

Matt Eastland:

Hi everyone, 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. In this episode, we are making waves by turning our attention to the oceans, So our seas have long suffered from overfishing, from pollution and from destructive farming practices, putting immense pressure on marine life and our food system. But thankfully, innovation, technology and science are offering us hope. Today we're speaking with pioneers in the alternative seafood industry who are creating sustainable, healthy and vegan fish alternatives. These trailblazers are not only providing delicious and nutritious options, but are also addressing critical issues like bycatch, water use and habitat loss. So let's dive in and discover how these innovators are leading the charge towards a more sustainable future for our oceans. Joining us today Deniz Ficicioglu, co-founder of Betta Fish, who are doing incredible things with plant-based tuna, and Sina Albanese, co-founder of Koralo, who are making alternative seafood products using co-fermented microalgae and mushroom roots. Both of you, amazing to have you on the show. Welcome to The Food DenizFight.

Sina Albanese:

Thanks for having us. Amazing being here.

Matt Eastland:

Great stuff. Great to have you both here. Over the past seasons of the show, we've talked a lot about alternative products. So we've spoken about alternative meats, cultured meats. We've spoken about alternative milks. We've even covered sugar alternatives. But it's starting to really feel now like fish alternatives are the new big thing, like particularly when it's coming to using seaweed. But I guess my question is, why now? Why is this becoming such a big thing? Sina, maybe we can start with yourself.

Sina Albanese:

Yeah, no, for sure. So I think, well, we spoke about it before, you quickly touched upon it, that wild catch, so what fish and seafood we get from our oceans is currently stagnant or actually decreasing. So just this year, a report came out that 50% of all of our seafood actually comes from aquaculture. So it's farmed seafood. Which is actually insane to think about, because we always have this idea in mind that, you know, we're eating seafood from the ocean or from the seas. And it's actually really not true. Actually, if you think about it, every second piece of seafood or fish you eat is farmed. So I think why it's coming up now is we see, OK, there are certain species we simply cannot farm, or it's very difficult to farm, or prices are getting more expensive because we have a limited supply. And I think both on the consumer side, as well as on, let's say, the

food service side and the food manufacturing side, you're seeing this pressure building up. And that's why I think now we're starting to realize, OK, if we're actually going to create seafood in terms of farming it and growing it, How can we do that in different ways? And I think that's really where this supply source of new types of seafood, which, yeah, Betta Fish and Koralo are trying to do, really come into play. And I think that's why it's becoming, yeah, more of a trend recently.

Matt Eastland:

Thanks, Sina. God, I didn't even realize it's one in two pieces of our seafood are actually farmed. And I wonder how many consumers are aware of that, but maybe we can get into that. Deniz, what are the major issues you think are facing the seafood industry today?

Deniz Ficicioglu:

Oof, I mean, there are quite a few issues. Yeah, exactly. Where to start? I mean, Sina already mentioned a few, right? I mean, the growing aquaculture part in the seafood industry obviously creates new problems. I mean, there are a lot of fish species, specifically smaller fish species that are primarily caught just to feed into aquaculture. And these are not the fish pieces that usually would end up on our plates. Basically, we are depleting the oceans on all levels. Then there's the topic of acidification, like the oceans are getting more acidic, which is a direct result of our human activities and increased CO2 emissions. And it results in, for example, crustaceans, molluscs and corals. being not able anymore to build their shells or their structure, which obviously has a negative effect on the oceans. There are so many things that are wrong with the ocean economy at the moment. Increased number of dead zones. because we lack from the excessive land-based agriculture, we have a lot of nutrients that pour into our oceans and then result in an excess of nutrients, dead zones, etc., which further feed into the spiral of reducing the amount of fish stocks. Deep sea mining is a huge topic that's been coming up recently a lot. I hope we will be able to avoid. All of this is happening to the ocean, which is our largest storage of CO2 on the whole planet. And the seafood industry is basically just feeding into this. massive things that are wrong. And the seafood industry, like the traditional seafood industry, they are fully aware of that, but they don't have any alternatives at the moment. And obviously, they still need to make money. So they're not incentivized to make the transition to any better options.

Matt Eastland:

When you paint it like that, both of you, it is really shocking and it's really sad. But I guess thank goodness that there are people like yourselves out there who are trying to change the way that this is done and offering these alternatives to industries. I'd love to kind of get into with you both where your ideas came from, and I'm assuming it's kind of born out of this awareness of the shock of

what's happening in our oceans. But Deniz, can I stay with you? So I know that you're a published author. And you've said that, I think it was the challenges with your own diet have actually put you on the path to plant-based seafood. So I'd love to understand more about how your own experiences have influenced the founding of Betta Fish and the vision, I guess, for your company.

Deniz Ficicioglu:

Happy to share this. Exactly right what you said. So my whole journey into food started already 14 years ago on a very personal level because I can't eat sugar and wheat. And back then I was trying to adjust my diet and look into things I can still eat. And when I walked into the supermarket to find new products for new recipes without sugar or wheat, I left with an empty basket. I was completely in shock the moment I actually started to read the nutritional labels. Like that there's wheat and sugar in everything, not just wheat and sugar, corn, soy, you know, a lot of like monoculture crops. And that our whole food system is based on these monoculture crops. And for me, this was a huge shock and a huge aha moment at the same time where I was like, okay, I want to make a difference in terms of I want to come up with better products and better ideas. recipes, better ways that we can feed our body with nutritious food, but also at the same time do something good for the planet. And, you know, from that aha moment to actually founding Butterfish, there was a long journey, like we said, publishing cookbooks, starting to work in other food tech startups. But in my last role, I was researching even more about the future of food. And if you think about the future of food, there is no way around seaweed, like seaweed, macroalgae have to be an integral part of the future of our food system. And I was surprised that, you know, all these benefits that we're probably going to dive in later of seaweed are known for decades, but it's still not a commodity, you know, in a positive sense. in the food industry and that we don't use seaweed that much in our foods today. And that kind of led me to building Betta Fish because at the core and the heart of the company, we are a seaweed company. But we needed to find a way to make seaweed more attractive to consumers and yeah, to consumers out there. And that's why we built Betta Fish as our Trojan horse, as our vehicle to make something tasty out of seaweed.

Matt Eastland:

Amazing, and your products that you actually make, which I love by the way, so you have a product called Tuna, which of course for the listeners won't make any sense in terms of it doesn't sound any different, but it's actually Tuna, I totally get it, love that. And your alternatives are now on Sal Nom as well. And I think as well, I've even saw an alternative fish pizza, which I have to understand about because I'm obsessed with pizza. If you can make it out of alternative fish products, so much the better. But can I ask why the focus predominantly on tuna versus kind of other chosen products? Or is this just the first big one that you went with?

Deniz Ficicioglu:

Yeah, so when we started looking into what kind of ingredients can we turn seaweed into, what kind of applications can we build out of seaweed, for us the whole seafood space was the first choice because it just makes sense to replace an animal from the ocean with plants from the oceans. instead of going for wheat and soil over again. For us, this was like authentic ocean flavor, authentic fish flavor, coming from a variety and a mix of these. I mean, we're not using yet 10,000 of seaweed species in our products, but there's the option to use 10,000 different seaweed species. This was for us the most logical first step. And we chose tuna because it's one of the favorite fish species across the globe. If I would show you a can of tuna, like our tuna, or would drop it out of a plane wherever in the world, people would recognize it and understand what it is. It's shocking in one way, but also, you know, good for us because this means that there's a huge leverage for us to create and to have impact. And when we look deeper into the tuna numbers, we realize that it's not the fancy tuna steak that people eat on a daily basis, but this canned tuna. And 80% of all tuna consumed globally is actually canned tuna. So this massive opportunity for us to go into this, create something better and take off the pressure from And there's a huge convenience factor to a can of tuna. You just open it and put it on top of salad, into pasta or pizza. To comment on that, tuna pizza is one of the top three pizza in Germany. Like, I don't know how and why. Yes. Yeah. Like, basically, all students, like, until recently, before there was a trend, obviously, to go more planned days, were living off tuna pizza. Really? Wow. Okay.

Matt Eastland:

So, this is something I have not tried yet. It is absolutely going to be the next thing I try. So, can't wait for that. No, it all totally makes sense. And Sina, over to you now. So I know that your own journey with Koralo began with an idea inspired, I think, by a beachside walk with your dad. So can you tell us more about that moment and how that going from there, that has evolved into the vision behind Koralo?

Sina Albanese:

So it did all start with a beach walk. But yeah, maybe to give just a little bit more context to that. So I actually used to play football and I really liked doing that a lot.

Matt Eastland:

That was going to be my next question, but OK, go for it.

Sina Albanese:

I used to play football, that was my first career. I was already vegetarian back then, so I really loved seafood, but I decided, okay, I see the negative effect it has, so I will try to cut it out

more. I was working with a nutritionist at the time and he said, impossible, you cannot be vegetarian or vegan and be a football player. I cannot make a diet plan for you. I said, come on, let's try. No meat, that's non-negotiable, and no seafood if possible. And it was really interesting to see how it evolved and to see, OK, you can get actually super high nutritious foods without consuming any animal protein at all, because there is so much protein already out there. So that got my head started around, OK, how can we feed and boost our bodies more with, let's say, sustainable nutrition? And yeah, my passion for sustainability also started because in high school, we were writing a lot into textbooks and wasting a lot of paper. And me and my friends said, well, isn't there a better alternative? So we said, OK, there's this paper which is made out of stone and calcium carbonate, which basically, if you put it in a microwave, everything you wrote would disappear. And we thought, man, this is such a cool concept. Like, let's get investors. So all our friends and family to put in some money. We do one production run, we sell this to all the people in the school. And that was essentially my first startup experience. And it really gave me this drive to say, man, you can change something if you see something cool and innovation and it works. Why not try? So I think that for me was like the start between nutrition and innovation and startups. And then we come to the beach walk. So I had been reading a lot about seaweeds and these kind of things. So I was taking a walk with my dad and I was seeing the seaweed and I was telling him, boy, I've been reading so much. It's super nutritious. Like, it's super good for you. Like, why are we not using this more in the food industry? And keep in mind, he had worked 20 years in the food industry. I said, come on, let's do something. Can you come up with something? He said, well, I don't know, Sina. I'm not a genius. Calm down. But yeah, he spoke to an old colleague of his. And he said, well, maybe I have this idea. I don't know. And so basically, you have an engineer and someone who worked in the food industry a long time who says, boy, I have this crazy idea, his ex-colleague. I didn't know at the time, but I said, well, you know, why don't you guys just try it out? See if it works. Like, who knows, you know? So we hired a biologist and she said, well, I actually don't think this will work at all, but you know, I'll give it a shot. So we have a food builder and engineer and a foodie coming together with a biologist. And this is microbiology, so it's really a funny story. And yeah, we got the first kind of prototypes. It was little things, barely edible, but really we saw, OK, it can work in its biology. So we just kept moving from there. And yeah, now it's really crazy to see what it's evolved into.

Matt Eastland:

That's amazing. Also, it sounds almost like the start of a joke, isn't it? It's like an engineer, a footballer and a microbiologist walk into a bar, that kind of thing. It's incredible. Let me just pause for a second on, you know, because I think this needs to be pulled out. So you very humbly said that your first career was in football, but actually it was the German team Bayern Munich, so kudos. But I mean, how... How and why did you move? Because that

must have been such a hard decision for you, wasn't it? To go from something which I'm assuming was a passion for, and probably still is for you then, into looking to change the food industry. What made you pivot and how difficult was that to do for you?

Sina Albanese:

I think it's definitely super different, but in a sense, I would say there's many parallels that I take from both playing football and running a startup. I think it's kind of this dream vision to keep driving and pushing yourself for something better. And I would say in football, I struggled at the beginning a lot with it, but you keep training and they always say, well, 20% is talent and 80% is training. I think probably if you translate that into startups, I would say 20% is initial skills you bring and 80% is trialing and error and learning and going along the journey. So I think what made me say, okay, I stopped playing football entirely was essentially this point when I saw I'm waking up every day, but I don't think, OK, I can change the world playing football. So for me, it was this drive to say, what more can I achieve and what can I change and what positive impact can I have on either people or on the planet? And with football, I didn't see that. And for me, starting this first startup, in, let's say, reusable notebooks was this lighting of a fire to say, OK, you can actually have an impact, whether that's on the people or the planet. And I said, OK, if this is really my path and I can really impact something and do something, then I will continue this and go down that route. And I think it was a challenging decision at the time, but I for sure don't regret it at all. And yeah, now I think I have even more passion for what I do.

Matt Eastland:

Amazing. I love that. I feel very inspired. I feel like I should be going out now and really doing something different. So thank you for that. And let's talk about the actual product developments, the innovation themselves. So Sina, maybe we can stay with you. You're using co-fermented microalgae and mushroom roots, which I find really fascinating. So what drove you to put those two really amazing products together? How did you kind of come to that?

Sina Albanese:

Great question. I mean, the science behind it is a bit crazy, but I think I can explain it in words. But if you really want to see how it works, we just released the motion graphic, which literally anyone can understand, even like our three year old nephew of the company. I think that's probably the better explanation. But in a nutshell, essentially what we saw was that if you look at the food chain in our oceans, it all starts with microscopic algae. So they take on sunlight and CO2 and convert that into omega-3s, vitamins, and proteins. And basically, it goes up the food chain eaten by very small fish and seafoods. And then it goes up the food chain until we enjoy them as fish on our plates. with something that grows muscle-like structures incredibly quickly. And we said, okay, well, that's,

you know, mushroom roots, mycelium have proven to do that. So you basically can have the texture that you want to have in seafood. So this muscle-like structure, and you combine it with the source of nutrition that we enjoy in fish, and you get this nutrition-packed deliciousness with an incredible texture. And then it's a new type of seafood, essentially. So we're recreating aquaculture with other organisms. So for me, this is really a fascinating technology. Essentially, I would say it's not alternative protein, but it's a new form of aquaculture, because essentially that's all we're doing.

Matt Eastland:

That's incredible. I mean, when you explain it like that, it sounds like the choice was so simple, but I'm assuming there was an awful lot of research and thinking that went into that. But how amazing to put those two things together. And Deniz, so Betta Fish's plant-based tuna uses European seaweed and legumes. So can you walk us through the process of how you develop the product and you have to tell me how you go through the whole harvesting process as well because I'm just fascinated to know how do you go out harvest this and get it to where it's meant to be got to and process it and all those things.

Deniz Ficicioglu:

Yeah, sure. Happy to share. I mean, the fascinating thing about seaweed is, you know, when we step onto the shore and look out into the ocean, you don't see anything, right? Everything happens below the water surface. And there's this, similar to what Sina shared, you know, there are these forests of macroalgae, these forests of seaweed and these 10,000 different species. And so we have to differentiate here between controlled wild harvests and farmed seaweed. There are a lot of seaweed species that can't be farmed yet because there's just so little research. In general, the oceans are completely under-researched, underfunded. And there are really basically a few pioneers in Europe who started to farm seaweed around 10 years ago. And right now in Europe, you can farm around 10 species out of these 10,000. And what they usually do is they collect the seedlings of the seaweed. They take them to the hatchery. They put them in saltwater tanks where the seedlings attach to thick ropes. And as soon as the seedlings are a few centimeters big, they deploy the ropes into the open water again. So all the seaweed that we use really grows in the open waters, meaning it's like the zero input crop. It doesn't need any freshwater, any soil, any fertilizers, any pesticides to grow, but it takes up the excess nutrients from its surroundings. I mentioned all the excess nutrients that get washed into the oceans from agriculture practices. So this is really a win-win because otherwise the nutrients would either get lost or create uncontrolled algae blooms, which we don't want. So then, you know, you have these robes deployed in the ocean. And because seaweed is one of the fastest growing biomass on earth, after already four months, you know, it can get, like the species we use can get up to two meters. And then it's already, you know, it's not us who go out, but it's really our

seaweed farmers, our partners that we work with, the pioneers. We then go out and obviously under good weather conditions, they bring up the ropes again. They have special boats for that. They cut up the seaweed and then they transport it back to land. And this is actually already the moment where we step onto the stage because until we started working with the seaweed, most of the seaweed farmers just took the seaweed. and dried it, or they took the seaweed and put it into freezing storage. For example, in Norway there's a huge fish industry and a huge infrastructure around that, everything gets frozen. So the seaweed also got frozen. But if you think about all the food and ingredients that we use in our food system today, like we don't just use the ingredient pure as is, you know, they get processed in some way or another. My favorite example is the coffee bean. Like how on earth did anyone come up with the idea to peel a coffee bean, to ferment it, to dry it, to roast it, to grind it, and then pour hot water on it? And now we're drinking it all on a daily basis. And this was our example for what we need to do with all these different seaweed species. I mean, we're not doing exactly that. But we are looking into all these different seaweed species and looking, does this species, you know, does this kind of seaweed get better if we roast it? Does it get better if we ferment it? You know, what kind of seaweed do we need to combine it? This way, we are kind of building our Lego kit of different seaweed ingredients, processed in different ways, and then we have them either in powdered or in liquid form. And we can then decide, okay, what makes sense to build out of it. And for us, obviously, the first challenge, the first goal was to create alternative seafood. And that's why we specifically worked on both ends, creating the specific seaweed ingredients to go into the tuna, but also creating the tuna. And we don't have any facilities on our own, but we always work with different processing partners along the way. to create these unique mixes. The tuna itself and the processes itself are developed in-house, and this is what our core R&D is. And for the tuna, I think we needed one and a half years for the first version, you know, to be really good looking, tasty, not green, and really interesting for anyone to put on shelves. But to be honest, even since the first version of the tuna, that we launched, we've continued to iterate and continue to improve the recipe because every day we're learning some new methods on how to process seaweed and how to really get to the nutrients that we want, the flavor profiles that we want. And for example, the canned version of the tuna that only was launched half a year ago is a completely different formulation of the tuna we launched on the sandwiches three years ago. because they have completely different requirements in the production. The one can be produced fresh and the other one needs to resist a lot of heat and pressure and it still needs to taste good at the end. So there are lots of challenges along the supply chain, the value chain that we needed to solve at the same time.

Matt Eastland:

Amazing. I kind of listened to you both and I really am getting the sense, you know, we talk about kind of pioneers and trailblazers. It

really does sound to me like, you know, almost every step that you're taking is so new and like you're changing and driving the industry, which I think is, you know, amazing and, you know, huge congratulations. Deniz, you mentioned something there, which I'm assuming our listeners would love to know more about. So, You said trying to make tuna which wasn't green and so I'm interested how did you both ensure that the taste and texture of your products, which of course you know as we know for consumers is so important, how do you make sure that closely resembles traditional seafood?

Deniz Ficicioglu:

So for us, I mean, the most important thing was actually the taste. We said, you know, because there were also like terrible alternatives on the market already. And I think I've tried some of them. Well, and I honestly, I always I'm always surprised who puts those products on shelves, but they might like a lot of these products actually look like canned tuna, but they have nothing in common taste wise. So for us, I mean, also out of personal experience, obviously, if something doesn't taste good, I'm not buying it again. So first and foremost, we said, OK, we need to create this authentic tuna taste that is not, you know, basically what a lot of these other players are doing. They're buying ingredients off the shelf, resulting into their buying it soy textured or wheat textured because it's high in protein. And then they're buying a specific natural or artificial aroma from one of those huge flavors. houses in Europe and they pour it on top and that's it, you know, but they taste very generic. They have a very strong, not so appealing taste in my opinion. Maybe you know that from some of the meat alternatives, but it's okay, but I would not necessarily buy it again. But you want, you know, if you're paying for a new product, you want this experience and something really tasty. So for us, this was tasty for us, you know, almost important. And this is why we spend a lot of time actually working on the seaweed mix that we use for the tuna. But like you said, seaweed is green, seaweed is brown. And if you process it, it doesn't necessarily turn out to be a white product in the end. It's still one of our challenges, one of our research challenges, one of the core challenges that we are working on. And with the next ingredients that we are developing, actually we have some exciting results with a clear extract, which we could use as a clean label aroma, only will be declared as a seaweed extract. But this is a game changer for us and probably also for some of the industry other industry players because this means we can take the product to the next level Right now our product resembles tuna, but it's still on the grayish Side and that's of course something we want to change in the future texture wise we get really good reviews, but I think the color which is you know, as part of the first site, part of the first experience is something we want to change. And also, if we have new ingredients based on seaweed that are clear in color, it allows us to venture into new areas, you know, into whitefish, or maybe at some point, even dairy, you know, like there are so many different applications than possible. as soon as we crack the color code. But seaweed is very different from land-based plants. The cell

wall structure is completely different. And as I mentioned, there's very little research done already in the seaweed space. This is something we need to solve ourselves.

Matt Eastland:

Sina, to your products, how are you ensuring that you kind of get that taste and that mouthfeel?

Sina Albanese:

So I guess we took very different products, so I guess also the requirements are very different because if you compare a tuna, canned tuna, to a whole cut white fish fillet you have very very different requirements in terms of taste and texture whereas with the tuna you want an oily and you know very deep tuna taste and you know it's very very chewy texture which is soft slightly oily you want something completely different when you're talking about a fresh you know, fish fillets. You want something which is completely white. You want something which is flaky. It's soft, it's chewy, but it has a bit more consistency than the tuna. And you also have a taste which is actually surprisingly bland. Like, it reminds you slightly of the ocean, but if you get too much fishiness, you think, oh man, it's spoiled. Like, this is not high quality. So it's super interesting to see what changes when you talk about different species of seafood and fish. And I think that's also one of the key challenges is to say, if we're tackling the space of seafood and fish, because there's so many different species and so many different flavor and texture profiles, it really matters what you're trying to maybe mimic or what texture, what, you know, taste consumers are really looking for. And I think for us, we probably took the hardest testing ground because we came to Korea two years ago. And I mean, Korea is one of the highest per capita consumptions of seafood worldwide, like even more than Japan. So these people, they really know their seafood and they're expecting the highest quality. So So really when it came to taste and to texture, we really had to hit the mark. And I think what's really interesting is we're growing two things together. So similar as plants, if you give them more water or more sunlight, how you perceive a taste and a texture is also completely different. And that's also how you need to imagine us producing our seafood. So essentially you can change small things in how you cultivate and how you grow it and you will get a completely different result. So these past three years have really been constant trial and error to test what works, what doesn't work, what are consumers looking for, what's different in terms of taste and texture, perseverance in in perception also in Asian consumers and in European consumers. And I think what's really been key is working very closely together with our customers and doing many, many different tests to see, OK, do we really understand what they're looking for? What's interesting here is actually also in Korea, we had a product which was very fishy. And once we completely reduced the fish note and the fish flavor, people were saying, oh, well, it's actually softer and it doesn't smell as strong as fish. But actually, I really like it. Like, this is

something I really hate about fish. And now with your product, I don't have it at all. So I can cook this at home. Like, I don't have any problems with it, which is something which I actually don't think about. So maybe we're not trying to mimic seafood, we're trying to create new types of seafood. And also, what's even more important is, okay, you can hit the taste and the texture. But in Korea, it was like, well, but still, why should I buy it? You know, like, there's no extra benefit in it for me. And then if you tell them, well, it's actually, you know, it has immune boosting properties or it's extremely slimming because it has less calorie and fats than fish. And, you know, it has omega-3, so it's good for your memory. It's maybe good for your skin or your hair because of the vitamins inside. They say, wow, OK, then this is something even better than fish. But on top, what was super interesting, we just did an ex vivo study, so a study done by a research institute that analyzed our product versus a commercially bought product. And what you could see was actually that our product had an immune boosting effect, which was stronger than the one that was commercially available. So if you just start to think about what could this mean, it could mean that at some point, maybe food becomes our medicine. Like once we can nourish ourselves with food that are so highly nutritious that we don't need medicine anymore, like this can really be the future. And I think when we're talking about what our technology can ultimately do, we're really trying to emphasize how can we capture that nutrition and those nutrients and really enhancing them to really boost not only our health, but also, you know, our beauty and our appearance. So I think that's kind of the direction we're going into. And I think it's a very interesting one as well.

Matt Eastland:

Sounds it. Yeah, I mean, I can you're obviously tailing it to to sort of consumer needs and trends, which, again, I'd like I'd like to talk about as well in a second. And Deniz, in terms of so we've heard about the kind of health benefits and well-being benefits. What about the environmental benefits of your products?

Deniz Ficicioglu:

Yeah, I need to add one thing to Sina's comment, because I 100% agree with Sina on this. I think our food needs to become our medicine, but it's impossible to achieve this with the existing methods and the existing agricultural practices. If we look at our food system, we created a huge mess. Soil is depleted. The food that we grow is not as nutritious anymore. It's super affected in general by droughts, by heat. We have a huge food insecurity if we look at the current food system. And that's why I love so much what Sina is doing, because she's also like us. She's developing new ingredients. And we need these new ingredients for our food to become medicine. And, I mean, we do this obviously to feed ourselves and the human population, but we can't do it anymore at the expenses of our planet. And for us, seaweed was the first choice because it also creates systemic change. Everywhere where you grow seaweed, there

are studies that biodiversity is increased. Everywhere where you grow seaweed, the acidification of the ocean is stopped because the pH level is more regulated within seaweed forests. In general, obviously seaweed stores CO₂ too, but that's not our focus because we harvest it and use it in our products. But what I really like about the seaweed cultivation part is it also creates an alternative income for fishing communities. And if we don't give this alternative income where they long term can make a living, nothing is going to change. So we need to bring along all these players in the supply chain to really actually have the benefits that seaweed cultivation and reforesting our oceans could have. And there are multiple ways how we track the positive impact that we have with our product and the seaweed that we use. Very basic is fish spared. For every can of tuna, we can say how much tuna is spared. It's bycatch. There are numbers that with every kilo of fish that gets caught, there's actually more than a kilo of bycatch caught, which then dies, further destroying our ecosystem. I mentioned the acidification of the ocean, the dead zones, etc. But in order to counter this, we need humans to eat those foods. And this is where the nutritious aspect that Sina mentioned comes into play. As sad as it is, most people don't buy plant-based canned tuna because they want to save the tuna. It's too far away from their daily lives usually. They've never seen a real tuna in their life. But what consumers know is tuna accumulates a lot of heavy metals because it swims in the oceans for a while and consumers don't want that. They're worried about have a use of antibiotics in salmon farming or shrimp farming, you know, they're worried about microplastics. So they're actively looking for alternatives to that. And then obviously, they require that the products are even better than the original and delivering even more inconsistent nutrients.

Matt Eastland:

And again, so you've raised a really interesting point there. So, I mean, I've listened to both of you and I always, you know, there's so many benefits here and I'm always asking myself the question, well, why have these products not kind of emerged and why are consumers not embracing them more? you started to say you've got to go above and beyond. But how do you educate consumers and restaurants? I know that you're selling into the hospitality industry as well. How do you go about educating them on these benefits so that they really embrace them rather than this just being a fringe thing that will never scale up? I'm interested to kind of hear both of your thoughts about how you are both doing this. So Deniz, maybe I stay with you and then Sina, I'd like to hear from you.

Deniz Ficicioglu:

It sounds weird, but I don't think education in this case will really help us short term, because education really is a very long process. And of course, I believe in education and everyone needs more education. But in this case, it would take too long. It would take too long for everyone to educate on the amazing ingredients

Sina and Koralo was using about the seaweed. What I believe is the biggest leverage is price and availability. So making products affordable, not pricing them at a premium, and really getting access to it. I mean, if we are only selling products in like very niche artisan food stores, you know, the mainstream is not going to go there and they're not going to try it. And I think you know, just getting out there, getting the product in front of people, making them taste, because tasting is believing, you know, if they taste it, it's like this huge light bulb going above their head, oh, wow, there is actually an alternative. So for me, tasting is the biggest way or the best way to educate people, because that's then when they get really curious.

Matt Eastland:

Tasting is believing, right? Okay, so affordability, accessibility and getting consumers to actually taste the product, that totally makes sense. And Sina, you've taken the bold move to go to South Korea where your customers have very exacting standards, shall we say, when it comes to seafood. So how are you making sure that the products that you're delivering are hitting all of those notes for your customers?

Sina Albanese:

It was also a learning process for us because here nobody cares about the seafood industry, really. It's all about taste, texture. But something which people really have as a societal pressure is their appearance and also their health and well-being. What we saw was, okay, there's actually not really an opportunity for us to market this as alternative seafood, because that's just simply not an attractive proposition for our consumers here. But really seeing the pain point to say, hey, you have a product where, you know, you don't have to go through the pain of dieting, of eating salads, of eating nasty shakes and this kind of supplements and this kind of stuff, but you can eat something which is slimming, good for your health and your beauty, and it tastes good. And suddenly all the light bulbs went up for us and we said, OK, this is really it for us. Like in Korea, we're not alternative seafood, we're not really new fish, but we're wellness food. And I think that was a pivotal move to us to say, what are customers actually struggling with? and how can we emphasize that our product is facilitating them to something which is solving their pain point, which is helping them with their struggle, which is making life easier and more enjoyable. And the example I like to draw here, which is maybe a little bit controversial, but which is the tobacco industry. You had a huge increase in e-cigs and vapes all of a sudden, and they never marketed it as, you know, an alternative really to smoking. They didn't say, oh, we're alternative cigarettes. But they said, oh, we're elevating the experience by, you know, making you not taste or smell like cigarettes. And it was a completely different experience and a new product proposition. So I think, yeah, that's kind of the example I like to draw, even though it's a bad industry in itself.

Matt Eastland:

No, I think it's a great example and I think you're absolutely right. And it's a really interesting insight from you both that, you know, why push against, you know, what is a very difficult door to open and actually you double down on consumer needs, enhancing the experience and just making it easy and better for consumers. And then, yeah, it's an easy sell then, right? So I think that's a really important takeaway for the show. We're coming to the end of the show and it would be remiss of me to finish this conversation without talking about the future. So what are your visions for the future of the alternative seafood market and where do you see this heading in the next five years? Deniz, what do you think? You spoke about lots of possible new products, so I'm fascinated.

Deniz Ficicioglu:

Yeah, we have so many ideas. Where do you go? I mean, in general, I mean, I already mentioned that my vision is that in 10 years, maybe we'll buy just a pure seaweed. But obviously until then, it's a long road until then. And I always say we are creating this new ocean economy, you know, this new ocean food economy. And both micro and macroalgae from the ocean, you know, there's so much potential. and so many ways that you can utilize it and that you can separate the flavors and the nutrients and really use them in different products. So I like for the alternative seafood market I still think we just started. I mean if you look at the shelves in supermarkets for every like 20 alternative meat or dairy product, there's one alternative fish product. So there's massive room to fill the gap. We're just starting out. There was a bit of delay in the growth of the seafood space, but it's the fastest growing out of all, which is exciting. But we have some catch up to do because everyone was just jumping on meat and dairy first. So this will get really exciting with products like Koralos and our to finally bring products onto shelves that are both tasty, but bring added value. And then beyond that, I want to see our seaweed ingredients, not just in the alternative seafood space, but in the alternative meat space, in the alternative dairy space, in the blended product space, which is a huge topic at the moment. How do you transition consumers away from meat eating? And maybe we can reduce it by replacing parts of sausages and meat blends to vegetables. But obviously, if we then use the same resources, why not use seaweed? So this is a really interesting topic that we are working on. And because seaweed is a natural flavor enhancer, it includes a lot of umami. It's perfect for blended meat products, for example, like these hybrids. So we are working in all sorts of directions through seaweed, but the alternative seafood space itself is just starting out.

Matt Eastland:

Amazing. What an exciting place to be in. And Sina, what's your vision for the future, you know, five plus years out?

Sina Albanese:

If you hear my ultimate vision, it might sound very contradicting, but I think for me, ultimately, the goal is to see artisanal fishers and their families have a future. I think for me, that's ultimately the goal, because these are the people right now who are struggling the most. In our existing system, where industrial fishing is depleting the resources they have, the livelihoods they're struggling with, their nutrition. It's not going to be countries or regions like North America or Europe which will have problems with seafood or with seafood supply, it's going to be Latin America, it's going to be Africa, it's going to be Southeast Asia, which really feel the burden of a depleting seafood supply. So I think if we can diverge some of that pressure onto the system by having an impact which is in volume, which is really in distribution volume, that we can cover a certain amount of the seafood industry. and therefore allow supplies as in resources to regenerate in the oceans, this for me would be the ultimate dream. So I think we're trying to partner very quickly with different companies, large players as well, to be able to bring that volume and bring that positive impact so we can really see a sustainable seafood industry throughout all channels.

Matt Eastland:

Inspiring stuff. And, you know, I really, I really hope that both of these, these visions come true. And, you know, for, I know that you're both members of the EIT food community, and I'm so delighted that you are. And can I ask you what, if this is such an amazing space, which it obviously is, and it's got massive growth potential, what advice would you give to any innovators or entrepreneurs out there who want to get into the space? You know, where do you, where do you start?

Sina Albanese:

I would say like be brave enough to do the unconventional and in that sense be flexible enough to get rid of all your previous beliefs and thoughts and ideas because I would say what really matters is in the end what the consumer wants and what the consumer says. And if you're more of a sponge to absorb all of that information and if you can take failures, not as failures, but as learnings, that's where true innovation comes about. So I would say embrace all the failures and learnings you can, keep innovating and keep listening to your customers and consumers, because ultimately, yeah, they're going to be your greatest judge.

Matt Eastland:

Incredible advice. Thank you very much. And Deniz, what advice would you give?

Deniz Ficicioglu:

I would say it's about three key words. One is patience. I mentioned it before and I can't stress it enough. Change takes time,

specifically in the food industry. Second is partners. Really try to find the right partners early on. The partners who are already convinced of the solution. There's no point in trying to convince anyone who still doesn't believe in the space. I mean, we were super lucky to have a lot of really strong partners along the way, a launch partner like Aldi, you know, who introduced us to a mainstream audience. Currently, strong partners such as Rewe, German train service, Pizza Hut, you know, like, look for the partners who have ingrained change and sustainability goals in the company and really want to change something. And then the third keyword for me is added value. Don't just go out to do something. Don't just go out and use the same old ingredients and ways the incumbents did. But really think about a new way of how you can create added value, not just to the consumers and not just to the planet, but also all these players in between. How can you take them along? How can you help them achieve their goals? Because if you help them achieve their goals, they will use your products and this is basically the ultimate way to achieve our own goals.

Matt Eastland:

Got it. So patience, partners and added value. Love that. Thank you. And both finally, I mean, actually, this has gone on for a while now. And I think it's because this is just such an interesting space. So, you know, thank you for all of your insights. I have to ask you just a final question. I kind of get a sense where this is probably going. Do you think, from where you're sitting right now, do you think we can save our oceans and reverse the environmental damage that's been done? Because obviously that has been a lot of damage. All of the great work that you're doing is obviously going to have an impact. But do you think it's going to be enough? Sina, what do you think?

Sina Albanese:

Wow, this one hits emotionally for me, I would say. I would hope so, yes. I think we're at a point in time where we can still make a change. And I think it's not late enough. It's never too late. I don't want to sound detrimental. But I think we need to come up with more supply sources, more solutions, more innovations to really be able to diverge some of the pressure that right now is on the seafood industry. Because we just saw it recently, even with, let's say, a report coming out saying this Chinese company, Vessel, uses slave labor to catch squids. The Chinese court said, okay, we understand, but we cannot stop giving it a subsidy because we simply need shrimp and squids. Like, we cannot do without it, like our food. security is at stake here. So yeah, sorry about that. We'll try to change, but we need that seafood supply. So I think for me, this was a key wow moment to say, OK, if we really want to change something, we need to change the whole system. And it can't just be from us, but it has to come from, you know, the large industry, whether that's wild catch, aquaculture, consumers, distributors, the whole supply chain really needs to change. And we need to come together in the belief that it's in our best interest to do so from

all sides. So if that means collaborating with the traditional industry, I'm happy to do so. And I think it really needs collaboration and strength. And we need to really want this change. Because in the end, it's a good change. I'm optimistic, but I think we need to pull together if we really want to pull it off, I guess.

Matt Eastland:

I love your optimism. And of course, that's exactly what we're trying to do with the tea food community. It is that full system transformation. So thank you. And Deniz, are you as optimistic as Sina?

Deniz Ficicioglu:

It's a clear yes from my side. Why is it a clear yes from my side? First of all, I think there are already a ton of amazing solutions out there on all different levels, not just in the food space, but there's so many amazing solutions out there. Just the missing link is funding. There's a huge funding gap for all the ocean innovation, for all the ocean health topics. But people have realized the importance of the ocean and it's finally getting more attention. And people are starting to pour money into it, even though it's not necessarily the favorite of investors because all these climate solutions, they don't deliver fast returns like a software company or something. It gets the attention so and funding will come um and uh yeah strong belief on that side and um second i mean my name dennis in turkish means the sea so obviously you know it's also very emotional topic for me um and If I don't believe that I can create a difference with what I do, I mean, how on earth is someone else supposed to believe in this? So I strongly believe that we are going to make a difference, that Koralo is going to make a difference and that we really will be able to reverse it. But we need to be optimistic on this, because if we don't believe it, then no one else will believe in us.

Matt Eastland:

Got it. Yes. Thank you, Deniz. And thank you both for your optimism and for your wisdom in this space. And it's been a fascinating, fascinating discussion. And I know that our listeners are going to get loads from this. So thank you both for being on the show. Before we kind of wrap up, finally, I have to ask, you know, so Where can people find out more about who you are and what you do? And I guess specifically where you can actually buy your products. So Deniz, let's finish with you. Where can people go to find out more about you?

Deniz Ficicioglu:

To learn more about us and Betta Fish, obviously website betterfish.co. We share a lot of insights on LinkedIn, both on my personal profile, but also on the company profile. We are very actively sharing insights on how we work, how we work with partners,

learnings from conferences. So definitely LinkedIn is the best way to stay up to date. Also, heads up, we'll be launching an exciting crowd lending campaign. later this year, so it might be an interesting opportunity for people to be part of our journey. And if you want to get a taste, within the German-speaking area, it's Coop in Switzerland, it's Billa in Austria, it's River, Hit, Rossmann in Germany, but also we have our own little online shop where you can buy really delicious tasting bundles.

Matt Eastland:

Amazing. Thank you very much. Definitely going to be looking out for the crowdfunding opportunity. Everybody take note. And Sina, what about yourself? Where can people go to find out more about you and Koralo and all the amazing things you do?

Sina Albanese:

Yeah, so we're also on all the socials. So you can find us corallo.newfish on Instagram. And we're also on YouTube now starting out and starting also on TikTok. So we'll be around and sharing some interesting insights also on LinkedIn. If you also are interested about the Asian food market and Korea in specific, being this cross national team, you know, we have quite a few insights to share there as well. And right now you can find us in restaurants in Korea. We just also applied for a novel food. So please, EU, be very fast and you can find it in the EU and US hopefully then very soon. But yeah, if you're ever in Asia, have a taste. And yeah, until then, you know, feel free to follow us on the socials where we share everything about new fish and the wellness food industry, enriching your beauty and health. So yeah, feel free to check us out.

Matt Eastland:

Thank you very much Sina and thank you both Sina and Deniz for your time today. It's been amazing. So huge congratulations for everything that you've achieved and can't wait to hear more about what's coming next soon. So thank you both.

Sina Albanese:

Thank you so much.

Matt Eastland:

Great stuff. So thank you all for listening in. This has been the Food Fight podcast. If you'd like to find out more, head over to the EIT Food website at www.eitfood.eu. Also, please join the conversation by the hashtag EIT Food Fight on our X channel at EIT Food. And of course, if you haven't already, please hit the follow button so you never miss an episode. See you next time.