would you want to continue dairy farming if it's just a constant bloody worry of finding staff.”

Transcript 8 “There's probably, probably good, probably those existing employees are generally pretty good and have been in it a long time, but in terms of the younger, youngsters coming through this generally a sort of lack in people who want to be involved in looking after animals, looking after stock”

*Transcript 1 “I: What would you say the main shortage of skills at the moment was?
P: Just labour in general really, young people like me aren't getting into farming, there are a few lads that will, but that's not enough. You can't get people to work from the cities because it's not worth the money.”*

Transcript 9 “Brexit has been a complete disaster. I cannot think why any farmer ever voted for Brexit, although the majority did, apparently, and our skills gap was being filled by Eastern Europeans. I mean, we used to employ four people here, half

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of which were Polish, and the Poles were brilliant. Now they've gone home because we've made them feel very unwelcome through Brexit. I can't believe how successfully we've shot ourselves in the foot"

Unattractive Industry

Along with the labour shortage being felt within the industry, employers have the perception that agriculture is not attractive enough to bring new people into the industry. They feel that the long hours and early starts associated with farming are off-putting for many, as are many of the incorrect stereotypical views held on the outside around what farming is.

Transcript 8 "I think, where there's perhaps a bit of a shortage is of kids wanting to go onto farms, you know that... you know, it's not a particularly doesn't sound particularly glamorous sort of career path"

Transcript 7 "well there's a lack of numbers, so I'm not going to shy away from the fact there's a lack of numbers that make it not viable but ... yeah that's a huge failure"

Transcript 1 "It's hard work farming and people don't want to drive a tractor or milk a cow for minimum wage."

Transcript 9 "So we need the absolute best, for a start, and we have to change the perception that farmers wear a smock and chew straw. I'm exaggerating, but we've got to change that perception to make it an attractive industry for people to come into, to attract the very, very best and the very brightest."

Competition

A further challenge held by employers in agriculture is in relation to competition felt in being able to attract and keep employees. This competition has been noted to come from

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other businesses within the industry, but also attracting people from other industries with relevant skills to take on roles in agriculture.

Transcript 8 *“I think they're getting sort of sucked away by all the sort of that sort of..., you know, bigger sort of companies”*

Transcript 12 *“And therefore we pulled in either degree students over the years from [redacted] university or places like that. But they just see it as a training opportunity for them, so they only ended up staying for a couple of years and then moving on elsewhere”*

Transcript 2 *“You need tractor drivers, but then they can get paid more to drive lorries”*

4.0 Employer perspectives on preferred solutions

College Courses and Updated Syllabuses

Employers in the agriculture industry value college courses for delivering skills needed by employers. Many employers outlined the classroom environment to be essential to allowing employees to learn and develop key skills. Within these college courses, however, it was outlined that there is a need for the syllabus to be more up to date for current skill needs.

Transcript 8 *“you know, growing, good quality, forages and and all that, all that, those sort of skills, which you should probably learn more from experience, but can be sort of the fundamentals and the reasons why they are so important can be sort of taught at college level really.”*

Transcript 9 *“Yeah, that's right. We're not that typical, because a lot of them would be dairy farming, but I would be enabling young people to spend more time in college.”*

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Transcript 12 *"So, you know, in terms of educational training, it's great to have people that have been trained up in Agriculture and horticulture. Those are probably anything from national diplomas up to higher national diplomas - although it's not really that common these days"*

Transcript 6 *"I think the syllabus could probably do with a revamp. I think there's lots of different things going on in agriculture now that probably aren't in the syllabus."*

On-Farm Learning

Along with classroom-based learning, employers value giving learners the ability to develop skills through on-farm experience. Thus, blended learning opportunities are valued highly for providing the best skills development through a mix of classroom and on-farm learning.

Transcript 12 *"I think one thing that I always try to encourage the college to do was to get more placement experience. So there are businesses out there that would be very happy to take on placement and experience opportunities, you know, particularly out of term time to allow students to get some real sort of hands-on experience. And that's one of the missing gap"*

Transcript 9 *"So actually, you're much better to get all the young people in college together, not necessarily five days a week, but let's say three days a week, two days a week on farm and three days a week in college. And actually do all the college training quicker together, and then let them go out onto farms for two days a week to get the practical experience, because they definitely do need that."*

Transcript 7 *"I: So that sounds like that's the skills the next generation needs. It's the more technical side of it as well as ... P: It does come from experience"*

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Apprenticeships

To add to the comments highlighting employers valuing a mix of college learning and on-farm experience, apprenticeships are valued. Many employers would value more apprenticeship opportunities being available.

Transcript 6 "So apprenticeships are really important they have ditched them from our local agricultural college."

Transcript 8 "You know, we've got a lad now with us full time he was a... who went to [redacted] more probably to the sixth form there and did sort of day release course, I think, you know that type of thing works, works well, so a bit in the classroom and a bit sort of more sort of apprenticeships on farm. I think that sort of does work well and there's plenty of opportunities on farms"

Transcript 7 "But we've had huge... really good success recently with, with our apprenticeships. And yeah, we prefer to take take them in at 16 and teach them how we want it done"

Investing in Youth

Employers place a lot of value in youth. To help bridge the gaps in skill deficits related to the labour shortage, many employers outlined a need to significantly invest in youth and encourage more young people to come into the industry. Some employers outlined the necessity of recruiting young employees to allow businesses to continue on into the future.

Transcript 8 "I think probably as we're we're sort of involved with the Agricultural society and we're we're sort of our remit is more for sort of trying to sort of encourage young people into farming really and you know, because we sort of, it has been flagged up that there is a shortage of youngsters coming through the school"

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Transcript 7 *“we’ve got very experienced herdsman and ... they understand, the older generation understand that if we don’t invest in the youngsters, then our industry is not sustainable.”*

5.0 Employer perspectives on Net-Zero

This section details the most prominent focuses and concerns within agricultural businesses related to their abilities to meet the transition to net zero.

Efficiency is key

To meet the transition to net zero, efficiency in all aspects of agricultural businesses will be key. Employers have outlined a need for farming efficiency in terms of attaining greater yields from crops and animals while reducing overproduction. Additionally, employers have outlined the need for energy efficiency to limit energy usage.

Transcript 8 *“And I think probably again sort of mechanisation and and improving efficiency on farm. So there's big encouragement of that, you know, I think there's more encouragement for almost increase yields from ... so the cows and and wheat yields because you know, if you can produce more milk from less cows you're probably releasing more, less sort of emissions.”*

Transcript 6 *“We’ve done a lot of soil sampling over the last 5 year period and based on our climate checks and our soils ... improvement in soil and carbon storage he thinks we’re there already. But obviously we can’t quantify that at the moment because obviously the legals around that are too much. But I think we’re just probably efficient cows, good husbandry and just looking at the way we’re planting crops and things.”*

Transcript 12 *“But yeah, driving efficiency in the business has probably been the key part. Reducing the amount of fertiliser we're putting on, filling trucks, reducing the*

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overproduction and waste within our business, finding ways to be more efficient generally in the business to reduce fuel, and energy consumption”

New Technology and Renewable Energy Use

A key aspect of the transition to net zero will be through the use of modern technology and renewable energies. With the push towards more efficient farming and more efficient energy use, technologies will be key to allowing this. Thus, there will need to be more people with the skills needed to implement and use these technologies.

Transcript 8 “What kind of skills are you going to need to lower your carbon footprint as a farm? Person 2: I think probably if you know, I mean we’ll probably need just to be sort of aware of sort of new technology and we’re probably all going to have to try and invest within the farm to sort of try and sort of, update methods and equipment so that we are sort of moving towards sort of more of an efficient farm really.”

Transcript 8 “I definitely think there’s over the next 10 years, there’s gonna be a lot of reinvestment on farms because with the farm payments, so the single farm payments ... that’s more getting diverted into sort of environmental type projects, just sort of help farmers get towards net zero. So I think we’ll probably see more use of windmills and solar panels”

Transcript 12 “So eventually, yeah, we will start installing renewables or looking at projects. We’re looking at a project at the moment about trying to extract nitrogen and phosphates from the river water to then sell those credits. So there’s things that we can do which are all quite niche and novel.”

Difficulties

Many businesses outlined the difficulty of being able to meet the transition to net zero. Aspects of the transition, such as carbon calculations and soil measurements, can be

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difficult in farming, particularly with the variability in seasons that can affect different practices. Thus, higher-level skill sets will be needed to help in this area.

Transcript 2 "I: do you know what it would take for you to be a net zero farm P: well we farm mostly on SSI so I would think that we are nearly there. You can calculate it, you have to work it out but it's very complicated. There are formulas for the size of hedgerows and the grass types. But different grasslands will capture a different amount of carbon depending on the time of year and type."

Transcript 5 "Net zero, metrics, questionable due to variability of farming data like weather where you can't compare."

6.0 Business Needs and Recruitment Focusses

This section will detail any specific business needs and recruitment focusses that are not specifically related to skills and the skills shortage within the agricultural sector. One important area in business needs that has been discussed previously in section 4.0 is the business's need to invest in the youth. This aspect will not be touched on again here.

Business Planning

An important area noted was the need for more business planning in the agricultural sector to allow businesses to adapt and succeed in more difficult circumstances. Employers feel that further business planning would help to improve the sector as a whole. Due to this, there will be a need for more skills within the business management side of the business.

Transcript 1 "To me, a lot of this is just regular business planning. Most farmers are actually just good business men, they aren't going to farm unless they know they are going to get paid for it... The generation before me have grown up on farming based on subsidies to make it pay, I'm just looking at this like it's a business that needs to be planned out rather than the subsidies first."

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Transcript 7: *“And yeah it is a problem so the rest of us that are trying to be progressive and be forward, we’ve lost a side of our industry really.”*

Transcript 4 *“People think farmers just sit on their tractors all day but they are good at managing businesses.... Farmers aren't market-makers, they don't set the price. They produce and then get told the price by someone else. To manage that you need a lot of awareness of cost and revenue plans long term. You can't just start a farm instantly.”*

Industry Demand and Rising Costs

Businesses within agriculture are suffering due to increased industry demand and rise of costs of farming. There is the perception that farming is already an expensive industry to enter, however inflation and rising costs of necessary products such as fertiliser are not helping matters and are making life increasingly difficult for businesses.

Transcript 3 *“I: Why do you think that is? P: farmers have been underpaid for a long time because food prices have been kept low. You have inflation at 11% but then you have farm inflation that is far more than that, fertiliser has gone up 300%”*

Transcript 9 *“And for me, because the supermarkets wield all the power and drive the margins tighter and tighter and tighter, us farmers are squeezed between them and very large suppliers and inputs, be they international companies for fertilisers and seeds or feed. And we are in the neck of the hourglass between the two, really, and are being really tightly squeezed”*

Transcript 2 *“what makes farming is we don't sell at the price we want, we produce something,- then market says what the price I will pay is”*

Transcript 2 *“Well I'm new to farming so I'm just working up.. you can't just get into farming as it's too damn expensive.”*

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Overseas Recruitment

Previously discussed was the challenge facing businesses regarding the impact of Brexit. Overseas recruitment is an area that can be a major bonus for businesses in the agricultural sector to help bridge skill gaps throughout the seasons where short-term recruitment locally can be difficult.

Transcript 2 "I: Is it labour shortages across the board? P: yeah, it used to be that 60% of labour would come from overseas, but now after Brexit that isn't happening anymore"

Transcript 12 "And then the rest of the staff from that seasonal period, which is about 8 to 10 months, we would then need to recruit really from overseas because historically, we found that that's the only way to get that type of seasonal work force in. So, they're coming from anywhere from Poland further east. And we would probably have a sort of demand for somewhere like 15 staff, some of them, you know, we are getting back year in year out because they've got settled status and therefore that is a continuation"

Transcript 7 "So what we're experiencing in the last ... and this hasn't just happened over night ... it's the 30 to 40 bracket. It's just... it's been lost in our local area"

Conclusion

Currently the agriculture, agritech and aquaculture sector in Dorset is struggling. There is a labour shortage particularly in the younger generation and there have been significant issues with apprenticeship providers in the county. We found that employers within the sector were very engaged in the research and are hopeful that it will bring about positive changes to resolve their most pressing challenges.

Firstly, it is important that the fundamentals are covered to a high standard. This includes the general underlying theory of farming as well as the practical skills side of animal

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husbandry and arable farming. A crucial element of teaching these skills will be time spent on farms getting hands-on learning opportunities. Blended learning teaching methods were said to be the best way of teaching the underlying principles and practical skills simultaneously and should be incorporated into apprenticeships and college courses where possible.

The second key skill deficit in the sector that should be addressed through post-16 education is the competency in operating and maintaining machinery as well as foundational computer skills. These skills will need to be taught to increasingly high levels as farming continues to implement new technologies and computerised methods.

Finally, In addition to these specific skill needs, it is important that colleges ensure that students have achieved basic qualifications in maths and English. This should be mandatory for those students who have so far failed to achieve this in earlier education and would benefit them significantly.

In regard to the transition to net zero, employers in the sector were generally very aware of the target and were in the process of actively moving towards it. Having said this, some hurdles were raised such as the difficulties in getting accurate soil and carbon measurements due to high variability between seasons and location. This is something that could be included in courses to help move the whole industry forward.