

# New sustainable foods: What will the future taste like?

This is a transcript of one of the sessions from the [UT Nutrition Institute](#)'s 2nd Annual Taste of Texas event that took place virtually on October 2nd, 2020 via a video conferencing software.

Session Description: From cricket farming to eco-friendly meat substitutes, the food industry is turning over a new leaf. But, just what will sustainable food options look and taste like, and how likely are consumers to adopt these new products?

## [Introduction]

### **Marissa Duswalt Epstein**

So, everyone has probably been hearing the buzz around meat replacements and animal protein replacements, and today we have the pleasure of hearing from three executives, seasoned entrepreneurs, and then one of our very own here at UT, Janet Zoldan, inventor and co-founder of a company in this space right now.

So, as our participants join the meeting, I am going to take a moment to introduce our illustrious moderator, Meeta Kothare, who is a colleague of mine here at the University of Texas. Meeta is the director of the Social Innovation Institute and an adjunct professor in the McCombs School of Business. We are delighted to have Meeta here with us at McCombs. She also holds an LBJ School of Public Affairs appointment and teaches popular classes in financial innovation for social impact, impact investing, and social entrepreneurship and innovation. Her current interests include social innovation and the use of financial tools for social impact and sustainability. Her areas of expertise include impact and sustainable investing, impact measurement, social entrepreneurship and innovation. And so, she's really perfect to help guide us through a conversation on this new, exciting area of innovation in the food and beverage industry, and what it might mean more broadly for society, the environment, and the planet at-large.

Meeta holds a PhD in finance and an MS in applied economics from the University of Rochester, as well as an MBA from the University of Georgia where she was the class, fun fact, valedictorian. So, without further ado, Meeta, I'll turn it over to you to kick off our panel conversation today on sustainable foods.

### **Meeta Kothare**

Thank you, Marissa, for that very kind introduction. And welcome to our participants. It's great

to be here moderating this discussion on an all-star panel. I'm going to very briefly say who they are. I think it would be more interesting for us to hear from them their own story.

## [Why (and what is) lab-grown meat?]

### **Meeta**

So, let's start with my colleague, Janet Zoldan, our UT researcher, inventor, professor. Let me ask you, Janet, why lab grown meat? What's the interest and what does it even mean? And how did you come about this journey?

### **Janet Zoldan**

Yes, of course. So, lab grown meat is basically trying to engineer the meat from cells. And the idea is to recreate the texture and the taste of meat, but instead of using the traditional and the super unefficient way of getting protein into our food, then actually generating it in the lab.

And the whole idea of cell-based meat, I think, for me, was very attractive because I could foresee all the social and economical benefits of transitioning from growing cattle and all the associated work related to it until we get this protein to the consumer. But really getting everything concise and centralized by generating meat from cells.

And so, also looking at their animal welfare and, from a sustainability point of view, really reducing all the excessive costs in land and in water and in energy associated with farming.

### **Meeta**

Great. So, what exactly does it mean to grow meat from a cell?

### **Janet**

So, the idea is, for now, that we take a biopsy and isolate the cells and basically build the meat from the ground.

And so, we use biomaterials—which that's my expertise—as a scaffold, and we grow the cells, and we create the whole texture and, hopefully, the taste of meat.

### **Meeta**

And this could be any kind of meat in future?

### **Janet**

Yes. So, what has been so far really successful in the cell-based meat is everything related to

ground meat. So, burgers, chicken nuggets... and we want to go to the next step of making a brisket and making steak or beef jerky. So, meat that has a structure to it.

**Meeta**

I'm sure all of us Texans would love that. Christine, tell us a little bit about your journey and what brings you to Gathered Foods and what your mission is now.

**Christine Mei**

Well, thank you so much, Meeta. You're making me hungry again, you know, [laughing] listening to Janet talk about meat.

So, you know, my journey is an interesting one because it's really taken me around the world. In fact, I'm actually a UT longhorn, so I got my chemical engineering degree right here in Austin, and it was really getting my first job, too, through the resource center. So, I always tell this to the UT folks. So, you really can have a just a great start to a wonderful career studying at UT. I started manufacturing when I came out of school, and so learned that whole kind of supply chain network. But then decided I want to learn a little bit more about business, and so I ended up going back to business school.

And during my summer internship, I was an intern in China for Procter & Gamble for marketing, and that was really my first love of—and my first kind of exposure to entrepreneurship. You know, it was really starting up a new business in a new country with new categories. It was completely fascinating. So, when I got out of school, I went back—I moved back out to Asia and I spent probably about eight years out there launching categories.

So that was with Procter & Gamble. And I've then built a career in CPG consumer goods for over 30 years. So, I've worked for Procter & Gamble, for Nike, for the Coca-Cola company, Philips, and Beiersdorf. So, holding roles in operations and marketing and strategy and in sales, so really had an opportunity to look at businesses in different ways. But I was always fascinated by the startup community, and so last year I made a personal decision—so I did two stints in Asia, so probably about 13 years in total—so last year I decided I was going to move back, and I really wanted to think about how I wanted to create my 2.0 and decided to jump into CPG, health and wellness, and something around food.

And that led me into this opportunity with Gathered Foods. And I, frankly, was completely fascinated by it because, you know, the plant-based food journey is really on a trajectory of positive disruption, and that's why I'm so drawn to it. Because the playbook is yet to be written, just like what Janet was talking about. The cell-based playbook is also yet to be written, and if we can be a part of something that's disruptive and meaningful for the future, that's what's key.

And so Gathered Foods has a consumer brand called Good Catch, and Good Catch is a chef-driven brand that's developing flavorful, 100% plant-based seafood alternatives that have the taste, the texture, the nutrition, and the experience of seafood without harming the environment. And that is really what attracted me. It's about propelling change, propelling change for craveable plant-based foods, right, that enable our people and our planet to thrive.

**Meeta**

Thank you, Christine. And welcome to Austin! We're so—

**Christine**

Thank you!

**Meeta**

—[inaudible] have you. Absolutely. Talking about craveable, what about crickets? Jason? That just seems out there.

**Jason Jones**

Yeah, I suppose that's why I have quite an interesting job.

I've been in CPG—really better-for-you food—for about 12 years now. Before that, I had a pretty typical corporate career where I suppose I learned a lot. One of those things being, I get bored easy, and that I really wasn't cut out for really large companies, being at fortune 50 type organizations. And moved Austin in '08 simply because this seemed like fertile territory for starting something new and also doing something that mattered, just with the community really being supportive of entrepreneurship.

And, one thing led to another, as they say, and later that next year, in 2009, all of a sudden, I was an egg farmer without any background in agriculture or even food. And the Vital Farms journey has been an amazing one. It's really surreal to realize that we have a stock ticker now. It's just—if you could only have seen how humble our beginnings were. That really wasn't on the docket but, you know, that's, to me, validation of our industry and the change that Christine is speaking of, and Janet, as well. You know, I guess I'm a sucker for disrupting things from the bottom up, and the food industry, in some ways, I think is easier to do that than others. You know, the barriers are kind of low. You can get something started. And I'm just really proud of this scene of which Austin is an epicenter.

And since, you know, being part of Vital's run, I've worked with a lot of other growth stage companies across different categories and had gotten to know the founders at Aspire Food Group—who were Canadian, but had set up their company here in Austin for a lot of the same reasons that I moved here in the late aughts.

And, yeah, it's a curious thing. I heard the concept when I met Muhammad at a trade show one time and, you know, couldn't see through to the how, but I knew the what and the why were spot on. You know, we need more alternatives, and I'm very much into creating options for folks.

And just like we needed a better egg a decade ago, I think we need more and better... I'll say mindful meat options or protein options. And so, I was drawn to this project. It's really a technology company, you know. There are PhDs and robots and artificial intelligence all over the place at this company.

But what has yet to be written, as Christine was alluding to, is the playbook for how to drive consumer adoption, and that really interests me. I know this has a place in the world and needs to happen. Don't have all those answers yet, but we've turned over some, I think, some really meaningful clues.

And I would say stay tuned, because I'm really excited about the prospects of really introducing this as a, you know, a planet-based protein that is just earth friendly, gives us a lot of what we need, and I think is, you know, representative of the stewardship that I think we all want to carry forward in the world today.

**Meeta**

Thank you, and, by the way, congratulations on the IPO.

**Jason**

I appreciate that. It's still pretty surreal, like I said.

**Meeta**

Yes, yes, absolutely. What a win that was.

## [Consumer adoption of alternative proteins]

**Meeta**

So, talking about, you know, consumer adoption... that's a big question for all of you, really.

So, let me start back with Christine, actually. What—? When I think about—well, when the average person thinks about red meat—there's a lot of... there are a lot of questions around consumption of red meat. Those of us who don't work in this field still know there's some kind of talk about red meat being bad for you, bad for the environment. How do you think about that in the seafood world? What do you say to people? Why is seafood, the way we consume it today, not sustainable?

## **Christine**

You know, Meeta, I think that the first thing is that anytime you're looking at an alternative protein to conventional food whether it's meat or seafood, you have to deliver on taste, right. I mean, it's taste, and then begin to emulate texture. Because when you when you bite into it, it's gotta taste good. And when you chew on it, it's gotta have the right texture, right.

And then if you are looking at trying to introduce more, say, healthy options into your diet, you want to make sure that if you're replacing anything that delivers comparable protein, right. So, it's taste, texture, comparable protein. These are really, really important. And so, any type of option... the only way you're going to get a consumer to be able to continue to consume—they can try it once, but then you want them to come back, right—and so they continue to consume is to deliver quality on all of these fronts, right.

And so, we know that—from at least from a plant-based standpoint— you know, that over, you know, say 98% of the people who buy plant-based foods also buy meat. So, what that means is that there is a migration now and there's an interest and there's a growing awareness level of plant-based proteins being available. But we know it's a journey, right. I mean, I think that I—we know that maybe over three quarters of the people within the next 12 months plan to try it, right. They either going to supplement or replace a meat product in their diet with some type of alternative protein.

So that means there's an awareness about it, and so when we think about—so seafood is, you know, there are actually if you think about land animals are about 30 species or so that humans eat. For seafood, they're about 200 or 300 different species, and so we know that it's not going to be sustainable, right, for us to continue to overfish and create a sustainable living ocean. So, we need to be able to provide those alternatives, but have that experience, right. You want to be able to have the same type of experience through consuming an alternative seafood protein.

And so, what Good Catch actually has is that we've worked really hard— I mean, it's not one of those overnight wonders that, you know, all of a sudden, we thought of it. It took years of investment, right. And so, we have a proprietary, non-GMO combination of six different legumes—and okay, now you're going to test me. It's, you know, it's peas, chickpeas, lentils, soy, fava beans, and navy beans. And the combination of all of these, then—and it's a proprietary combination, right—so when you chew on it, it actually tastes like say, for instance, one of our white fish or our tunas.

The other thing and then I'll—I get excited about this, Meeta—so the only other thing is that if you're trying to now introduce to say a flexitarian, right, I think that one of the most fun experiences for us is our frozen entrees that we just launched in July. So, we have plant-based

fish burgers, crab cakes, and Thai fish cakes. So, these are dishes that are recognizable by consumers, right, but I can tell you from a pers—I'm a flexitarian, and I can tell you that I absolutely enjoy the taste and the experience from these products, so—and that's as a consumer, not as a CEO. [laughing] So, it's really about providing the right experience.

**Meeta**

I will second that, as a consumer. I do like the taste.

**Christine**

Awesome.

**Meeta**

So, yeah it is and that has—you know, the evolution of this over the last 15 years has been interesting. Some of us wanted to try alternatives did it for a variety of health reasons, but felt like we were compromising. Whereas, increasingly, taste is becoming a big part of what we have to compete on.

**Christine**

Absolutely.

**Meeta**

You've done a great job. Janet, how do you see the adoption of lab grown meat? I think of all the things that may be the furthest.

**Janet**

Yes. So, first of all, plant-based food is like paving the way for us and getting the consumers used to the concept of, you know, really reconfiguring, re-engineering—I'm sorry an engineer. Everything in my life is engineered—food.

And actually, there was recently—last February there was a paper that did a very large survey over multiple countries looking into perception of people of cell-based meat, and it was really high. About, I think, the lowest percentage... 70% of the people who were surveyed said that they are very interested in tasting cell-based meat. So, that's really encouraging. But again, I feel like that plant-based food is really paving the way for us, and I totally agree with Christine. If we can recreate the texture and the taste, then I think we have a winner.

**Meeta**

Yes, absolutely.

[How are crickets food?]

**Meeta**

Well, let me ask Jason. What do crickets, cricket flour, and cricket protein tastes like? I haven't gone that far in my journey.

**Jason**

We can fix that.

**Meeta**

Send me a package! No, I really, you know, I realized that many people in many parts of the world actually do consume insect protein. For us here, we're not that aware that many of the products we buy are allowed by the FDA to have a small amount of insect... contamination, for lack of a better word. So, the ginger I use in my tea is probably contaminated with a little bit of insect stuff. So, maybe I am an insect consumer already. But what does it look like to make, to grow, to farm crickets to actually make this tasty?

**Jason**

Yeah well, you know, our farming process is really novel. And it's—I mentioned it's more of a technology company at its heart. I think perhaps Good Catch would say the same, but it's an indoor, vertical, modular, highly scalable, kind of a low-touch farming model.

So, this is not a like a barn-based agricultural operation where it looks really like any—I guess the closest corollary would be in maybe a vertical produce farm, where it's just highly efficient, highly controlled. All of the biological and environmental factors are optimized. You know, one example of how we've done that in about five short years, the team has taken the life cycle of this livestock—it's actually kind of funny to think about it that way, but that's what it is. It's little meat, I suppose.

But we've taken the life cycle of the animal from 60 down to 30 days to maturity. So, if you think about, you know, leaps forward. That's, I'd say, pretty substantial. I think, you know, if you look at let's say the broiler chicken industry, it took them a lot longer than that to achieve that type of efficiency and economy in a grow-out operation. But it's, you know, it's as it turns out that is probably the perfect biological environment and one in which the animals are most comfortable.

So, that's important to us because even though it's a small a critter and one that, you know—a word you've just used, "contamination", you know, that is part of our marketing challenge, certainly, but... you know, that's part of what we have to do is break that cultural association, I suppose. And I would say that's largely what's in front of us here in the US market, you know.



Our primary product is a powder, so we have sold whole roasted, in-season crickets before, but that is rather polarizing as you probably guessed. So, the animals are—they're grown to maturity, and then basically put into a powder form that's really pretty benign. It's kind of an off-white color. It has no detectable aroma. It has a mild, kind of a, malty or nutty flavor. So, it's basically a light umami profile. And we've had a lot of sensory evaluation done on this so that we can, you know, demonstrate to, you know, other food companies who may be partners interested in using this as a protein supplement, you know, how it might play in their formulations.

But it's, you know, everything that Christine was talking about, and I know Janet thinks about as well, is the eating experience has to be there. Because while consumers are more and more conscious every day they're not going to, you know, take one for Mother Earth. They're just not going to do it. It has to be not just passable, but it ought to be delicious. And if you think about what we're trying to market, I think we have an even higher bar. It needs to be just scrumptious. And that's part of what we've got to figure out.

But it's a really inert powder formed ingredient that I think we can do anything with. But it's also about addressing the perception, you know, as, you know, you brought out. I mean, that is kind of the first place people's minds go, but there are examples of where this has been done, if you think about lobster or sushi in the United States. I think a more recent corollary that's noteworthy in our case that we've been paying a lot of attention to is collagen and what companies like Vital Proteins have done. If, you know, what collagen is and where it comes from, it's not the nicest thing to think about. But people can't get enough of it, and that company is just exploding and paving the way because of a, you know, a functional benefit that was already understood to be related to that type of protein.

And so, we think we have a lot of the same, I'd say, attributes that we can highlight, if not more. It's just... how do we deal with people's perceptions? And, you know, it's a marketing challenge, for sure, and that's what attracted me to it. But I couldn't find a more interesting puzzle to grab hold of. And, like I said, it's going to happen. You know, we are focusing on the Western human consumer. We could build a very powerful and profitable business—and are in the process of doing that—based purely on, let's say, the pet food channel, much less animal livestock feed.

So, there are lots of ways to apply this ingredient, and I would go so far as to call it a superfood. And, but it's—the path may not be self-evident, but we're getting there.

### **Meeta**

You know, I have a suggestion. Put some chili powder, garam masala—I'll help you make a paratha with it. No one will ever know.

**Jason**

I'm bringing a couple pounds over. You just tell me when to show up.

**Meeta**

Yes, absolutely. We'll have to taste it with all the Indian spices masking what it is and get people to do a taste test.

**Jason**

I love it, and your consulting fee, of course.

**Meeta**

Yes, there you go. I'll send you a check.

**Christine**

I'll just eat! [laughing]

**Meeta**

You can just eat! Yes, absolutely. We invite you to eat. You'll be the taste tester, you and Janet.

## [Safety standards in cricket farming, factory operations]

**Meeta**

You know, this conversation about the perception and all from a consumer standpoint is one part of it. What about your supply chain? What about the benefits potentially, as well? First of all, how do you maintain safety standards? But also, is there someone in the supply chain who stands to benefit from cricket farming?

**Jason**

Well, I think, certainly. You know, I think every stakeholder who touches our supply chain model—and really that whole value chain—stands to benefit. Especially if you work backwards from the consumer. You know, this is a farming model that produces, really, a protein plus. There's all sorts of other micronutrients: you get a lot of great fiber and omega-3s, in addition to just great quality and, I would say, complete protein, which is distinct from let's say a lot of the plant sources because it contains all nine essential aminos, which you really only get from animal protein. And it's also the only animal protein that has a healthy dose of fiber included, so. That's from the Exoskeleton that does go into the powder. So, it is kind of this, you know, snout-to-tail, whole animal.

There's a lot of, I think, neat aspects of this model to describe for folks, but... You know, the use of resources and, I guess, the output of let's say negative—I guess anything that would be

negative on the environment like greenhouse gases... You know, the metrics are actually pretty astounding when you compare to, let's say, a cow, you know, it takes 2,000 times more water to raise, you know, a commensurate amount of beef; and, you know, also by contrast, crickets produce about 1% of the associated greenhouse gases. And so, there's metrics like this that are important to understand. It's our job is to kind of dial that into a more cogent message, because you can't just hit consumers with an infographic, with a bunch of statistics on it. But certainly, anyone who cares about the environment, I would say, would be benefited by any of these three supply chains that I view as alternatives to traditional animal-based livestock.

But, you know, other partners in the supply chain... you know, we envision this as a model that's also deployable really anywhere in the world because it doesn't depend on a certain climate. It's very energy—not energy intense. And so, that was part of the ethos of the founding of the company, actually, is to help solve for, let's say, protein sovereignty. Especially in parts of the world where that's more of a problem than we experience day to day here in the states. You know, places like Africa. We even have a kind of a sister company that is deployed over there. But that's part of the vision, too, because you can stand one of these up anywhere. It's not super expensive to do, and modular and scalable in that way which we're proud of.

**Meeta**

And one would imagine that for small farmers and other workers in underdeveloped areas, this could also be a huge source of income.

**Jason**

It is. And, you know, there has been work done on really kind of a home kit, if you will. I think, you know, we're really trying to achieve all of the economies of scale commercial production, and we have a 150,000 square foot facility being built as we speak in Ontario. That will be the first true commercial facility, but we also want to, you know, as part of, you know, the social responsibility ethos of the company to, you know, help, you know, even individual families one day with perhaps a kit where... here's everything you need. It's modular. Put everything in, come back in a month, and you have a great protein source for a few weeks. That's part of what we're trying to achieve as well.

**Meeta**

Yes, absolutely. That would be really interesting, just from a world food supply point of view. We've had enough to serve the population for 50 years now, but it's being threatened. And that is an interesting alternative from that point of view.

Christine, what about your supply chain? I read that even during COVID you've managed to open a factory. Done really well with that. So, tell us a little bit about this, because one of the big stories around the pandemic has been the safety of meat workers, for instance, meat plant workers, and it's just sort of the opposite with you. You've had some great success in managing to open something on time and actually make it work.

**Christine**

Absolutely, you know, I would say, Meeta, that I am incredibly proud, you know, of the team having worked in very innovative and resourceful ways, you know, during this pandemic situation. Because it is true. I mean, you absolutely have to have the social distancing. You have to think of all of those different things that, you know, come to mind. What was even more interesting and challenging for us is—well, I should back up.

We did commission our plant facility, and it's a brand-new facility in Heath, Ohio which is right outside of Columbus. It's about a 42,000 square foot facility, and we make and pack Good Catch there. That opened in August, and we... because we have a national boundary constraint between Canada and the US, our innovation team—our entire technical and innovation team—is based in Vancouver. And because they were not able to travel to Columbus—or to Heath in order to commission the plant, you know, what you do? You've got 50 people now ready to go, you know, get all this equipment started up and produced, but you do need some technical services guidance, right, from the innovation team. So, what did we do? We put on the virtual glasses, and that was actually how we started up is that our innovation team woke up at three o'clock in the morning every day in Vancouver, worked with the technicians on the ground in Columbus, and actually could control some of the plant controls of the equipment. So, you know, it's a really remarkable way, you know, even though it is a technical startup, it was truly a technical startup, right, in real innovative ways.

All of our ingredients are non-GMO. You're right, it's plant-based. We have all of our suppliers, you know, are approved through like the food safety, the food quality, the allergen controls, all of these. And the suppliers are all GFSI, let's see, Global Food... Safety Initiative. [laughing] You know, we always remember the acronyms. GFSI either certified or are about to be certified. So, you know, we really do look at the full supply chain to be as natural and least processed as possible.

And your original question on food, uh, worker safety. I would say, you know, Meeta, it's a standard across any manufacturing facility. First and foremost, you want to make sure that your plant employees are safe, and then we abide by all the different guidelines where we call it the COVID playbook, right. I mean, there are very specific ways. Not only for behaviors within the plant, but anyone who comes into the plant that's not a day-to-day worker. So,

there needs to be all of these different safety guidelines that are closely, closely followed. No exceptions.

**Meeta**

Absolutely amazing that you've managed to get that going during this time.

## [Scaling lab-grown meat]

**Meeta**

Janet, what is it going to take—? I know we have a few in the—and you've started, you have your own startup for this lab-grown meat. We've got a few companies that are doing this. What is it going to take to scale? What are the big challenges you see?

**Janet**

So, there are several challenges ahead of us. I think one of the main things is taking out specific media components that are currently used to culture cells, in general. And that's actually using a serum from fetal bovine serum, actually. So, there are several companies who are dedicated to really find alternatives of how to take this component out of the way we culture cells—including cell-based meat.

Another challenge is, again, related to how we grow the cells is transitioning from specific small molecules and growth factors that are originally from human cells, and we really need to transition to bovine cells. So, these are the immediate challenges that are related to how we grow the cells and, from that, how we grow the meat.

The way I foresee the whole scale-up process once we figure out these specific problems—which I think are solvable, it's just a matter of time and money, as always—is, again, using a lot of robotic arms that are currently used in pharma basis. So, we—the vision that we have is that we'll use the same technologies to scale up their production.

And, from the supply chain perspective, I think having cell-based meat will kind of centralize all the different nodes that sell or meet production needs. You have the ranchers, you have the feed stocks, you have the distribution centers, and we're basically centralizing everything in one place. So, we're simplifying the supply chain.

But I feel like the problems that we're facing are, again, solvable. And I'm a great believer in collaborative work. It's not something that one entity could solve. And so, this is something we're working on, having collaborative efforts to solve these specific problems.

**Meeta**

Great. It seems like just something out of the future, but, certainly, that day is here. So many

are trying to solve this problem because there are many of us who won't give up meat. And that's one way to tackle the sustainability crisis.

## [Opportunities, barriers to increasing accessibility]

### **Meeta**

So, I just want each of you to say a little about the future. What are we going to need to do within your space to make the food more available, accessible? And so, you know, one was the taste, and we talked about consumer adoption. But we always start with our markets here. We have—at least in the Western world—a big market for it. And a big and growing market. But, ultimately, food sustainability will come about if you make all of this accessible. So, what—? Think about it both in terms of the opportunities you have to make it accessible, but also the barriers right now. And perhaps if, Christine, you want to go first?

### **Christine**

Sure, you know, one of the things about seafood is we are really paving new ground. There are not a lot of predecessors in front of us that have, you know, made open the market on this one. So, first of all, it's, for us, it's about engaging in the dialogue. And then creating that awareness. And then supporting that with accessibility. So, exactly what you said, Meeta. And so, for us, it's about daring to grow. And when we dare to grow, we have to be very strategic about... how do we become globally relevant and purposefully available?

We're still a startup, so we can't be everywhere, immediately, right. And now I have the power of this plant facility, now we can begin to turn the dial up, right, and begin to now produce more and more and more. But first we have to choose, you know, where we will be and then what we will put our innovation behind? So, when you talked about accessibility, a couple of things. If we just think about it at home, right—we have to think about, you know, what prevents consumers today from experiencing, say, the seafood alternative?

Well, first of all, is there anything out there? Are there anything that's good tasting that is out there and it's available? And so, we're beginning to now do that. We're in over 5,500 retailer doors around the world, and most of the banners that you would—might recognize today. But we're not national with everyone, we're starting, right, we're starting. We're starting that journey. And, you know, as we get out there with—we have three ambient SKUs. So, three pouch tuna products. And we also have three frozen SKUs. I mentioned the fish burger, the plant-based fish burger. Crab cakes and fish burgers.

We'll need to continue to innovate and continue to give consumers options, right. As you give consumers options then they can understand that plant-based seafood can manifest itself in many different ways. But each and every time, we have to surprise and delight the consumers,

right. So, we have to continue to build that innovation pipeline and continue to make it available in more and more doors. Next month we're going to be launching into Canada. We already have presence in the UK and building presence now in the Netherlands and in Spain and some other places across Europe. And we're in discussions with distributors in other parts of the world. We just signed one with South Africa.

But the key there is that the consumer palette is not the same everywhere in the world. So, we can make a base portfolio available so people can experience, but where we will have true success is that we're going to be able to customize and understand what the local consumers in each of the different geographic regions need. Like eating habits are different, recipes are different, all of these things are different, you know, every 200 kilometers or so. So, it's a combination, yes, of accessibility. And it's an understanding of a consumer's need and what they consume.

But then the third part is really around what prevents you, right. So, some people are saying, "Well, I can't find it at all," you know, "I don't even have a grocery store near me." So, we're also looking at partnering up with different—and experimenting with different—bodegas. So, we're actually doing a little pilot in one part of the US to say, okay, normally you wouldn't be able to access a plant-based seafood in this part of the city. So, we're gonna partner up with some bodegas and just understand... is there a market? And is it just really people understanding... and just getting it closer, you know, so, they can try it and then experience it. So, it comes back to your original comment there. It's about accessibility, but we have to be very creative on how and where we put our product.

**Meeta**

Yes, absolutely. That's fantastic, though, that you're already putting it down into places where you wouldn't expect typically. Used to be plant-based substitutes were a high-end food, and they still are perceived that way. And perhaps it makes sense as a strategy, initially, but eventually the goal is to have this available. So, I'm really surprised that you've already gone there.

**Christine**

Absolutely, I think that—and, you know, the more and more volume you can produce, the more you're able to positively impact your cost of goods.

**Meeta**

Yes.

**Christine**

Then you can begin then the whole process of year on year improving your costs.

**Meeta**

Costs, yes, and then prices. Yeah, absolutely.

[Global culinary references for the western market?]

**Meeta**

So, Jason, when you think about how to make this accessible, have you considered that there are some ways of preparing insect food in other parts of the world that would be interesting to consumers in the Western world, potentially?

**Jason**

Yeah, that's an insightful comment, for sure. You know, there's a couple of data points out there. One is that 80% of people around the globe are already doing this, and somehow referencing that here in the US market could, I guess, open people up a bit. But we've commissioned some data of our own. And one of the insights that we've teased out is that because the ingredient itself is already, let's say, pretty novel for folks and would require—depending on how it's positioned—you know, an adventurous step forward in their eating habits, you know, our thought is to actually go with more familiar formats. What you said, I definitely see the logic. But, you know, we've done a lot of proprietary work to try to get smart on what it's going to take to open up the US shopper to this.

And I think, you know—we're all in the food space. We remember about five years ago when we all started hearing about how we're going to be eating crickets, you know, breakfast, lunch, and dinner in a few short years. And it's like, you know, 2020 arrives and we're also not in flying cars yet. So, the projections were a bit off, but, you know, I think we can do a lot better in putting a cogent value proposition in front of the consumer. And I don't think we have to beat people over the head with a cricket sledgehammer, either.

And that's the way that, you know, I view a lot of the kind of 1.0 versions of companies who are hawking this ingredient as their differentiator. You know, we have the Exo brand under our wing, and I'm leading that. That's kind of an inherited play. And it makes a lot of sense on some levels and it actually our data shows that that, you know, a bar kind of positioned to the, let's say, the person who's really trying to stack up their grams of protein kind of that CrossFitter, outdoor enthusiast it makes a lot of sense. That consumer is in the, you know, the first tranche of folks you would expect to adopt something like this, but we think, in short, that we can put together, I think, a more broadly appealing—and maybe less cricket-forward format—in probably a different category.

I think, also, I really look for places in the store, those aisles that really need a kick in the ass, you know. Where there hasn't been a lot of innovation in a while. That's certainly what we



saw at the egg set a decade ago, and I think now all of those sets have been impacted for the better with, you know, pasture-raised is a thing now. I think we can do that in other parts of the store that will be more broadly appealing in, I think, actually familiar formats.

One of the things to round out an answer to your question is, you know, in stimulating availability—and that's certainly something we have to solve for—is the price. You know, we are vertically integrated. We produce the primary ingredient in the Exo bars, and, you know, in these other concepts that we're developing. But people think of the ingredient and assume that it ought to be cheap. We don't really have the halo effect of, let's say, early-stage plant-based options—that we're premium and everybody, I think, accepted that. At least those early adopters would.

You know, in a way, especially in a bar format you're competing with Whey protein and Soy and Pea protein. Like, good luck competing with those commodities that have scaled to that degree. At least anytime soon. But with the opening of our commercial facility, we are bringing the cost down orders of magnitude and we'll definitely be, I say, under the price point of some other better-for-you proteins—not really Whey or Soy, that'll take a while—but that's going to help our cause as well by, I guess, taking a little bit of the adventure out of it, in a sense, actually.

And getting, you know, the cost down so, that it's not such an investment up front. Because right now per pound, we're still pretty expensive. I know the lab-based options definitely relate to this. We hear about, you know, Impossible and Memphis Meats and those outfits who, you know, "It's down to three thousand dollars a pound!" It's like that's actually amazing progress. So, we just need a little more time. We're used to everything evolving so quickly in this industry, and I feel like things are actually moving at warp speed for the better. Especially as, you know, there's consumer demand for it. So, yeah, cost and format are very key for us.

**Meeta**

Yeah, that's brilliant. I'm telling you, those parathas [inaudible].

**Christine**

You're making me hungry, Meeta! [laughing]

**Meeta**

Before I ask my last question to Janet, I wanted to ask the audience to start putting your questions in chat if you have something to ask—in the Q&A, actually—so that we can line them up and have some time for other people's voices to be heard.

[Lab-grown meat: market fit and ethics]

**Meeta**

Janet, my last question is to you. How do you think about this whole space of lab-grown meat and its place in the sustainable future of foods? A sustainable—the future of sustainable foods, a sustainable future, as well [cough]. Partly, also, in terms of the ethics of it and where it might lead, since you are at the university—these are questions we eggheads tend to like to answer. I thought I might try to talk about it a little bit with you.

**Janet**

Sure. So, first of all, you know, one of the advantages of creating something from scratch, from its building block is that you can really control the quality. The quality of what you're doing, the quality of the process, and the quality of your end product. And so, in that way you have a lot of control of what you're making and what's your end product. So, yeah, I feel like this is a huge advantage. I think there's a lot of challenges ahead of us, but the end goal or the carrot at the end of the road is very attractive to really make our lives better and what we put in our body better. In different, various different aspects. So, healthier food. Maybe even controlling and having personalized based food. So, if somebody has high cholesterol, we can generate a brisket or beef that has low cholesterol in it. So, I feel like there's a lot of challenges, but there's so much opportunity, and this is why I'm so excited to be in this space.

And we're being very cautious specifically given my background in tissue engineering for medical application—that's the main focus of my lab. Now we're being very cautious about everything that we're doing and how we're doing it. And this is exactly one of the reasons why we're pushing on not using serum, bovine serum, in our cultural media. Not using human growth factors in in our systems.

**Meeta**

Great. Thank you for that answer, that was really thoughtful and so frank about a lot of issues around in this field. Well, you know, certainly, thank you for all these candid comments and thoughtful comments.

[How are you approaching market validation?]

**Meeta**

I have a question from the audience asking: how are you testing your products with customers and getting their feedback to validate your market? Does anybody want to take that?

**Christine**

Oh, I'm happy to start us off. You know, when we—I don't know whether or not the question is about customers or consumers, but I'm happy to talk about both.

From a consumer standpoint, obviously, we actually are out in the market now, and so, we have interactions with consumers about their taste experiences. And, you know, before the restrictions of event management under COVID, we had been out in all the different trade shows. And so, getting a lot of different feedback of having tastings out in the trade show. You know, doing consumer intercepts, talking to influencers about the feedback on the taste, the texture, and the nutrition. So, real time feedback.

You know, when we pair up with the food service customers who— we're doing that now—we will approach a food service customer and look at their menu. Again, it's all about customized taste. It's about understanding who is going to be consuming your product and who's going to be partnering with you. And so, when we visit our food service customer prospects, we actually have—and I said that we were culinary-based because we do have... our co-founders are chefs—and so, we do curate a very specified, customized menu based on what their approach to the market is, what their menu is.

And so, we'll create our... "If we were to have influence on your menu, this is what we would offer," right. And there is a tasting with those customers and then they give us feedback. And so, it's an iterative process. So, the short end, whether it's a consumer or a customer it's about real-time taste because you can't just imagine taste, you have to experience taste.

**Meeta**

Jason is that something you—would you agree that's pretty much the process?

**Jason**

That's right. There's no substitute for, you know, putting it in someone's, you know, mouth and then hearing what they have to say about it. And I would say that goes not just for—I think it's Christine, you were—there's a difference between, you know, these different types of, I guess, people in your value chain. In the grocery space, that usually is going to include, let's say, at least a regional buyer who is between you and that shelf space in a grocery model. And so, you know, winning their hearts and minds is key. And, you know, one of those we've been able to do that with so far with the Exo line is H-E-B. You know, we have a real tight relationship with one of the BDMs there who, their parlance for the buyer for that category.

And, you know, they've got to believe in it before you get to touch a consumer off of their shelf, and, you know, that's really the first stop so, it's... you know, also in addition to getting there—and I don't want to digress into like CPG 101—but it is about taste with everyone who, you know, is supporting it, but also, you know, helping them understand how that differentiates their shelf and is, you know, potentially.... what's the word all of the fancy CPG sales people use? Incrementality. You know, it's helpful if you can do that. Or at least tell them who to kick off. Yeah, did I check a box? But, you know, also the "why" in addition to great

taste, which is just table stakes for, you know, getting a valuable shelf spot on in a grocery aisle.

**Meeta**

Yeah.

[How is lab-grown meat balancing environment, health?]

**Meeta**

Janet, there's a question for you. How are you partnering with other expertise, especially nutrition, to get your product right and ensure it's appropriate for Medical Nutrition Therapy applications?

**Janet**

So, our first goal, which will be our first prototype, is to make beef jerky. And we're gonna hopefully do, once we get there, we hopefully gonna have like a tasting show. Actually [inaudible] from the innovation center already signed up to be one of the tasters and take a video of me tasting it while cooking it. So, that's on the horizon to do.

And then, really, the idea is to bring in food scientists and nutrition scientists as well to give us advice on taste and what are the nutritional values. And specifically, what we're thinking of... personalized based type of food is, how do we meet these challenges? So, the answer, in short, is yes. Yes, we are.

**Meeta**

Yeah, absolutely.

[Accessing the capital/talent needed to scale EXO]

**Meeta**

Yes, okay, let's see. Oh, Jason, another question for you. What's been your experience accessing capital given that you have high CapEx needs?

**Jason**

Could I get that one more time, Meeta? Sorry, I think my audio cut out.

What's been your experience accessing the capital and talent needed to launch Exo, which I assume has high CapEx needs? You just said—

**Jason**

No, yeah.

**Meeta**

[inaudible]

**Jason**

Sure, you know, there's not really a cheap sales channel anymore, I don't think, in food. So, whether it's grocery, or if you're trying to go D2C, or usually both—Amazon's in there—I guess, you know, the capital needed to build a brand is expensive. Certainly, the capital that has been needed in order to build up the intellectual property and, you know, know-how and technology capability has been enormously capital intensive. And, you know, this facility we're building up in Ontario right now... I hope the scope of the question, you know, dealt with kind of the back of the house as well as the front of the house... That's how I'm answering it. But, you know, when you're building a technology company that's doing something that hasn't been done before, it takes, you know, tens of millions of dollars. And so, I actually look at the CPG side as the easy part, in this case.

And I'm kind of humbled to be part of this team that, in my estimation, has done a lot of the heavy lifting. And also, you know, the fundraising and all of the, you know, cap table and equity concerns that go along with that. But, you know, I'll speak maybe more to the CPG side, because they did mention the Exo brand. Look, I think you can just figure things out. And if you truly have a product that there is demand for and gives consumers something new, you can, you know, you can still get out there and do some damage.

And I'm kind of talking about myself in the early years of Vital Farms, but one thing that I've learned is, as quickly as you can, you know, go get that talent who believes in what you're doing that also has a great deal of functional expertise in this industry, in this part of this industry. Get some of those heavy weights as quickly as you can and, you know, that may mean, you know, you really gotta work to come up with a comp package that that would attract some, you know, experienced talent, but it's really worth it. Especially on certain functions, like, let's say, sales. And make sure your accounting team knows how to set up your business the right way because, you know, you'll be further—a lot further down the field a lot sooner. But I just try to layer in the right heavy experience, even in a fractional way if I have to, to offset some of that cost because, yeah, good people are expensive. But unless you truly have a breakthrough product, it's really hard to get it out there without, you know, that expertise.

**Meeta**

Yeah, absolutely.

[Accessing the first niche consumers for EXO]

**Meeta**

I think you kind of answered some of the questions in the next questions, so, I—if you can give me a 60 second answer on how did you get the niche consumer to want to try these products when you first marketed the cricket protein bar?

**Jason**

Well, I actually wasn't around when the brand first launched, you know, we bought it after it had—but I can speak to that, I think.

You know, there wasn't a lot of fancy market research that was really expensive, there was just some kind of guerrilla work done just to try to understand—maybe even anecdotally—you know, who would be open to this? And obviously there's a sustainability element, but also kind of a, "Who's up for high protein?" And it's interesting that they focused kind of on that CrossFit-er, outdoor enthusiast, you know, protein seeker who appreciates the bar format. And, you know, connected with them when you could do events like Wodpalooza or, you know, the REI expo up in Colorado. But when we have had the money to actually put numbers around it with really great marketing help, it turns out they were exactly spot on. That was the right place to have started, so. But I would say they got there more on intuition and anecdotal evidence than commissioning some fancy marketing agency.

**Meeta**

Interesting.

[Christine, what are you learning about leadership?]

**Meeta**

Christine, I—even though we're very tight on time—I have to ask this question because it's an important question. "You embody an accomplished, do-it-all female executive. What are you learning right now in your new leadership role?" And I know that you must be learning a lot, but maybe one or two highlights?

**Christine**

You know, I think that migrating to the startup end, the entrepreneurial end, the mindset. I mean, I just want to build on what Jason was talking about is, you know, the DNA as someone who wants to come in and make a difference. Not only in just a startup, because we're not about a transactional startup, we're about creating social impact, right. So, we talked a lot about taste. We talked a lot about great product proposition. And those are all truly, truly incredibly important, but I want to kind of stack up one level higher.

You know, for me, personally, it's about having fun and it's about paying it forward. And when I talk about paying it forward, you know, I think about Gathered Foods—and with our brand Good Catch—it's about having this ability to raise consciousness to reduce harm and to also preserve environmental resources, you know, while we're still delivering a great culinary experience. So, it's about paying it forward on many different levels, the social impact part.

But it's also about connecting with individuals who have this passion to make a difference, and that's really what drives me. Is about—Jason talked earlier about, you know, getting the either the heavyweights—you know, those can make a functional difference—but it's about those folks that are willing to have that passion, that commitment to write that playbook. That's what's going to make a difference for all of us.

That, you know, whether it's Jason or Janet or myself and the individual, kind of, streams that we're trying to build—it's really about trying to make that difference. You know, reducing harm, making it sustainable, preserving just the environment. That commitment. And, for us, specifically at Good Catch, it's about the living ocean.

**Meeta**

Yes. Wow, you stole my last line, so that's a good place to end. Absolutely. Ultimately, it's about sustainability, social impact, accessibility, feeding the world's population in the most sustainable way to preserve our planet.

Jason, Janet, Christine, thank you so much for being with us today. This is a really informative session, both behind the scenes with what we see, as well as what the future is going to look like. Thank you.

**Christine**

Thank you so much!

**Meeta**

Thank you.

**Marissa**

And Meeta, thank you for moderating such an engaging session. Jason, Janet, Christine, I always learn so, much every time I get the chance to listen to you, and I want to thank you for being part of our Taste of Texas this year and sharing your insights with the Longhorn community. Really delightful and enriching discussion. Thank you again for your time, and Meeta for moderating. You guys have a great weekend. [overlapping goodbyes from the panel] Yeah, hook 'em!