

## EIT Food Fight\_ Regen Ag BluePrint V1.mp3

**Matt Eastland** [00:00:06] When it comes to climate change, the UN is calling 2021 the make or break year if we're to avoid a tipping point of no return. To prevent irreversible change to our environment, people are looking at ways of making our food more sustainable and protecting the planet, and one of the solutions proposed is a regenerative approach to agriculture. But what is it and where do we even start with regenerative farming? I'm Matt Eastland and welcome to The Food Fight podcast from EIT Food exploring the greatest challenges facing the food system and the innovations and entrepreneurs looking to solve them.

[00:00:42] Regenerative agriculture is no small task, it requires strategy, patience and foresight and is more purpose driven, people step forward to play their part in nurturing our planet's ecosystem. We need to equip them with the evidence based knowledge and tools they need to put this into practise. This is what we're going to be talking about in today's episode, the blueprint for starting your own regenerative practise and to provide us with all the information we need I'm joined by two amazing regenerative agriculture advocates. First of all, I'd like to welcome the TEDx speaker, podcast host and founding director of the Sustainable Food Trust, Patrick Holden. The Sustainable Food Trust is a charitable organisation that strives for better food and farming system for people and the planet. Patrick has heaps of experience at all levels of farming, and it's an absolute pleasure to have you on the show today. Welcome, Patrick.

**Patrick Holden** [00:01:35] Thank you very much for having me. It's a privilege to be participating.

**Matt Eastland** [00:01:40] Thanks very much. And our other guest is a great colleague of mine, Philip Fernandez, who works as an agriculture project manager at EIT Food. Phillip works on programmes to encourage regenerative farming in southern Europe. And his latest project, the Regenerative Agriculture Manual, is aiming to raise awareness amongst consumers about the environment and health benefits of sustainably produced food. Thanks for joining us, Philip.

**Philip Fernandez** [00:02:04] Well, thank you, Matt. It's a pleasure to be here, and it's also an honour to be with Patrick Holden as well. I look forward to it.

**Matt Eastland** [00:02:12] Amazing. Great to have you both on. OK, so before we get into this regenerative agriculture is, let's say, quite the buzz word at the moment. But what is it exactly? Philip, maybe you can start. How do you define regenerative agriculture?

**Philip Fernandez** [00:02:28] I kind of define regenerative agriculture as focus on certain outcomes. Regenerative farmers are striving to improve soil health and increase biodiversity above and below the ground as a means to improve the environment and produce more nutritious foods for consumers. That, for me, is the definition. It also has certain, includes certain practises that they can guide farmers in the process. But I like to emphasise that it's very much outcome based.

**Matt Eastland** [00:02:58] Amazing, thanks for that, and Patrick, anything to add to what Philip says.

**Patrick Holden** [00:03:03] Well, I think he gives a brilliant description. But of course, it's a very good question too, because there are a number of terms which are being used to

describe the change to farming and food production systems that is necessary because of climate change and reversing biodiversity loss and improving human health. And of course, it's the detail of the farming practises which needs to be described and defined. And there are other words like agro ecological, organic, bio dynamic. I've had a lot to do with both of those systems, which are also being used, and I think it's important to look at what we need to achieve the outcomes because I think if we can concentrate on what we need to end up with, then that will help. And then also we need to measure the impacts. So I think what we need to do is if you look at the history of the 20th century agricultural systems they built extractive of the natural and human capital that we built up over millennia and we've dined out on soil fertility produced food at the expense of nature, and we're now in a very dark place and people say we're in the last chance saloon in terms of soils. We're facing the sixth great extinction, et cetera. So given that farming is now the majority land user on planet Earth, no longer sadly pristine rainforest, but most of the habitable area of the planet is farmed. What we do on farms will be absolutely critical to restoring the ecological balance that we once had. And I think regenerative farming does what it says on the tin. It regenerates what we've lost and it's the practises and the impacts that we need to discuss in this important conversation.

**Matt Eastland** [00:04:51] Thanks, Patrick. Yeah. I mean, the picture you described there is pretty sobering, I have to say, but it's good that we have things like regenerative farming, which kind of provide that positive edge. And Philip, you spoke about some of the principles of regenerative farming. So it sounds to me like this is more like a guiding light rather than something which needs to be kind of locked down, right?

**Philip Fernandez** [00:05:14] Yes. There are some farming principles that can be applied to reach these outcomes. But I just wanted to say in terms of the positive angle on this. Patrick mentioned the different types of organic farming. There's agro ecology, organic farming, many different movements and all the many of the principles are very much related. But what I think is really interesting about regenerative agriculture is its positive focus on improving the soil and increasing biodiversity. One of the problems with organic farming was that it kind of told you what not to do. Don't use these chemicals in your crops. Don't do this. Don't do that. And I think that was right. But it's hard when you're a farmer trying to achieve something to focus on what not to do rather than what to do. And so I think the great contribution to regenerative agriculture is precisely that. So there's a series of principles such as tilling the land as little as possible, minimum soil disturbance as a way of protecting the life underneath the soil, always keeping the land covered with plants. This is key as a means to preventing erosion. It's also very important because it's plants and their photosynthetic activity, which feeds the soil and all the microbiology that's under the soil. And that microbiology in turn, helps plants and animals. Also very important to increase biodiversity as I said above and below the ground with intercropping crop rotation combining plants and animals. Another key principle is try to reduce and hopefully eliminate the use of agrochemical products on the crop. It's not compatible with creating life, you can't kill insects and kill plants as a means of creating them. So I think that's very key. And finally, it's very specific regenerative agriculture we talk about context specific design is not the same to grow apples in Poland as it is in southern Spain, so we have to take this into account. And keep in mind that these are general principles, but how they're applied in a specific location will change.

**Matt Eastland** [00:07:22] Amazing. Thank you for that, Philip and also Patrick, for kind of helping us contextualise that, I suppose. And I like that idea of sort of guiding principles which can then be universally applied to different places. That's brilliant. And seeing as this episode is all about breaking into regenerative agriculture, I'd really like to know first how

you both got into this space and where your interest started. So, Patrick, maybe if we can start with you, what sort of first ignited you about getting into this space?

**Patrick Holden** [00:07:51] Well, I'm quite old now. I've been farming...

**Matt Eastland** [00:07:55] Ahahahaha.

**Patrick Holden** [00:07:55] I've been farming the same piece of land for 48 years, which is quite sobering, and I arrived on the farm where I still live in West Wales in 1973, aged 22. I was born in 1950 and I was as most of us all these days, an urban dweller. I grew up in London. My dad was a doctor, but I was around at an interesting time. In the sixties. The music was great. There was a big sort of hippie movement. I had long hair then and my dad was posted out to California, the San Francisco Bay Area. He was a visiting professor at Stanford at the time and I went with him, drank the Kool-Aid, got inspired by the green thinking of the time and thought, man got to get back to the land and set up a rural community and live happily ever after. So when I got back to England in 1971, I thought, right okay better train, got a job on a farm in Hampshire. Dairy Farm studied biodynamic farming at Emerson College in Sussex and then gathered a bunch of friends and we said right, let's move to Wales. We bought a farm, very rundown, and started farming, and the commune didn't last that long, you know communes are difficult. I still love community living, but it is tough and the farm has survived and prospered. And so I'm in a very privileged position of looking at a landscape that I've been trying to manage. You know, as an ecosystem for the last nearly 50 years looking at the outcomes, and I wouldn't call what I've been doing regenerative farming well the term didn't exist then, but it's sort of regenerative and it's the best we could do. I've learnt as I went along, and it's incredibly exciting to witness the outcomes because there's so much biodiversity. There's so many birds, insects, the soil fertility has grown. We're producing cheese to the milk of our native breed herd, and it's reassuring and actually inspiring to look at what can be achieved without a chemistry based agriculture. So I think that we're at the threshold of a whole new chapter in the global history of farming right now. Millions of young people, particularly young people, may be a bit like me, only like kind of a 21st century version, on wanting to get back to the land, on wanting to grow their own food, to work in harmony with nature. And I believe, yes, we can, and it must be done because unless we do it, we're not going to have a liveable planet.

**Matt Eastland** [00:10:14] Wow. Inspiring stuff, Patrick. And what a journey you've been on. I love the fact you're still farming on the same farm and that shows dedication. I love it. You know, you say on your website that leadership is instrumental in influencing people to become more sustainability focussed and maybe that's where that gap is. So do you feel there's been a lack of leadership in this space so far?

**Patrick Holden** [00:10:37] Yes, I do. I mean, what is exciting is I think it's starting to change. I mean, if you take the example of Nestlé this week, they've just put out a huge press release saying they're going to switch their whole company to regenerative farming, and they were displaying remarkable humility on a leadership call that I attended. They said, look, we we need to listen to our farmers, we don't actually know what the route map looks like, we don't even know what the systems are like because we're in uncharted waters. But the fact that they're saying that is amazing and I do think that the change that needs to happen to our food systems is bottom up yes, because it's what we buy and eat, but it's also top down. We do need leadership at the moment, and to be frank, we haven't had much from government recently. So yes, the companies, the big food companies, the big retailers, they need to be involved in this process of change.

**Matt Eastland** [00:11:31] Yeah, it sounds like there's a big realignment going on, which all sounds very positive. And Patrick, so you spoke about guiding and I suppose this is a nice segway into Philip, actually. So Philip, I know your focus in this space has been more around sort of mentoring regenerative farmers and encouraging more regenerative practises in southern Europe. So how did you get interested in this space? As I know that this isn't where you started, right? You've had a different journey.

**Philip Fernandez** [00:11:58] Yes, I came to this space much later in life than Patrick. I actually started in San Francisco as well. I was born and raised in San Francisco.

**Matt Eastland** [00:12:08] Here's the connection. I knew there would be another one.

**Patrick Holden** [00:12:11] What a fabulous connection. I think we need to talk after this.

**Philip Fernandez** [00:12:17] And I remember as a child People's Park, which I think was one of the areas at least of the United States where this whole organic movement began. And I remember People's Park and tear gas at their UC Berkeley. So that's very vivid still in my mind. But anyway, for reasons that I can't go into now, I ended up in Spain and worked as a lawyer, actually in banking, that's how I was trained. But at one point, I had some friends that were producing organic vegetables, and they were having a hard time finding consumers for their produce. There wasn't much demand in Spain. But I knew there was demand in northern Europe. And so I said, well, you know, maybe something can be done here. So to make a long story short, I started exporting stone fruit and other types of fruit to northern Europe, and that later developed into a home delivery business, producer delivery business in Madrid. And that's how I started to get involved in regenerative at that time, organic agriculture and my favourite part, more so than with consumers and business self. I loved visiting farms and planting the season and seeing how things are growing. That was my passion. And then EIT Food gave me this great opportunity to develop this project. That's how I got where I am.

**Matt Eastland** [00:13:35] Amazing. I didn't actually know that you started your own food delivery business in Madrid. That's awesome. And talking about the sort of projects you're working on. So given where you're at now, you know, what's your view around how regenerative farming is taking off in, well I suppose your focus is more southern Europe, but Europe in general,

**Philip Fernandez** [00:13:54] we see that there is tremendous interest on the part of farmers independent farmers to do this, some because they're concerned in general about the environment. They want to farm better so they come to us. There are others that maybe approach us because they're having serious problems. Farmers in southern Europe are facing tremendous challenges as a result of climate change. Like I said, soil erosion, loss of soil fertility, increased input costs, declining prices for their produce. Young people are leaving the rural areas. So there's all these problems. So there are a lot of them may not know about sustainability, but they have no other options and they're out grasping. So what can I do? So that's kind of what we're seeing in southern Europe.

**Matt Eastland** [00:14:41] So I know you're working on a report which is exploring the kind of potential health benefits of general agriculture, which is super interesting. So could you, are you able to talk us through any of the findings or what you know where you're at now?

**Philip Fernandez** [00:14:54] So we're working on several different studies. One of them is to compare the nutrient density of regenerative produce food to its conventional counterparts. So that study started with the study of beef and poultry, and we're getting the first results which show that the fat composition of regeneratively produced beef is healthier than conventionally produced beef. I can't go into detail about that, but the relationship between Omega six and Omega three, basically to simplify quite a bit. The fat in regenerative produced beef is healthier for humans. We'll be doing the same for that with vegetables, and we're looking at another study with one of EIT Food partners Naked in the Basque Country. And what they're doing is analysing the relationship between certain grazing practises on soil health and then ultimately the nutritional value of the milk. And we're seeing that if we apply holistic grazing practises, we improve soil health, soil organic matter in the soil and we also can produce more nutritious milk. And the idea is after these studies to disseminate them, perhaps through popular chefs or health and fitness experts, just to be able to transmit I think what this is very valuable information to consumers. Because right now, basically, I think about 10 percent of the population in Spain, let's say, will consume or buy regenerative organic produce because they know it helps the environment. But if we can prove that it also is better for your health, we'll see tremendous interest an increase of 30 40 percent, the population that will be buying these foods for health reasons.

**Matt Eastland** [00:16:33] Thanks for that. I mean, God, it sounds like a really valuable study that you're doing, and I'm looking forward to seeing the results, you know, sort of when they fully come out. I mean, Patrick, while Philip was talking, I can see you nodding away there. So it sounds to me like either you, you agree with this whole concept of there are health benefits to regenerative reproduced foods. Or maybe you've got your own insight here. Anything to add?

**Patrick Holden** [00:16:55] Well, both I agree with everything he's just said. Mean it's all 100 percent right, in my opinion. I think it's critical to inform the public. I think the power of informed public opinion to drive change in our food systems is the single biggest factor, which would enable us to do what needs to be done in the time available. And I think informing people better about the impact on food quality and human health of regenerative produced foods is critical. And also, I think people need guidance about what to eat. I think there's not a person on the planet at the moment who's not just hungry, who's not asking the question, what should I eat to be part of the solution to be healthy and sustainable? And in my opinion, I'm not sure whether we're going to agree about this but there have been a series of reports which have been produced over the last few years, which I think have succeeded in further confusing people about what the best thing to eat is. And the answer that we at the Sustainable Food Trust have is that we should eat what these sustainable and regenerative farmers in the country or region where we live produce. In other words, we should align our diets with what the farmers produce in the ratios, they produce those foods when they switch to regenerative farming. Now do we know what that is? Well, I don't. So we thought, OK, I'm a focus group of one let's commissioned our own study to imagine that the whole of the United Kingdom, this is just to take one country, was to transition to regenerative farming, and we defined what we mean by that as we already discussed the principles and the practises in the sort of opening chapter. And then we've calculated the impact not only of the yields, but the ratios of livestock products, fresh vegetables, etc.. And then we've divided that by the population of the United Kingdom. Then you've got a diet, you know? So in other words, if you ask me, Well, what should I eat? And I'd say, Well, firstly, you should eat what the farmers produce, and then you're going to say, Well, what is that? And I'm going to say, Well, it's this much dairy product, it's this much beef grass fed, of course, because that's better for omega three six and it's this

much vegetables and fruit in-season and grown not just in vegetable monocultures, but as part of proper regenerative farming rotations. And that report is going to come out at the end of October, just in the run up to COP26. And I think there will be I mean, I can give you a sort of teaser taste of the conclusions, which are that, of course, we should eat lots of vegetables properly grown and all that sort of thing. But we should more or less give up eating industrial chicken and pork. And that's of course, in the news at the moment because all this CO2 stuff where there was slaughtered with CO2. But paradoxically, we actually can eat probably as much grass-fed and mainly grass fed red meat, beef and lamb and dairy products as we are doing at the moment. Because contrary to what the Climate Change Committee people are saying, actually grass-fed livestock systems lie at the very heart of sustainable regenerative farming. And as long as we don't wastefully feed grain to those animals and as long as we holistically graze them, which is what am I nodding episodes, mob grazing, all that sort of thing. We can actually not only eat beef and lamb with a clear conscience, we can do so knowing that they are helping not only to hold onto the existing soil carbon bank in the grasslands, but also to build soil carbon, which is what we need to do.

**Matt Eastland** [00:20:12] So that's interesting. So the view from your side is that actually, you know, because we always get told, reduce meat consumption, reduce fish consumption because it's kind of un-balancing things from a climate perspective. But your view from a regenerative point of view is actually it's acceptable. It's absolutely achievable within this kind of balanced ecosystem.

**Patrick Holden** [00:20:31] Yes, and not only that, but this binary debate about moving to a plant based diet avoids the issue of we need to be as discerning in the choices we make for our plant foods as we are with our livestock food. So we don't want to eat palm oil from cleared rainforests. We don't want genetically modified soy, which has got a terrible environmental footprint. So we need to say which plants and which animal products should I eat to be part of the solution and be equally rigorous in both those choices. And in fact, it will vary between countries. There are some unifying principles about regenerative agriculture, but what we will produce in Mediterranean countries and the ratios of those foods will differ from the UK, and that's wonderful. But we need to know that information and we don't at the moment.

**Philip Fernandez** [00:21:17] I think the paradigm really of a regenerative farm is one where livestock and plants co-exist. It's the paradigm of the circular economy. The cows through the excrement are fertilising the soil, which means that there's better grass for them to eat and better food for us. And so you eliminate all these inputs and toxic outputs that you get from industrial farming. It's all included on the same farm, so animals are essential to regenerative farming.

**Matt Eastland** [00:21:48] Brilliant. OK, thank you both. That's super clear and very helpful. So why don't we go to sort of think about where we start then? So if you've got somebody who is super passionate about this particular space and they want to start their own regenerative farm, what are their first steps, you know, whether they even start here? So Patrick, as someone with hands on experience, maybe we can start with you. So what would your advice be? I want to start my own regenerative farm. What do I do now?

**Patrick Holden** [00:22:18] Well, I assume that you're young, you know, and the force is with you. And the great thing about being young is you do crazy things, you know? So if you live in a city and you think, oh, I'd like to get involved with regenerative farming, that sounds impossible because you know, you don't know anything. So I mean, that's what I

was like when I was 21. I just thought, Oh, let's do it anyway. So I think take the risk, get involved with learning from existing farmers. Don't necessarily go to agricultural college because most of them are so academic and they're the old orthodoxy. I'm not against college, but I think they've got a journey to go on. So my view is the best way to learn about farming is through practise, that's what I did. But obviously, if you hang out with a farmer who's already a good practitioner, people like Joel Salatin is doing a lot of that. He has apprentices, there's good farmers all over the world who are doing good work and bringing in apprentices and students as we are doing. And I think if you hang out with those people for a bit and learn and then find a way to get on the ladder, and obviously the money is a big barrier to access to farming. But you know, you can rent land. I didn't own land for about the first 30 years of my farming career. I was in a very insecure position, partly as a member of a commune in which has disintegrated, as I said, and then as a tenant farmer. And then eventually I had a chance to borrow money to buy the farm. So I think if you're passionate and you're determined to learn, I think that's the key.

**Matt Eastland** [00:23:48] OK, so take your passion. Hang out with the right mentor farmer who's into this space and find yourself a plot of land somehow, so that that seems like good, solid concrete steps and Philip what else would you add?

**Philip Fernandez** [00:24:00] I would recommend to someone who's starting out in the regenerative farming to first figure out to understand where they are, know where they want to go, and then figure out what practical steps they have to take to reach their goals. And in fact, in the advisory programme that we have at EIT Food for regenerative farmers or people that are transitioning to regenerative farming, that's the first exercise that they have to do. We call it the holistic transition plan, and they have to sit down with the help of the expert agronomist and figure out exactly that. Where am I? What type of ecosystem do I live and what crops do I have? What makes me happy? And then what are your goals? I want to have an integrated diversified farm. I want to make the best wine ever, or I want to make an affordable wine, let's say, or I want to make grow heirloom tomatoes. So that's where I want to go. And then what I need to to get there, what I need to do, what investments can I depend on was my network. All those nitty-gritty decisions are really important.

**Matt Eastland** [00:25:05] OK. So just to summarise then, so it's take your passion. Hang out with the right farmer mentor. Get yourself a plot of land. Be really clear on your objectives and kind of where you want to get to and take it from there. That sounds like a good five step plan right there. So that's great and really probably unfair question because I'm pretty sure based on everything you've said, that there is no such thing as an average day. But what would an average day look like for a regenerative farmer in comparison to like a conventional farm? And what is it that people can expect? Patrick, what do you think?

**Patrick Holden** [00:25:40] Well, it's an interesting question because, you know, you'd think my advanced stage of life I would be kind of, you know, delegating all the work of the farm to others. But for a number of reasons, I mean, we are milking, we're growing the crops for the cows. We're also cheesemaking all on the farm.

**Matt Eastland** [00:25:56] And award winning cheese, right?

**Patrick Holden** [00:25:59] Award winning cheese, yes. You can follow us on Instagram. But the point is that it's challenging to get people who want to get up in the morning and milk cows at moment. So we obviously we milked twice a day. That's 14 milking cows a

week. Right now me and my wife are responsible for sort of nearly 11 of them, 10 or 11 of them. So yesterday morning, my day started at five o'clock. We needed to get the milk and the cheese by seven o'clock, so we milked and of course, is not just milking. You do the clean up and you get the cows out, move the electric fence. We are mob grazing all that kind of stuff. And so my day is a fascinating mixture of real practical farming activities, very diverse because we're a diverse and mixed farm. And then of course, doing this sort of stuff that we're doing now and I'm sort of juggling the two. But I think it's really interesting that we need a new generation of young people to get involved with physical work. And just while you've got me on that drum, I think the human body was designed to work physically, and I think I have certainly even now I have my best thoughts when I'm doing physical work. And yet all of us have to go to the gym to keep fit or go running or whatever we do. But actually, if you work physically in the fields, it's wonderful. But we've given a low cultural and economic status to working physically. It's like, oh, the slavery of weeding carrots, which I've done for years. But in fact, it's one of the best things you could ever do with your body, and it stimulates great thoughts. So I think we need to restore the cultural and economic status of growing food for the next generation.

**Matt Eastland** [00:27:35] OK, meaningful physical work and Philip has this been your kind of experience working with all your other regenerative farmers in southern Europe? Is that the kind of a sense that you get?

**Philip Fernandez** [00:27:45] Well, first, I should clarify that I'm not a farmer. I work in an office so, but I do speak with a lot of farmers. I can't really speak about the daily routine, but what I can reflect or transmit is what they say about the difference between regenerative farming and conventional farming in terms of their approach to their work and in conventional farming, they say that they basically do a cooperative or whoever the buyer was that would determine what to plant, when to plant it, what products insecticides, herbicides to apply, when to harvest, basically they just follow orders. And in regenerative farming, all of a sudden they become the decision makers. So on the one hand, it gives you tremendous freedom, but also some vertigo, and it can be overwhelming. But I think ultimately it's rewarding and it means in regenerative farming you're involved in many different physical activities and intellectual activities you're involved in producing. You're involved in, ultimately a lot of regenerative farmers have to sell their own foods, so they're involved in distribution, involved in marketing. They also unfortunately have to do a lot of paperwork. So they're involved in many different activities, which means that it's a very interesting and challenging job. I should point out my son's tell me that they want an outdoor job, they don't want an office job. And so I always encourage them and say, why don't you become a farmer? Why do you become an agronomist? You know, I mean, you can be outside, work with your hands, meaningful physical work and they say but dad, you know, I hear you on Zoom conversations, and all you do is talk about dirt.

**Matt Eastland** [00:29:17] Yeah, it's a dirty job, but someone's got to do it right?

**Patrick Holden** [00:29:21] My sons say the same.

**Matt Eastland** [00:29:24] OK, so we need to get people to overcome their fear of dirt by the sounds of it and just picking up on one point. So, you know, I imagine people listening Philip, you know, everything you say, you're right. That does sound hugely rewarding. It sounds very diverse and very interesting, but it could be quite overwhelming. So where do people start if they don't have those experience or skills? And are there any kind of quick wins? So yes, we've kind of said, you know, good steps to take, but from what you've seen

on farms, are there any kind of key things that are always going to work when you're starting off?

**Philip Fernandez** [00:29:59] Let me see that first, I could give an example. First, I should emphasise the importance of training because you're on your own, because you have to make all of these decisions. You're not told what to do. Training is essential, and that could be from a regenerative expert advisor. Or it can be from your peers, other farmers in your area that are going through the same process that can be extremely helpful. But there are some quick wins that farmers can achieve. And again, I think with the help of an advisor, we just received a practical case study that was very interesting, and it was a conventional peach farmer who decided he wanted to transition to regenerative agriculture. But he was very cautious and also kind of scared about the whole thing. One of our advisors began to advise him, and basically the recommendations were simply to stop using as many chemical inputs and instead of that, use natural compost instead of doing preventative treatments, in other words, applying products that will kill off any potential disease, even though the plant's not sick right now. To simply add those nutrients that are missing in the soil and improve in microbiology. Anyway, to make a long story short, this farmer was able to save or spend a quarter of what he spent in its conventional farm. In other words, his cost went from one hundred to twenty five. And thanks to the increased photosynthesis of the plants, which is due to the increased soil health, he was able to produce 25 percent more peach.

**Matt Eastland** [00:31:29] Wow.

**Philip Fernandez** [00:31:30] It's a very quick win. This happened in one year by simply reducing farming inputs, improving the microbiology of the soil to increase photosynthesis, to increase production. So there are some quick wins, and it didn't involve any major changes on the farm. This was a peach farm. And that's it. And the farmer was actually reluctant to use cover crops, he said oh my God, I can't have weeds growing around here. That was without cover crops, which will increase the organic matter in the soil even more. But after these results, he decided that next year, he's going to cover crops and basically do anything that the adviser tells them to do.

**Matt Eastland** [00:32:03] I got it. So he's good. He's kind of bit cautious to start with, but he's seen the benefits and then next year he's going full in on all the principles.

**Philip Fernandez** [00:32:11] Yeah, because I should point out, it's a tremendous change in mindset. These are the slight changes in terms of production. But to think, you know, I mean, people are thinking, Oh, I have to apply all these products in case my plants get sick or my trees get sick. It's like as if we all went through chemotherapy to avoid getting cancer. It's very debilitating. And all these products weaken the plants and make them much more susceptible to disease, which is why you need later on have to play all these other insecticides herbicides.

**Matt Eastland** [00:32:43] So, OK, thank you. And Patrick, just given your experience in this space personally, I mean, do you sort of agree with what Phillip saying or any of the kind of tips and tricks for somebody starting out that you'd recommend? Because I can imagine that this is the part of the podcast that people going to be really focussed on. So where do I start? What are the tricks? Or are there no tricks?

**Patrick Holden** [00:33:06] I do agree with everything that Philip has said that, it's such an important question, a question of our time. I think people who know little about agriculture,

regenerative agriculture and horticulture and want to get back to the land should feel good about that because in some ways you don't have to unlearn a lot and you're fresh to it and you're really interested. This is an advantage, potentially. I certainly think it was an advantage for me when I started getting interested when I was a Londoner. All I had really was impressions of nature from childhood holidays and a couple of visits to farms. And I do believe profoundly that everything is connected so that if you have an experience of nature in a London garden or, you know, maybe you grew some vegetables in a little raised bed, you already understand so much of the secrets of the mystery of life, which can be applied at a larger scale on a farm. So don't be intimidated by, you know, an apparently overwhelming body of knowledge that farmers seem to have. We've got a couple of young apprentices in their late 20s with us right now, and they came to us and they said the both from London. We said, what you want? And they said, Well, we want to learn about cheese making, we want to learn about farming, both of us want to do both, so we're splitting it between three weeks on with one and then three weeks on with the other. And I think that that's probably the best way to equip yourself to start to take it onto your own small holding or farm or whatever you're going to do? There are lots of different ways in. But I do think learning by doing is so powerful. And if you look at the mess we're in with agriculture at the moment, all the advices and, you know, common agricultural policy reform. So few of them have actually ever farmed, the futures in the hands of practitioners. There are too few of them about and they're important and just take the risk. You know, it's all about showing up, really. Just show up.

**Matt Eastland** [00:35:04] Love that ok, so don't be intimidated. Take the plunge and just show up. Love it okay, everybody out there get cracking basically. Patrick so you spoke about something about sort of scaling up, and I just wanted to touch on on that and also a little bit about sort of technology in regenerative as well, which, you know, maybe traditionally people wouldn't think we'd go together. So the first question, so can you scale up regenerative farming to a level? And I kind of think I know where this is going, but to a level which is kind of equal, if not superior to conventional farming? First of all. So what do you think, Patrick?

**Patrick Holden** [00:35:41] Well, I think this is the age old question could regenerative farming feed the world? And the really super honest answer is we don't know, but a better answer is yes, we can, or yes we could if we wasted a lot less food because 50 percent of all the food, or up to 50 percent before and after the farm gate right through to the fridge is wasted right now and in the circular economy, nothing should be wasted. So we waste a lot less. We eat differently, as I was saying earlier, we align our diets, our future diets to what the regenerative farmers will produce in those proportions. And then we farm with this new knowledge of ecosystem management informed by, you know, research and innovation, which is going to lie ahead of us. If we do all those things, I think absolutely we can scale this up. And it's this is the big challenge for big food companies like, you know, Nestlé, Unilever and the big retailers. They're at the beginning of a new uncharted journey with a map which doesn't yet exist. And we've done a brilliant job of totally industrialising and centralising our food systems. We've gone right to the end. We couldn't go much further when just to give you one example. Most supermarkets only have one abattoir now to slaughter each species of animals. So in the case of lambs, they might all go to one abattoir in Wales, even if they come from Scotland. And it's the same with vegetables. You know, if you I used to grow carrots on a big scale for supermarkets, but then they closed out all the pack houses in the west of England and Wales. So I couldn't, I couldn't make it work. So I was having to drive my carrots 230 miles to get them packed. That's got to be reversed. We've got to have family independent businesses that produce food, retail food, processed food. It's like a war effort in a 21st century context, and we absolutely can do it.

And I'll tell you why we can't do it, because there's no alternative. We've got to do it. So it's exciting

**Philip Fernandez** [00:37:40] exactly when people ask me, can regenerative agriculture feed the world? I kind of turn the question around and say, can conventional farming continue to feed the world? So first of all, I think we can't continue the way we are right now. But secondly, I don't think that we have a problem right now with food shortage. Actually, the biggest problem we face, especially in Western societies, is obesity. It's not undernutrition, it's malnutrition eating poorly. So we have plenty of food is just a question of getting the food to the people and getting nutritious food to people. If we look at the examples of regenerative farming, if we're seeing that there are specific examples where farmers are regenerating the land, yields are not declining, they're diversifying their crops and therefore their risk. They're not producing toxic waste. Their input costs are coming down. This can be extended to other farms. So I think, yes, it can be scaled. And I think there's also the importance of technology. We work at EIT Food. We're focussed on innovation, whereas many will be talk about it's very location specific. There are other things that can be scale. There's technology available now with the developing technology to read carbon content in the soil by satellite. That can be an incredibly useful tool going forward, you're doing improving the environment, and if the satellite or you can get information says this is how much soil organic matter you created. This is how much carbon you sequestered. And maybe you can get paid for that social good, that environmental good that you're doing. So that's something that can be scaled. And then there's also a recent technology now to with air called spectrometers, some sort of device that can read the nutritional content of the specific food start with a scanner. So if on the one hand, we can see that regenerative farmers are increasing soil organic matter and we can see immediately what the nutritional value of that food is in the grocery store. Look at a carrot and say this one is twice as much vitamin D as this one. Which one am I going to buy? That's something that will have a tremendous impact on regenerative farming.

**Matt Eastland** [00:39:44] I love it. Thanks very much, Philip. Yeah, it's good to know that technology, actually, rather than sort of being pushed aside from this sort of type of farming, sustainable farming, whether it actually should be embraced. And that's certainly something like you say that we believe a EIT Food. And funnily enough, we have another podcast coming up on that soon as well. Patrick, any thoughts on the use of kind of the latest technology with regenerative?

**Patrick Holden** [00:40:11] Yes. I mean, I agree with Philip that the potential to use new technology to measure nutrient density, for instance, the Bio Nutrient Association in New England are coming up with technology for that is brilliant. But I think like all technologies, we need to be quite discerning because they can be used for good or ill. And you know, I'll give you one example. I mean, I was strongly opposed to the first generation of genetically engineered plants, and I'm very sceptical that genetic engineering will produce silver bullets that kind of feed the world through all that sort of thing. But now the gene editors have come along and they said, Look, we don't have to genetically engineered crops. We can edit the genes because we've got the capacity to map the genome now. And I know that in the UK, it's quite likely now because the government think it's a, you know, amazing technical fix. The gene editing technique is going to be permitted, but I am mindful of the emerging science of epigenetics, which is this new understanding that all living organisms constantly adapt to the external environment and through gene expression at a cellular level, can actually modify themselves and their descendants. And Rudolf Steiner, the Austrian philosopher, who was the founder of Biodynamic Agriculture, said we should breed from the plants and animals on our farms, which are an ecosystem because they

will become adapted to the place. And I think agriculture forgot that for 100 years. And now we are massively dependent on an incredibly small gene pool of both plants and animals on. I've been part of that problem using artificial insemination for my dairy cows and growing F1 hybrid carrots, cetera. And I am not enamoured with the gene editors because I think they're just going to further treat the symptoms, not the cause of the problem, which is chemical agriculture and industrial agriculture. And the risk is we will even further narrow the gene pool, which is available to farmers. So I believe that and I want to practise what I preach here, not yet that I should breed my own bulls and let them adapt to the unique ecosystem, which is my farm. And I should start to use this land race technique where you save seed and you allow the seeds to adapt to the soils where they grow. I'm not saying it's religion, but I'm saying it's the sort of antidote to this belief that we can somehow, the arrogance of science which can be taken too far. So, of course, technology is part of the future. Look at what we're doing now, but we should be careful.

**Matt Eastland** [00:42:44] Yeah, I mean, I guess one of the things I take away from that is it's a really evolving space, and I think that's really exciting actually, because it sounds like, you know, you're saying you've been doing this Patrick for such a long time and yet you are still learning more and more and you're still having to adapt and apply the latest best practises, which I think again for people trying to get into this space is a really encouraging thing to promote. It's like you will continually learn you will continue to adapt. And as a result, you know, your farm and your environment around you will get better. So I love that. I'm really, really gutted, actually. But we're actually coming to the end of our time on the show, and I think this has been one of those one of those shows where I say a few times, but I really could talk about this with you both for hours. So really, thanks for that. But just to kind of finish on, do you have any, so going back to this whole, where do I start? Do you have any specific training programmes or courses that you'd recommend for people? So that's kind of question part A, and then what final piece of advice would you give listeners who are thinking of pursuing a career in regenerative agriculture? So, Phillip, to start with any specific training programmes or courses you'd recommend?

**Philip Fernandez** [00:43:55] Well, EIT Food has its own training schedule training programme, so this is my opportunity to tout the programme. We on our website, you can see that we have six courses in Spain and Portugal this year, and they're regional and they're specialised on different crops. So we had a course in olive groves and Andalusia, for instance, we're going to have a course on vineyards in L'Erioca. So it's very, very specific and specific ecosystems. In Italy, we're organising three courses and in Poland we're organising courses as well. And those courses are followed by a three year advisory programme where a regenerative expert companies, the farmers he or she transitions to regenerative agriculture. So, yeah, that's the course offering. And also, there's many other organisations that offer teaching. There's regenerative agriculture associations in all European countries, and they have their own training programmes in Israel, which are very, very good. In terms of advice, I don't know whether I should stop here.

**Matt Eastland** [00:44:56] No go ahead. What would be your piece of advice?

**Philip Fernandez** [00:44:59] Well, I think it kind of depends on the audience. I think my advice to a Farmer, who is really concerned about sustainability, is a dreamer, I would just remind him to not lose sight of profitability, that for dreams to come true, you need money. So don't forget what your objectives are and make sure you're making money along the way. In terms of advice to a conventional farmer that's wondering whether they should consider this as an option or not. I would say the most important thing is to keep an open mind to question convention. A lot of things that we do are completely absurd, and just

because we've been doing them for years doesn't mean that they're the right way of doing things. And in terms of my message to agri food businesses, food retailers is to first. You're so important to this whole process. We need you, but you're going to need to be creative and hopefully develop products that take into account what Patrick was saying before to take into account the diversity of the farm. So create innovative foods that can source all the products of a farm rather than bending nature to a product portfolio. So...

**Matt Eastland** [00:46:08] Amazing, thanks, Philip, and thanks very much also for kind of breaking that down into advice per audience or stakeholder group, that's really great. And Patrick, same questions to you. So where would you recommend people go to kind of get more training and what would your kind of one final piece of advice be?

**Patrick Holden** [00:46:25] Well, I'll just focus on one place, which I think is an inspirational training centre that is in Ireland, a place in Ireland called Ballymaloe Cookery School where they've now just introduced, they do a 12 week course in cookery. But the amazing thing about this school is it's based on a 100 acre farm in the west of Ireland near Cork, and the cookery school is entirely nourished by the farm. And so when you learn to cook there, you have the first thing, Darina Allen runs it and she's a legend really, a force of nature, and she takes the students out onto the farm and she says, you can't learn to cook here unless you learn how to harvest the vegetables, milk the cows because they've got a micro dairy of five cows, make butter, cheese, yoghurt, everything and bake bread every morning. So the whole thing is vertically integrated and it is a completely... My daughter went on, The course changed the life, love life as well, you know everything. It was all in there because of course, it's fascinating, it draws students from all over the world, and they've just introduced a six week sustainable food and farming course as well with visiting people who speak there, I'm one of those. And I just think that sort of place is like a beacon of hope and inspiration. And I do believe kind of building on that model that what we really need is beacon farms all over the world where not just young people who want to make a career in food and farming visit, but also policy people you know who are redesigning our agricultural policy framework can be inspired by best practise. And I think that those farms should act as an educational and cultural resource. So we're practising what we preach on our farm. We've got a old threshing barn. We've just put a floor in it with underfloor heating. We've got some loos and a kitchen and we want some accommodation. We're putting in eco huts up. So we want our farm to be able to host visits of children of young people or policymakers. You know, whoever wants to learn, which should be all of us because we all eat. And so I see that latticework of a sort of informal coalition of farms opening themselves up to this come centres of inspiration and education being part of the solution and entirely matching what Phillips just said. Complimentary.

**Matt Eastland** [00:48:38] Thanks Patrick, Centres of inspiration. I love that. And I think that also resonates with what Philip is doing now in the sort of southern Europe as well. And thank you both also for the courses. I have actually been talking to Philip about going on one of his courses. And Patrick, I am absolutely going to check out the courses that you recommend as well. So that's brilliant. So huge. Thanks to you both. I guess the final last question is where can listeners go to find out more information about you and what you do? Patrick?

**Patrick Holden** [00:49:08] Well, visit our website Sus- Food Trust, Sustainable Food Trust. We're doing a lot of stuff that we haven't even talked about on this podcast, including developing a global farm metric for measuring sustainability impacts from the farm up fast food trust followers on Instagram. And as I mentioned, if you want to learn more about what we're doing at my farm, Hafod, which is spelt with an F, Hafod cheese, I

hope that people will come to our Sustainable Food Trust website because I think we need, we need to work collectively if we're going to achieve the change that's needed in the time available.

**Matt Eastland** [00:49:42] Thanks, Patrick. Clear call to action there for people listening and Philip, where can people find out more about about you and also the work that you're doing at EIT Food

**Philip Fernandez** [00:49:51] In terms of EIT Food on the website obviously, that's where, as I mentioned before, we have our training programmes, also shortly will be posted there our regenerative agriculture manual where farmers can find crop specific, how to books, how to regenerate their farms. We also have a blog on the website. And this year will be adding articles about specific regenerative agriculture let's say success stories, different farmers, what they're doing, how they're able to improve the environment and produce more nutritious food. We're also publishing a series of videos, which again is so important for consumer awareness and education. We've had two videos so far, one about explaining what regenerative agriculture is, another one explaining about our programme, and this will be followed by a series of videos to talk about the story of regenerative farmers.

**Matt Eastland** [00:50:41] Amazing. Thanks for an amazing plug there as well for EIT Food lover, so that just leads me to say a big, no huge, huge thanks to Patrick and Philip, and thank you all for listening in. So this has been The Food Fight podcast as ever. If you'd like to find out more, head over to the EIT Food website at [www.eitfood.eu](http://www.eitfood.eu) and please also join the conversation via #EITFoodFight on our Twitter channel @EITFood. And if you haven't already, shame on you, please hit the follow buttons that you never miss an episode. That's it for now. See you next time.