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Matt Eastland [00:00:06] Hello and welcome to The Food Fight podcast. I'm Matt Eastland.

Lukxmi Balathsan [00:00:09] And I'm Lukxmi Balathasan.

Matt Eastland [00:00:12] And today's show is a special one as we're recording as part of New Scientist Lives Future of Food and Agriculture Day. Thanks for having us.

Lukxmi Balathsan [00:00:21] Now, if you're new to this podcast, EIT Food is essentially Europe's leading food innovation community, an organisation with a mission to make the food system more sustainable, healthy and trusted. On this show, we like to meet people from across the sector who are fighting for a better food future, whether that be with new products, farming techniques, technology or activism, as well as tracking the progress of some of the most exciting start-ups in space.

Matt Eastland [00:00:44] Yeah, so from lab grown meat to AI-assisted farming, we believe that the agrifood sector is an incredibly exciting space to be in right now. But how can this increasingly important industry continue to attract the talent and skills that it needs to tackle some of the world's biggest problems? And do young people and entrepreneurs realise that the opportunity exists? So with us to debate and share their own stories, we have three very talented guests.

Lukxmi Balathsan [00:01:12] So first up, we have Carl Edwards, he is the Director of Education of Public Engagement at LEAF, which is a linking environment and farming organisation. There his mission is to inspire and enable the next generation of sustainable farming and food production. So thanks for joining us today Carl.

Carl Edwards [00:01:27] Thank you Lukxmi and thank you Matt.

Lukxmi Balathsan [00:01:29] Next up, we have Yka Marjanen. He's a serial entrepreneur in the food space and a co-founder of Grainsense and also Manna Insect. Two very innovative companies involved with the EIT Food. They are solving different problems that, we'll let him explain a second. Great to have you on the show.

Yka Marjanen [00:01:44] Yeah, thanks.

Lukxmi Balathsan [00:01:45] Finally, our very own Barbara Mason. She joins us from EIT Food, where she manages an agrifood training partnership with the University of Reading. Hi, Barbara.

Barbara Mason [00:01:54] Thank you.

Matt Eastland [00:01:55] Welcome everybody. It's an absolutely delighted to have you here. So let's kick this off then. So we might be biased in saying that the agrifood sector is a cool place to be right now. So we're dealing with innovation, with solving real world problems and creating exciting products and solutions. But from the outside looking in, do you think that the agrifood sector maybe has a slight, let's call it branding problem in that to the average student, the old image of traditional farming and slow moving corporates is kind of what initially springs to mind. So Carl, I'd be interested to get your view, just to start.

Carl Edwards [00:02:33] So we were having the same conversations in 2018 and we were quite keen to actually ask young people directly what did they feel? So we launched a piece of teenager research, if you like, for the industry in the UK. As LEAF education specifically, we felt very much that work was being done with young people at a university age and above or at a primary age, but not really within that middle ground of teenagers, secondary schools, when a lot of young people start to make those decisions about future career opportunities. And we asked twelve hundred young people across the UK that exact question would you consider a career in our sector and what do you think about our sector? And we were overwhelmed that over two thirds of young people actually came back and said, yeah absolutely, we're really interested in what you're doing.

Matt Eastland [00:03:24] Amazing.

Carl Edwards [00:03:24] We want to know more about where our food is produced. And then a third of them actually said we'd even consider a career in that sector. And out of everyone we surveyed, only four percent of those young people had ever had any information about our sector, career routes, opportunities in.

Matt Eastland [00:03:44] Is that right?

Carl Edwards [00:03:44] So it was really interesting. We also asked them about their perception of the sector of both the food and farming sector and hardworking, labour intensive work - two of the words that came up high on the list that they associated with our industries. However, they also felt that science and technology were some of the underpinning points that our industry would have to adapt, adopt as we move forward as well. So it was quite a mixed bag in that sense, but on the whole, really, really positive.

Matt Eastland [00:04:20] That is fascinating. Really encouraging as well. And just on the science and technology point, Barbara, is that something that you agree with? Is that these are things that you're seeing as well?

Barbara Mason [00:04:30] So absolutely agree that there's a whole wealth of things from the science and technology perspective, and they are transferable across the whole science and technology piece, they're not just specific to the food sector. But one of the things I think is quite interesting, and it kind of follows on from what Carls just said. So thinking about this from a university students perspective and again, it's a question that we've asked, why are numbers relatively low on, not necessarily agriculture courses, but food type courses across university students? And I think there seems to be a bit of a disconnect with where they think they're ultimately going to go. One of the visions that people seem to have in their mind, kind of like farmers being labour intensive and so on. One of the things that they think of in the food industry is it's standing in white wellies in a freezing cold factory at two o'clock in the morning on a boring production line. And it kind of gets forgotten that it's, that there are other things to it. All people immediately leap to the supermarket and don't actually realise what goes on behind the scenes in the supermarket or the supermarket area and the science and technology that fits with that. So I think from an undergraduate level, there's mixed messages and absolutely there's huge amounts of things that can be done. But where that will take you and how you can do that, I think we do keep that secret rather well, unfortunately.

Matt Eastland [00:05:56] Ok yeah, that's good to know. And Yka, just talking about this being a well-kept secret. I mean, is that your experiences? Do you think that the sector has a reputation issue or what do you think?

Yka Marjanen [00:06:10] Well, I don't at least from my point of view, the bubble I lived before founding Grainsense was that I didn't even think it wasn't even a reputation or brand there wasn't any two to think about. So, I mean, I, I came to Grainsense by going to have a beer with an optical engineer. Nothing to do with agriculture or anything. And then when we sat down, it became evident that the technical innovation of optical measurement, they actually had found that agriculture might have need for it. So even they didn't think agriculture as the primary case. But because they got so many responses that measuring protein is important, that we as a team kind of decided that, ok, agriculture is the main market segment for our product and we will optimised for that. So and the same happened with Manna. I mean, I definitely have not been personally interested in insects ever in my life. I just met a researcher with my colleague who is also a serial entrepreneur, and we got excited about the potential impact that we can provide as an engineer and a biologist to this area. So the area itself didn't interest us at the beginning, but the potential of making an impact was the reason.

Lukxmi Balathsan [00:07:39] Do you mind explaining a little bit about one Manna Insect and actually does?

Yka Marjanen [00:07:43] What we got interested in is that there is so much biowaste that needs to be processed and now only way to really do it is using a biogas plant. And the problem is that the nitrogen especially is lost more or less from that, in that process. And nitrogen is one of the important ingredients in the whole of life. So when we found out this insect black soldier fly larvae, we got excited because it can so well process biowaste and turn it into protein feed. So our job is to make that available at the industrial level for both biowaste companies and food industry that does have a lot of side streams or waste, more or less. And then on the other hand, provide a feed, raw feed source for fish industry and pet food and based on legislation also to chicken and pig side, because there's a huge protein need in those sectors. Even if the veganism becomes more popular, there's still need for meat in many sectors.

Matt Eastland [00:08:55] Got it.

Lukxmi Balathsan [00:08:55] And I think that's sort of what we want to sort of talk about in this. Like increasingly millennials and people in general want these meaningful careers that help them make the world a better place. What you talked about, you know, impact purpose. So to all of you, in your own words, why is the agrifood sector the place to be if you want to create impact and make a difference?

Carl Edwards [00:09:17] I think what's interesting and obviously what's key here is we all need food to sustain us. It's a requirement of life and the fact that we have a future generation that, ever more so and increasingly more so, are connected to the environment, are aware of where their food is produced, and wants to know more about where their food is produced. And kind of our role is just to highlight those opportunities, those exciting opportunities. The science and technology, yeah they absolutely have a part to play. But as an organisation of LEAF, we also look at sustainability and actually looking at learning from the past as well and looking at best practises that we've had in the past and mixing those with the science and technology of the future. And so there's are intergenerational peace to be had there as well, learning from those that are already in the

industry that have made those mistakes maybe or have found those solutions. And what's exciting is the fact that we've got this generation coming up that we know from the Office of National Statistics, research from the U.K. has said that the generation are a more caring generation, both in terms of society, but also in terms of the environment and actually what could be more caring than providing food that nourishes our population, that also provides the guardianship of our environment as well. And the two just come together symbiotically. And that, to me, is the exciting piece and the fact that when we work with young people, so we run a national competition in food, farming and the natural environment. And we very much said from the outset, we want to give these young people the opportunity to experience everything around food production and the environment and just to see it all in action. And as part of our competition, we gave young people a hypothesis. And in the first year, it was kind of is farming more than that mud and wellies? Do you agree or disagree? And they all agreed and we were really, really happy. We thought, but actually, we need to dig down a little bit deeper into this. So the following year, we said drones will be our farmers of the future, do you agree or disagree? Every single young person there disagreed with that. And they said, no, humans are the most important part of that system and having that emotive connection and having that ability to make decisions and of course, science technology will underpin and will be used. But ultimately, you need the humans that and that really surprised us. But it fits into that whole piece that young people today are more caring, are more thoughtful, will consider different things. And as I said at the start, it's bringing those intergenerational pieces together, which is really important as well, learning from the past and pushing us forward to the future.

Lukxmi Balathsan [00:12:10] That's such a lovely sentiment and it's really nice to hear that, you know, the future of food and farming, although it may be underpinned by robots, there is that very human caring connection. And it's really nice to hear the young people already feel that sense of human connection for the food that, it's really lovely findings. Thank you for sharing that.

Matt Eastland [00:12:27] I was just going to say, what do you think, Barbara? I mean, do you agree? I mean, is why do you think this is so exciting, the agrifood space?

Barbara Mason [00:12:35] I guess I too, stepped into the agrifood space from a different sector. And up until fifteen years or so ago, the closest I got to food was eating the stuff I actually hadn't any other part to it. I'm a chemist by background, and I spent the first part of my career in the pharmaceutical industry and it always had this notion of it would be great to make a difference. But I'd always been feeling that that was more of part of a collective, even though subconsciously that's how can you do this on a personal level. And I absolutely agree with what we've said here just now in that moving forward, young people are much more passionate about doing this on a personal level. And I found that...the thing that inspired me was about a decade ago, the UK's then government chief scientific adviser produced a report that was absolutely terrifying. In as much as it said that by 2050, the world, if we continued as we were in the way that we behave, we wouldn't be able to feed ourselves. And by we, didn't mean odd pockets of people all over the place, it actually meant if we, you and I, didn't change our ways, then we, you and I, wouldn't be able to feed ourselves, never mind the people that needed extra support. And that was sort of a real eye opener for me. And so when I had the opportunity to move into working with the agrifood area, it starts to show that actually there are mechanisms there where on an individual level you can make that difference. And it's something that I think just it's there. It's in your face. You can become so passionate about it that it's something that leads you to do these sorts of things and then to look out more broadly into skills and cross-sector working that will allow that massive progress to be made. So picking up on sort of a couple

of points and taking it much further is this notion of food waste and reducing food waste now young people? Well, I know feel absolutely passionately about that, but it's not just young people that are feeling that it's now something that's crossing a huge generational gap of people who are maybe they're not working anymore, but it's still something that's important. And for me, that's what's really exciting is that there are ways of doing things even in a big corporate where as an individual you make a difference. And outside, when you're doing a shopping and you're making a few choices, you can actually make a big difference. Those small steps are starting to count, and that's what makes it so exciting. I have to get off my soapbox now.

Matt Eastland [00:15:03] We love it. I love it. I mean, it's pretty clear to me, particularly Barbara and Carl that you think that young people should be interested in food and farming. So maybe you can give us a flavour of what jobs are actually out there and maybe are there any roles that people might not expect, you know, something which is maybe not the traditional view of this space. Carl, what do you think?

Carl Edwards [00:15:30] So we developed with the National Federation of Young Farmers Club, a programme that we can deliver in school called Future Farming. And we look at a wide variety of different jobs within that. So kind of your autonomous vehicle engineer, your carbon capture technicians and, you know, just the things that we forget about actually in our food production, the butcher, cheesemaker, all of those jobs are still really exciting. Just because it's not a new career doesn't mean it's not an exciting career. And I remember that we first piloted this session with a school in Leicestershire and we got young people just to think what you got for lunch today in front of you. And then let's have a look at these kind of future farming roles and these jobs and how many of those jobs were involved in making what you've got in front of you today. And I remember so clearly this one girl came up to me and she said, I didn't realise there were twenty people in just making this ham sandwich that I've got in front of me. And it was that kind of light bulb moment that we saw that, exactly, that's the whole point. There are some new and exciting jobs and there will always be new and exciting jobs that come into the industry and jobs that we don't know even exist, as they always say, in three years time. But this is traditional jobs that are just as important and those still aren't appreciated or understood by a lot of people. And so our remit really and our role is to highlight the whole plethora of these. And, yeah, I just the fact that twenty jobs in making that ham sandwich for that young people, that that just blew her mind. And so we really feel that the whole supply chain, if you like, is important in that journey as well in highlighting that.

Matt Eastland [00:17:18] Thanks Carl. And Barbara, anything to add to that?

Barbara Mason [00:17:21] Well, I guess things, I have my eyes open just to what sorts of things there were through working with not actually in my instance with young people, but working with people who've come on to professional learning. Still at academic courses but I've had people come sort of past me with some things like airlines and think, well, why on earth somebody who works for an airline want to come on a course that is in some way related to food science. And of course, these are people that decide what goes into the foods you'll serve on the long haul flight to a short haul flight. And they're looking at not only the nutritional content, but they're looking at the taste of it and how nice is it and how nice is it when you're up in the air and how long can it survive and still be nice across flights? So that was something that was a real eye opener. I want somebody from some airlines to sign up for my courses, that's a bit of a surprise. But equally, you have people from small restaurants or across the whole piece. What I think one of the most exciting areas that opens your eyes to what opportunities are food technologies. You've got food

technologies in the supermarkets. You've got food technologists working in the airlines or in hospitals. Things like making food is palatable for cancer patients. You know, for cancer patients who you can't taste. Who I mean and I guess it's something that's particularly pertinent now in the covid times where people who can't taste and smell where the most awful smells are permeating everything that they do. So to be able to be, have the knowledge and the skills to make minor adjustments to popular foods that people can face eating and then still actually getting to be able to be swallowed. There's a whole host of different things that come into play. I believe, look at what you're good at and what you enjoy and there will be somewhere within the food system that needs those skills. And of course, that will help you to fine tune those.

Matt Eastland [00:19:17] Love that. Amazing. I've never, you know, even from my perspective inside, you know, I probably don't even realise quite how broad this can go. So thank you for that, kind of, thank you for sort of articulating that really well. Thanks.

Lukxmi Balathsan [00:19:31] And I guess, you know, we've already heard from Yka like he is a prime example of exactly someone coming from a different innovative sector and applying it to that the food industry. So I guess coming back to you a little bit Yka, so you meant you know, you mentioned you come from a technical angle. So what are the different roles within Grainsense and Manna Insect? You know, who the type of people that you work with?

Yka Marjanen [00:19:52] We actually, Grainsense has hired about twenty six different people and I think four have some farming background, and every time we were hiring like lab technicians and different people, we were thinking that could we find someone who at least have parents as a farmers so that they have some context? Because we knew that we didn't really have the context as a founding team that hopefully our employees would have more understanding of the practical farming. We didn't find that many. But in Finland, there is still agriculture there's many, many farmers. So there are people but we didn't find that many and that was kind of important for us in. In Manna Insect, it's the same thing. We can't find anyone who actually have insect experience. At least they have a bio, they are a biologist.

Matt Eastland [00:20:50] Not yet.

Yka Marjanen [00:20:50] They actually have. Yeah. I mean, my children I'm not sure have I more scared them away from any agriculture or entrepreneurship because they've seen in the last thirteen years, they've seen me do many things from having a Queen of Sweden as a customer to do, bringing insects to home to feed biowaste. So I'm not sure what they think. I haven't really held a job than early twenties, I was a research scientist, but since then it's been very hard for me to kind of... I wouldn't be definitely in this area other than luck, more or less of just meeting people.

Lukxmi Balathsan [00:21:33] And it's interesting, you know, you talk about how you've sort of become the accidental agrifood entrepreneur. And, you know, currently there is this concept of not climbing the career ladder. It's more squiggly and people are moving from applying skill and really developing their own careers. And I think, you know, if you're going to encourage more people to come into food or farming sector and start successful companies and really evolved the industry. Do you need to learn specific skills in formal education or is it more organic?

Carl Edwards [00:22:03] So we very much believe that you cannot be what you haven't seen and haven't had the chance to experience. And that really is our role to open the eyes to those young people. And we do this through many different paths. And for example, we run something called Farmer Time, which is connecting schools with a farmer so an individual class can connect and have regular conversations with a farmer, who then brings on the ancillary roles within the farm as well. You agronomist, for example, can also be involved in that, and it's just highlighting and opening up young people's mind to there is a world out there. And my background is I used to be an assistant head teacher in central Birmingham. I was a geography teacher by trade, head of careers at the school. And it was very much this was the most young people took you did your GCSE's, your A-Levels and you went on to university. But that in more recent times is completely out of the window now and it's much more personalised to those young people. And so what we do is actually support the teachers to be able to give more advice on our sector. We know that young people are still influenced in their future career choices by parents, by teachers and by their peers. And we at least have the opportunity to work with teachers to up skill them. So for Farmer Time, for example, we work with over fifteen and a half thousand children, regularly connect every couple of weeks with our industry and have that conversation. So the farmer will be live out on farm, discussing what they've been doing that week and what's been going on more widely. And it was really interesting. In the first year, we ran Farmer Time with village farms. Not many of our participants spoke about careers and we said, well, this is an opportunity, really. You've got this captive audience. And it was really interesting at first for young people to ask the farm in front of them, so how much do you earn? And what's the name of your dog? And those kind of questions. And I remember this class in Birmingham actually, a class of nine year olds, and they were the questions they asked in their first session. By the time they were talking about their fourth session, they were looking at renewable energy supply on farm and these were nine year olds that were having that greater depth of knowledge exchange with the farm in front of them. So last year we noticed an increase in forty three percent of the farmers were, and schools were looking at careers. And this year we've just had our impact report through and seventy one percent are now looking at careers.

[00:24:43] Amazing.

[00:24:43] And actually, I think it's around ninety eight percent of those young people follow up with work in the classroom with their teachers, have development training for their teachers. And they're actually now looking at the whole supply chain. So what started out as a very simple way through face time, face timing that farmer has developed into whole supply chain, whole industry at quite a rapid rate, a really rapid rate. And actually, we've got a huge list. We've got over a hundred an fifty schools now waiting to be matched with their farmers. So we're doing a shout out for more farmers in the UK to sign up. We've also launched in Sweden, in Denmark, in Ireland, in Australia as well. So we're really keen that this becomes a way of easily connecting with young people through the industry.

Matt Eastland [00:25:33] That's super encouraging and it's really great to know that obviously teachers are still playing a big role in terms of the influence. I mean, Barbara, from your side, do you think that, that formal education is still really important or is that going to become less important as time goes on? And also is it's not just young people, right? I mean, there must be people joining from various different parts of the industry at different phases of their life as well.

Barbara Mason [00:26:01] Absolutely and there's a whole myriad of points in that. I think the short answer to is formal education important and will it stay? So then, yes, I believe it

will. I think it's a really good grounding in being able to study and being able to apply yourself and being able to do critical thinking and all that sort of area. I think it also is a wonderful platform for infusing people, for people trying things out and for really exploring their own personal talents. So I don't think that will ever, ever go. And there's also the element that that takes you into academic research and which is that, the blue sky thinking and the fantastic creativity that we have. But I really believe that it doesn't just stop there and that formal education is not for everybody, and that if we expect that a given industry is only populated by people who have had formal education. So we're heading for disaster because we can't all be brilliant at the same things. And not that formal education makes us all brilliant at the same things, but it doesn't allow that breadth of vocational thinking that is needed. So I absolutely believe that there is lifelong learning. I remember saying to my mother when I was about twenty five that I'd probably stop studying when I was maybe in my late twenties. I'm considerably older than that and I'm still writing my PhD up. You know, some of those things that lifelong learning is really, really important. But I think this industry in particular, I think is really open to that development because it changes so quickly as circumstances change and people's perceptions change.

Lukxmi Balathsan [00:27:41] I was going to just pick up on that life, lifelong learning. I think that's so key, especially, you know, you read more about moving into Industry 4.0 and that is the key skill is the ability to keep learning, which is quite important. And just picking up on that, the same question. But, you know, you are a seasoned entrepreneur. You, I'm sure you get approached to be a mentor. You're probably a mentor to your kids you mentioned. So from your perspective as an entrepreneur and that you know, the advice to give to our potential entrepreneurs listening, you know, what would you be your recommendation in terms of acquiring the skills either through formal education or through the school of life to really consider a career in entrepreneurship in the food sector?

Yka Marjanen [00:28:22] Well, I've done my formal school in Finland, UK and US, and I've done a Ph.D. from human comfort, which I would have never thought to do five years before. So I see education as like a vertical thing and then different sectors like horizontal things so that you would I mean, in Finland at least, people think like they are studying for a job or for a profession and they don't really think that I'm studying skills. And then I can apply it to completely different sectors. They're only thinking like, ok, I'm in economics or something, must be, I will be a banker or something. No one's actually studying entrepreneurship officially, in Finland at least. There might be courses on entrepreneurship, but not like.. Entrepreneurship, it's not like a job in that sense. So for me at least, it's been very easy to switch from doing an idea platform to security alarms to agriculture. But I think most people have this mental lock off, like looking only from their sector point of view. And I think how to get that message across people and to young people that they are not there to study to a job, but they are learning skills and then they can apply it to whatever. And I mean, I didn't know anything about insects when we started, but I knew that I will learn. And now after a couple of years, I think I'm pretty confident of giving a lecture on at least one insect species. I don't know the basics and theories of many things like in the cellular level, but I'm more like hands on person. I'll self-taught coding as well. So I've done coding for fifteen years, but I have no formal education on coding.

Matt Eastland [00:30:21] You sound like a perfect example of lifelong learning, Yka's. So, you know.

Yka Marjanen [00:30:26] Yeah ahah.

Matt Eastland [00:30:26] Big round of applause there. And you kind of mentioned something as well. You started talking about some of the barriers and how you get that message across to people. So but going back to the question about the branding problem, how do we attract more talent in the industry and maybe specifically from science and technology? It sounds like those are the kinds of skills that are going to be needed. Carl, what do you think?

Carl Edwards [00:30:49] So very much from our point of view, I repeat the phrase you cannot be it, if you haven't seen it. And the fact that we just need to get the industry in front of young people these opportunities. It's not necessarily a branding point of view. When we talk to those young people that absolutely blown away by what we are doing, they just don't know about it. And that's the whole point. They need to have that awareness raising for them. And also, like we said before, it's not just young people, actually families as well and parents and giving them some insight into our sector and other adults that want to change roots. And as Yka said, they've got those skills but actually, where do they go with it? And so it's all these opportunities. And we run something called Open Farm Sunday on behalf of the industry. We have about a quarter of a million people out on farm on the first Sunday in June every year. Now, we know anecdotally that through those visits, people have been taken on this apprenticeship, on apprenticeships. We know that people have learnt something, things and spoke to someone on those events and then have considered a totally different career that they were already part of. And so it's just making sure we give time to have that overview, to put it in front of our future generations. Look, we're here.

Matt Eastland [00:32:14] Yeah got it. So it sounds like awareness and inclusion are going to be quite important here. And Barbara, is that is that something you agree with?

Barbara Mason [00:32:22] I absolutely do. I think that, that is really what's needed. But I do also think that the sector itself needs to take a little bit of responsibility for that. I absolutely agree with the fact that it's easy to study a course for a job, but actually there's a need perhaps where those that require the skills in part of the sector should also be able to look more broadly outside their own sector and look where those skills are used elsewhere so that when they are talking to recruiters, when they're talking to students, when they're talking to young people and their families, that they are able to say, well, actually, if you've done marine biology, there's a good chance that there is a place for you in some part of the food supply chain in, you know, alternate sources of protein or using up food waste or whatever it might be. So it's not just pushing people to look more widely for their own career. It's also asking the sector, pushing the sector to look more broadly about where the skills that they need are used elsewhere and where the experiences that are gained elsewhere are absolutely vital to what we would need within the sector.

Yka Marjanen [00:33:33] I have actually sorry, I have a very unusual idea regarding this, is that you would I mean, the problem with us also finding someone like employees that we are looking a hammer for a nail, which means that they have very specific requirements that they would have to feel already. And I'm more like changing my idea on recruiting on that I want just people that have certain personality and certain type of basic skills. And I assume that when I get them interested, they will learn whatever needs to be done in this sector. And that's how I've been. I mean, every time I've just been very interested and excited on something and then I start learning like we went into security business without having any idea how to even make wireless sensors. And but we knew that we can just learn that when we had the kind of the mind and the goal. And so I kind of I see the recruitment process as also advertising wrongly, that you have to be specifically. Catered to a specific job, and then if you don't have that, you can't even apply because they're

looking for that hammer today and not like a tool set for the future. So I think that's part of the problem.

Matt Eastland [00:34:57] And that we're totally open up the sector as well wouldn't it? Basically saying people can come in and then we'll work on a train you and then you evolve into the job, which I love.

Lukxmi Balathsan [00:35:06] Yeah.

Matt Eastland [00:35:06] And actually that's something that one of our previous podcasts as well Mark Cuddigan from Ella's kitchen was also talking about he was saying that they only recruit people based on the fact that they believe that they can do the job, which I think is just a wonderful way to be so thank you for that.

Lukxmi Balathsan [00:35:22] Yeah. And that also, you know, hiring for passion and that being that lifelong learning is probably what's going to support the business, grow to the direction that you want. And I think coming back to that point about hiring for that passion, that skill set, that learning, and I'm just want to touch a little bit about the sector and then diversity in the sector. You know, you've talked about the inclusion piece. Now, do you think we're doing enough? So statistics in Europe, you know, there are forty nine percent of the food sector is women. As you go up, hire a CEO board level, I think is less than ten percent. Entrepreneurship also doesn't look great. So are we doing it enough for diversity in the EIT Food sector? So, Carl, do you have any thoughts on that?

Carl Edwards [00:36:06] So as an organisation, we work with all schools, all young people from a variety of different backgrounds. And that's been really important to us, that we work with rural communities and urban communities. And again, it's highlighting the opportunities to everyone in front of us. A big part of what we're doing, though, is still around that misconception of the sector, especially more on the food production side, which is a lower ability entering that sector, which is completely false. There were a wide variety of abilities that are needed in that sector. So we're doing a huge push around, increasing higher ability, young people trying to enter. It's interesting, in our national competition, in the first year, one of the mandates was you had to be fourteen to sixteen and you had to be a higher ability student from your school. And that was it. What was really interesting is out of the fifteen students that won the place on the competition first year, fourteen were girls and one was a boy.

Matt Eastland [00:37:06] Alright that's really interesting.

Carl Edwards [00:37:08] Yeah. And in the second year, again, we had more girls than boys again. And their mind was much more open to what we were discussing, at least in the competition, which was really, really interesting from that point of view. So, yes, I think as an organisation we make sure we put the industry in front of everyone so everyone has an equal opportunity to enter and make a decision for themselves.

Lukxmi Balathsan [00:37:33] Perfect things for that Carl. And I guess to you, Barbara, diversity in sector like, do you think we're doing enough as an industry?

Barbara Mason [00:37:40] The statistics suggest that we're not. You know, there are, as you said, that there are big discrepancies. So we are still playing catch up I think, in trying to address that. I certainly know from the work that I've been doing with EIT Food in particular is very much about addressing that. And it's not just about addressing traditional

gaps that we're seeing. It is also about sort of economic gaps and regions and so on that have been working with. So I think behind the scenes there's quite a lot of work going on as well as in the forefront of it. I think, are we doing enough? I don't know whether we're doing enough. It's a hard question to answer when the statistics indicate that there is a huge amount to go. I don't know whether that was a nonanswer, was it?

Lukxmi Balathsan [00:38:25] No, no, no, no. Yeah, well, we know we need to do more. We need to. I guess what you're saying is we need to do more to attract and make the agrifood sector an inclusive sector for age. We talked about age and also we need to take into account, you know, food is something that touches all of us. So we should all be involved in the process of making that change. Yka do you have any insight into terms of entrepreneurship and what can be done more to make it more inclusive and attractive for everyone?

Yka Marjanen [00:38:54] First of all, it's definitely clear that at least in tech start-up world is I think, like ninety five percent men and five percent women. And I know also based on the blogs and articles that women, especially younger women, have a hard time raising funding. For some reason they're not because of cosmesis, the venture capital is are normally about the forties, fifties and men. So there is definitely some prejudice on women for some reason. I'm not sure what is the like original reason why there's so little women. And yeah, it's hard to know. At least my personal experience is that I haven't found any difference. If it's women run start up or men run, start up or actually I prefer every time we've tried to hire women, just because we get much more diversity in ideas and how we speak when there is just not five men sitting there in the room. But in programming, in tech, it's been very hard to find women who know how to code and do IOT and these kinds of things. But yeah, so I don't have any answers, but I definitely see that it's very male dominant. And then and that might change the kind of the opinions of people.

Matt Eastland [00:40:15] Yeah, I think there's probably a podcast episode or episodes in just that, that very point you're making, you know why is that? So maybe that's one we can pick up on another time. So we're nearly out of time today everyone. So just the last couple of questions, if you could give a shout out to a project. So what sort of innovations and new technologies are food entrepreneurs working on right now that you think would really excite the next generation of talent in the industry? Is there anything that you've seen that you particularly like to highlight? What about you Barbara?

Barbara Mason [00:40:50] I think the thing for me that really gets me excited is all around food waste and the use of food waste. Waste is still seen as a word, as a connotation of chucking it away. And it's going in the bin and it's going to rot. And it's still a perception that people have. And I and anything that involves actually stopping that needing to happen. So whether that's ways of not producing the waste in the first place or for me, it's actually the excitement is around taking by-products and using them for a really sort of positive direction back in the food supply chain. That's what really excites me, that approach.

Matt Eastland [00:41:30] Amazing. Thank you. What about you Yka?

Yka Marjanen [00:41:33] Well, I will continue from Barbara that biowaste got me into insects. It wasn't insects going into biowaste, but I saw the amount of biowaste that is sitting there. And this particular insect we're using, black solidified lava is optimised by nature to handle that. So my job as an engineer is to scale it industrially so that it can be used. And I think the same is for farming as well, the vertical farming and using automation not just as a technology, but as I like it benefiting so that one man can do more and we

can use the vertical space is the reason why I'm here that I see so many potential that we haven't figured out in this space.

Matt Eastland [00:42:21] Yeah, that's super interesting. Thank you. And Carl, do you agree? Or is vertical farming going to be the way forward in the agricultural space or the other sort of projects or opportunities that you think are even more exciting?

Carl Edwards [00:42:34] So it certainly seems to be definitely a step in the right direction. But what's interesting for me, really, and what gets me excited in this space is that we're having these conversations and that they're becoming more in the public psyche even to have these conversations, if you look at the media in the way that they report, we're getting more coverage than ever before. And it's not all negative, which is really pleasing as well. And so it's actually bringing in the public into these conversations. So, yes, we've got all these wonderful new ideas, innovations, technology. I mean, I remember when I first came into this role three and a half years ago, and I was lucky enough to go to Harper Adams and see their hands free hectare and to see drones, you know, farming this hectare with no human involved.

Matt Eastland [00:43:22] Very strange.

Carl Edwards [00:43:23] That just blew my mind. And since then, going into the different agricultural shows and seeing these crops, whether again or drone, and they act to the minute detail and go down and spray weeds, I just think, and the reduction in waste then and the benefits for the environment, which of course what we're really interested in. So all of that is really interesting. But we're having these conversations. I mean, it really, something really annoyed me when we were having those conversations about autonomous cars and autonomous vehicles on the road. I thought, but we've had that in the industry for years, and yet we don't seem to talk about that. But now we're getting out there much more and we're having this conversation, which to me is the most important thing.

Matt Eastland [00:44:04] I mean Yka, from your start-up perspective, what do you see as the most exciting areas kind of cropping up? What what's on your radar?

Yka Marjanen [00:44:13] I've been in IOT sector in one way or the another for the last fifteen years. And every year it's kind of like it's going to be a big, big thing, like IOT, IOT, IOT.

Matt Eastland [00:44:24] Yeah.

Yka Marjanen [00:44:24] And then they change the name to Industry 4.0. And so I see that even though I'm an engineer, I don't see that technology. There's many technologies available at the moment, but I see more like a more exciting is that when industry and ecosystem changes and processes changes and suddenly they realised that they could start using it and it might take five years and suddenly everything is different in that industry, and I've seen that when you push a technology, it doesn't help. I mean, it's not get adopted until the whole ecosystem and the mind changes. And that's kind of what I'm, I want to be in the forefront of that. And now I've chosen that insect using insects in various ways that people haven't really used to think about in an industry level is where I want to be like utilising these technologies.

Matt Eastland [00:45:22] Inspiring stuff. Thank you very much Yka. And yes, we're finally at the end of the show everyone. So thank you so very much for a really, really interesting conversation and one that, again, I'm sure we can talk about for a very long time. And it would be good to check back in with you all. So where can people find out more about your work and the opportunities available for people to get into the industry? So, Carl, what let's start with you?

Carl Edwards [00:45:48] The best place to find information about us is at leafuk.org and you'll find out all about our education work, our public engagement work, as well as more of our technical and on the ground farm work as well.

Matt Eastland [00:45:59] Thank you very much. Barbara?

Barbara Mason [00:46:02] So the best place to find out what we do in specific areas is through the University of Reading's Agrifood Training Partnership or alternatively through from the professional education side of things, just through EIT Food professional education arm.

Matt Eastland [00:46:17] Thank you very much. And last but by no means least, Yka?

Yka Marjanen [00:46:20] Hmm. Well, mannainsect.com and grainsense.com. That's pretty much it and of course, LinkedIn, if you want to contact me, that's the best, best way.

Matt Eastland [00:46:31] It just leaves than me to say Yka, thank you very much.

Yka Marjanen [00:46:35] Thank you.

Matt Eastland [00:46:36] Barbara, thank you.

Barbara Mason [00:46:37] Thank you very much.

Matt Eastland [00:46:38] And Carl, thank you also a really great conversation.

Carl Edwards [00:46:42] Thank you.

Matt Eastland [00:46:44] Thanks everybody. You've been listening to The Food Fight podcast from EIT Food. If you'd like to learn more about what we're doing. Go to our website, eitfood.eu or check us out on Twitter @EITFood. Thank you to New Scientist Live. Keep fighting for better food future.