

CASE STUDY: *HOW A “NEWTYPE” INNOVATION MODEL CAN REIMAGINE AGRICULTURE FOR ALL*

Wednesday, October 30, 2024 – 2:45–3:30 PM

Facilitator:

Han Chen – 2024 Top Agri-food Pioneer and Co-founder and Chief Executive Officer, ZeaKal

Matt Marshall Vice President, Sustainable Ag and Retail Strategy, Nutrien

Scott Raubenstine Vice President, Agricultural Services, Perdue AgriBusiness, LLC

Jim Schweigert President, Gro Alliance, LLC

Please welcome a Case Study: How a “Newtype” Innovation Model Can Reimagine Agriculture for All.

Facilitator

Han Chen

Well, this stage is much larger than I remember it from 2019, so this is great. Thank you, everyone, for coming this afternoon, especially so late in the day. So when the World Food Prize Foundation asked me to come back and speak, it was a dream come true. I thought it was going to be a once in a life opportunity the first time. Then when they asked me to talk about us specifically, I was kind of blown away.

And the concept was, ZeaKal over the past four years as a company is doing something truly special and remarkable in the world’s largest agricultural markets and crops, which is we’re actually trying to reimagine what the future of agriculture can look like.

So as a quick introduction of who we are, we’re a plant trace company, commercializing in technology that improves photosynthesis, and when we’re able to improve photosynthesis, we’re making crops more nutritious, more energy-dense, and more sustainable. Now this all sounds great, but about four years ago at the beginning of the pandemic, we realized that technology alone is not enough, that technology in a vacuum will never reach the hands of growers and ultimately the consumers that will benefit.

And I was really frustrated at that time; because here we were, cracking one of the cardinal codes of life, and the market just wasn’t responding, and I started thinking about every reason someone said that we could never go to the market, that the supply chain could never reorient itself, that farmers were going to keep growing commodity crops and this is going to be the way the world is. And I remember putting up 37 posted notes behind me of every reason why we couldn’t do it, and we just went on a journey to try to see if we could systemically understand all these challenges and whether they can be undone.

And through this journey, I would say that we’ve made some amazing friends and we came through some amazing partnerships. And so again thank you to the Foundation for giving us a chance to share our story and journey over the past four years.

Han And I really wanted to introduce our fellow panelists who really make up the story of who ZeaKal is today. So let’s just go down the row, and I’ll start with you, Jim.

- Jim Great, thanks Han. My name is Jim Schweigert. I'm president of Gro Alliance. We're a three-generation-old seed supply chain solutions company, and so we provide services to seed companies around the world in seed production, contract reading services, and we also outlicense corn and soybean germplasm. And we like to kind of think of ourselves as a three-generation-old startup company because we're always looking for ways to innovate and differentiate in a pretty challenging and complex market. Especially when you think about family-owned businesses in the seed industry today, there's fewer and fewer of those all the time. And so those that find new opportunities that help support innovation and can help bring those to market, are the ones that are going to make it into the long term. So we're excited to be part of this partnership and excited to be here as well.
- Han OK, Matt.
- Matt Yeah, thanks, Han. First of all, it's a pleasure to be here. Thank you to Han and the ZeaKal team for getting us up here on stage. So my name is Matt Marshall. I'm the VP of Sustainability and Strategy for Nutrien Ag Solutions, which is a downstream ag inputs retail business of Nutrien. If you're not familiar with Nutrien, Nutrien's the largest ag inputs producer and distributor. We have a very large upstream fertilizer manufacturing footprint across nitrogen, potash and phosphate fertilizers where we produce and sell about 26 million tons of fertilizers a year. Downstream, the way to think about that business is we're basically providing everything that a farmer needs to grow their crop. So we're providing fertilizer, crop protection products, seed. We also have your own proprietary line of biostimulants and specialty nutrition products, as well as a proprietary seed business as well.
- We wrap around that input offering an agronomic service offering and the ability to provide insights and advice to our farmer customers, really with the goal of trying to get the most out of their input investments and also have a large financing arm of the business as well, of which we're financing our farmers' input purchases and helping them optimize their working capital across the season. We're obviously a conduit to the farmer. We view ourselves as a channel for technologies and products that really help maximize the outcomes on the farm. And ZeaKal is one of the examples of one of those technologies that we see opportunity and really play an important role in how that product lands in the market and successful performance of that for our customers.
- Han And last but not least, Scott.
- Scott Great, thank you very much, and thanks to the World Food Prize for inviting us here to the stage. My name is Scott Raubenstine. I'm vice president of Agricultural Services at Perdue AgriBusiness, and Perdue AgriBusiness is part of Perdue Farms, and we also have a Perdue Foods business, and we produce fresh poultry here in the United States. And my job role is to work with farmers and connect farmers with consumers and CPG companies. And so I have a really unique role in the aspect that I get to look at new technologies like ZeaKal, look at carbon interventions across our value chain – where can we lower our carbon footprint and deliver what our consumers and our customers are asking for, and that is safe, nutritious, secure food. And really excited to be here, and thank you for having us.
- Han Wonderful. Maybe to start off the panel, if we were to kind of rewind back to our history, if you can remember how we kind of all fell in love with each other. Maybe I'll start with Jim. You know, Jim, you were the first of the partnerships that we assembled. What did you see? Like what really brought you to the table? And you mentioned, you know, a third-generation seed producer across corn and soybeans. You've worked with all the

majors in the world. What was that something that was different that made you want to commit to this and believe it?

Jim Yeah, it was really exciting the first time that I met Han and got to hear the ZeaKal story because we have this long family history. So we've seen agriculture change and evolve in the United States and around the world. And go back to a quote that I heard a number of years ago – and I used to believe it, but I don't believe this anymore. It said that farmers are the world's best economists because they'll just grow whatever they get paid the most for. And that's true as long as they have the opportunity and the market to grow kind of anything. But when you think about the evolution of commodity agriculture, it's really kind of consolidated down to just a few crops. And that limits the farmer's options.

And then there's significant capital that's invested to farm those crops. So the ability of a grower to switch is not as easy as it used to be. And when you have that type of system, it tends to lead to consolidation, lower margins; and essentially you have farmers that are producing an output that's equivalent to their neighbors, equivalent to farmers around the world. It tends to leave to just lower price wins.

And so we've seen that since the 1940s when our company was founded. And that just hasn't been good for independent seed companies, for a lot of smaller growers in the United States. And we've seen those trends over the last few years continue to accelerate.

So when I got to learn about this where actually we can produce a product with characteristics that are beneficial, that are differentiated, that give growers an opportunity to earn a bigger premium and be part of a supply chain, not just a customer of it, we were really excited and proud to participate.

Han And, Jim, you mentioned a customer of the supply chain. That's really interesting, because the way the seed is sold today that supply chain is really from the genetics to the farm, right?

Jim Yep.

Han The point of monetization is really thinking about what a grower can afford to pay for seed. But this is rethinking where that seed ends up. So maybe, Scott, I'll come to you now. Why is that better seed so important to Perdue because you guys are not a seed company, but you are probably the recipient that has to bring that seed ultimately to the products that we as consumers enjoy? So what's really driving Perdue to want to now kind of put their that into the seed arena in order to drive your business?

Scott That's a great question, Han, and it's really revolving around a high, nutrient-dense grain that can really change poultry feed formulation and provide a more nutritious, better-tasting chicken at the end of the day. And we really realize the fact that, through a sustainable, high-nutrient grain, we're providing a better nutrition for that chicken; it's healthier. And we in turn feel that it's going to be more nutritious to that consumer. So we have an interest in being able to connect that grower through a value-added opportunity, and connect that consumer that's looking for that safe, healthy food at the end of the day. And we want to make sure chicken tastes like chicken, right?

Han Yup.

Scott And my grandma used to say, "You are what you eat. Right?" And we really feel that better grains will lead to a better, more nutritious chicken, and we're out to prove that as well.

Han Yep. And then of course, after we were able to prove our ability to produce our own seed and create a market for that grower, the second missing piece or third missing piece was – well, how do we actually get product into the hands of farmers because as good as ZeaKal can be in the lab, when it actually comes to moving seed around the district or the country, we really need a lot of health, because at the end of the day you can't grow technology. You're putting seed in the ground and you're protecting that yield. So we were very fortunate to bring in one of our longtime investors, Nutrien, now in a different way with the distribution partnership.

Matt, can you tell us a little bit from a distribution standpoint. You control the lifeblood of how ag products flow. Obviously, you get to see the volume move, and you're already very successful with all of these, but why do something different? Why add that kind of complexity and risk to a volume-based business because I think that's the part people find unbelievable?

Matt Yeah, thanks, Han. So as I mentioned earlier, the nature of our business is unique in that we have a whole host of different capabilities to pull through different technologies towards the customer. We are actively in the market of sustainability today where we're recognizing the opportunities that we have to actually enact on the... changes that actually create attributes that have downstream value. You know, whether we're looking at carbon intensity or creating a unit of environmental attribute in which we can create an opportunity for incremental value creation – that's something that we're actively doing today – there's several elements that feed into our ability to do that and the growth and the ability to scale behind that.

But when you look at the really nuts and bolts of our business and the fact that we have a very high-touch business model where we're in the field with farmers every single day. We have a network of over 4,000 crop consultants that are working with our customers day in, day out across the season. We have a business model that's very amenable to pulling through a variety of different technologies. That can be technologies from our major suppliers, you know, the seed and major ag chemistry companies. Those can be technologies that we originate ourselves, which we do make investments on a portfolio of products that we've developed and originate ourselves and pull through our own channel.

And then of course looking to innovative new technologies in the startup world as well, where the ZeaKal technology and the photoseed technology would fit as well. And just recognizing that we have an important role to play in pulling through those technologies and also feeding into the demand signals that we're seeing downstream, whether it's around nutrition, whether it's around carbon intensity, as a means of evolving our own product offering capabilities and ensuring that we're not standing still and expecting that traditional inputs will just continue to fly off the shelf in volume and recognizing we need to be nimble on that front and be responsive to those demand signals.

Han Matt, you mentioned demand signals, and that's really interesting because ultimately all of us supply chain players, whether we're creating the seed, the genetics, the infrastructure to process that grain, we're really doing one thing, which is we're connecting growers with consumers ultimately. There's been criticism of agriculture that, because our supply chains are very large, we're very horizontally consolidated when in some ways we're very vertically fractured, you know, what should be partnership sometimes ends up being competitors or antagonists. But really it's repairing that fracture, harmonizing that supply chain that really matters. What are some of the trends

that you're seeing that's really fostering that, that's really transforming modern agriculture? What are we doing to really bring that consumer and that grower together? And are we successful at it so far?

Matt Who's that for?

Han Well, I was going to try for all of you. So whoever wants to take that one first.

Jim I was able to sit in for Jackie Joyner-Kersey and Chancellor Robert Jones from the University of Illinois, and one of the comments that Chancellor Jones was — To build that system, you have to have trust and mutuality. And that really struck me, because that's the thing that's so unique about this partnership is you have the entire supply chain sitting down at the table together, going over the model and then understanding how we can all participate in it and all benefit for it, including the grower who's not on stage tonight but is really well represented in the concepts of the NewType model and how this is all built.

And you're right, Han, like too often it's individual players looking to get their own piece. And if some of what they're doing happens to benefit somebody else down the road, that's good too. But here you have the whole chain from innovation all the way through delivery to the farm, the offtake to feed, to oil. It's all together and all working together, communicating and doing it collaboratively. And that's what's really exciting, because it's a model that I think can be used in potentially other commodities or crops. But it is one that takes that trust and mutuality to be successful.

Scott And as we take a look at the transparency that you were talking about too, we're inviting each other's supply chains to come together in this NewType model to provide that full traceability and transparency we need from seed to consumer. That's what our consumers are asking for. Tell me how that crop was grown. Tell me the impact it had on the environment? And by pulling this unique type model together, we are opening our supply chains and working together to lower our footprint; provide a higher, more nutritious grain; and better-tasting more nutrient, safe food for our consumer. And that's the exciting part of the NewType model.

Matt Yeah, and I think if we look at the nature of Nutrien's business today, just the way that we're configured. We naturally take kind of a value chain perspective to our own business. You know, we've got a large, integrated fertilizer production footprint, we're mining potash on the ground, we're producing nitrogen from natural gas, and we're following that product all the way to the farm field and supporting it along the way.

That same type of mindset, as we kind of look past the farmgate, has great applicability as we think about — how do we connect the nodes in the value chain more efficiently and really configuration our business in a way that meets the needs of the end consumer. That is one area that, through collaboration and partnership, that's absolutely critical for us to be able to gain those insights and those understandings and also be able to connect into those value pools. You know, as Scott said, at the end of the day there's an understanding or an expectation that there's going to be differentiated market value and value that, as Jim said, the farmer can participate in, and probably disproportionately so, but also makes good business sense for the folks up on stage here to kind of connect those nodes in the way that we have.

And so I think it's obviously very exciting, the model that we've built here and the fact that we've got really the full value chain represented and again the opportunity to build momentum behind that.

Han And is that definition of the consumer also changing about who our end customers are? Like I've been thinking a lot about—you know, the consumer's not just the person that wants to buy the most delicious chicken breast at the supermarket. It's now also your CPGs are trying to reduce their Scope 3 emissions. It's energy now. I mean we can't be talking about agriculture today and not talk about energy and the role that agriculture has for decarbonization. We also can't take away the fact that like our global supply chains are changing, especially for our major commodities. That can be due to geopolitics; that can be due to trade flow.

But as we think about the consumer or the end-user in terms of this complexity, it's not just the individual but it's entire industries at a time, what are the drivers that excite you or scare you the most with how we need to reorient and the role of technology in that reorientation? Jim?

Jim Yeah, for me it kind of goes back to the commodity model versus a specialized model; because even those big energy customers, they're looking for the cheapest source of energy they can find, and whichever crop that happens to come from, whichever country that happens to come from, that's where they're going to shift their focus and their buying activity.

And you mentioned geopolitics. It's important to be a low-cost producer as a commodity-driven country, which the U.S. primarily is in corn and soy. But now we're seeing new alignments where, because a country might be more friendly with another, they're willing to pay a little premium to buy from the people they want to buy from. And that's a new dynamic that's I think going to be a bigger piece of commodity agriculture in the future. And you can see them building kind of unique like link supply chains with themselves. And if the U.S. isn't part of all those supply chains, that's a risk for our farmers.

And so getting away from everything being fungible to things being more specific and more differentiated, I think, is a real opportunity.

Han What are your thoughts?

Matt I think if we reflect on some of the work that we have in flight around sustainability today, it has been a bit of a challenging area to operate in. I think there's been a lot of different strategies and approaches that have been introduced into the market, creating confusion. And also the expectation that there is a value proposition that our farmers and our customers, in the case of Nutrien, can get their heads wrapped around.

So for us the value equation of this continues to be really paramount for us to be able to get the adoption and get the momentum behind initiatives like the opportunity with ZeaKal and other technologies and really be able to demonstrate that this value is real and it's scalable and something that the industry can start rallying behind.

I think the nature of sustainability today, is it's a largely voluntary—based market; and you're seeing as a result a lot of disparate strategies that make it really difficult to scale and gain cost efficiencies. And for a business like Nutrien, although there are those opportunities for those kind of smaller market, differentiated market opportunities, for us to really put our full weight behind certain opportunities, we really need to be in a position to help scale that as well. So the value kind of part of the equation here is absolutely critical and something that, frankly, as we look in the immediate term here, it has been a little bit slow to develop, frankly, which has hindered some of the progress and some of the potential.

Han Yeah. Scott?

Scott At Perdue we're listening to our CPG customers. We provide them oil and chicken, and they want to understand too that our Scope 3 is their Scope 3, so we're working on that inseting approach. And we're inviting them to co-invest in our supply chain and the carbon interventions that we're driving forward.

We're working on a product carbon footprint across our entire value chain, and we found that 70% of our Scope 3 is coming from grain through the feed production. So having a higher, more-nutrient grain, sustainably produced, that adds value across the entire processing chain, really helps lower that Scope 3 impact and create a more nutritious grain that we can then in turn make a healthier chicken.

So we're excited to provide support and share those Scope 3, that data, transparently across the value chain, all the way from seed to fork.

Han So I actually heard that one of the enemies, which you and I actually suspect, to this inertia that's building up is scale. Because I mean companies like Perdue, like Nutrien and others, you guys are feeding the world already; and you guys are already delivering on a massive amount of product that keeps us moving seamlessly. And that machine is really, really hard to turn off or turn a different direction.

And I think when we sit from the startup side, there's always that question of – well, what does that ecosystem look like? You know, do we partner? Do we have to create a totally different supply chain? Are we disrupting, or are we feeding into it? And I guess our approach has always been the harmonization – how can we take our existing businesses and, through culture and will, reorient them? Do you think that scale in efficiencies and yet nimbleness can exist at the same time? Or is that just an oxymoron? As you think about your operations, about how we adopt that, you know, just brutal efficiency of operations into something that's also reactive to the needs of consumers and growers, what are your challenges, and what are some of the solutions for that?

Matt I think from a Nutrien standpoint, you're right – I think scale is critically important. I think we need to be focused in kind of needle-moving undertakings that over time have the potential to really make change. And so that's one of the advantages we have, just given the scale of our business and the expansive network that we have in access to the customer. I think when we look around the ambition and all the focus on the crop attributes that are creating when there's building demand behind, a lot of that is centered around what's happening on that acre.

Han Yeah.

Matt And so for us that makes us excited, because it leans on the core competencies and capabilities that we have as a business already, which is very exciting. I think in terms of some of the challenges, the word that comes to mind is "consistency," you know, consistency of technology. As you know, Han, the adoption curve on technology is quite long-tailed; and to see a technology that actually creates the outcomes the market is demanding is important. We don't want to be kind of introducing new offerings year in and year out and confusing the farmer.

The next is consistency of the value proposition – right? – and seeing the incremental value today. Today Perdue's paying a value for high oleic oil; in the future, and Scott you can elaborate on this, but maybe protein and CI may be part of that equation. And that's exciting, but that value needs to persist to really kind of continue to build momentum

behind this and drive the changes that we're hoping to see through introduction of technologies like ZeaKal's.

And then lastly it's consistency of measurement. I think the tools, the methods of quantification, the ability to audit and verify the outcomes. And for organizations like Nutrien or Perdue or others, to credibly stand behind those outcomes in the market in which there's greater scrutiny on those claims, I think, is absolutely critical as well. So again that word *consistency*, I think is really important and something that, if we're not careful, could be a potential barrier as well.

Jim I like that, because from the grower's standpoint, that's another benefit of having the whole supply chain together, united about it. They know there's an offtake partner in Perdue that's been very strongly supporting this. So the farmers know this isn't a fly-by-night, this isn't a one-year deal or a two-year deal; and they make switches to their operation, you know, the product's off the shelf, because that's happened before.

Seed innovations that have come into the marketplace too quickly without a plan for what you're going to do next or how you're going to manage it through the whole change; and growers may adopt very quickly, but then that product goes away. In this case, the grower doesn't have to worry about that, because we're all at the table, building that long-term demand so that they can make those changes to their operation, and know they're going to get rewarded little.

Han So one of the questions here then that's coming out of this is – we're just starting out. This is a vision and a blueprint of what we think agriculture could look like, but everyone on this panel has mentioned that we're now all accountable for how we produce and what we produce. Given that the demand for accountability is now on all of us, that the supply chain can no longer be anonymous, that these breaks can't occur where one group just goes back to business as usual and leaves their partners hanging.

Do we see this as, maybe not this technology or this relationship necessarily, but do we see this as the broader trend of where agriculture needs to go, or will this continue to be a niche product? Because I think that is the skepticism in agriculture, really, is we've heard a lot of promises on technology. We've heard a lot of promises on collaboration. But agriculture is difficult, agriculture is long, it is challenging. That will to continue to have that diligence in order to follow through on this, has led to a lot of skepticism. And at best, you know, maybe it's a niche product.

But what I'm hearing is that these factors, these strives are all too important to just be for a certain subsection of agriculture – that we have to be more sustainable, we have to be more nutritious. We not only have to address food insecurity issues, but now we're addressing energy insecurity or decarbonization of both industries. Is this going to become the new standard? And what's it going to take to get to that scale? Are we going to look at this five years from now and just say – actually, this was the genesis of something new, which will be the next version of modern agriculture – or we'll just kind of just revert back to what it was for the past 30 years?

Jim It's a great question. I mean it's one that we think about quite a bit, just because we have third-party relationships with well over a hundred seed companies, breeders and universities around the world. And they're all trying to figure out, like, what does this market look like these next 10, 20 years? We have been in a period where there was significant acre demand from commodity products, significant global demand with a lot of forecasts for that to just continue to rise almost in perpetuity as population expanded and grew. And we're seeing some of those trends slow down, and we're seeing the

commodity cycle be a little bit challenged, especially in the U.S. And the cost of innovation is a lot higher than it's ever been, especially with trying to deregulate something globally, you know, if it's a GMO trait.

So when you have increased cost for bringing innovation to marketplace, and you have a lower opportunity cost for the farmer who's planting those products, you start to run into this funnel really, really quickly. And I feel like we're kind of in the outside rings of that funnel today. Just quick math from last year, you have about a dollar a bushel lower on the commodity price of corn in the U.S., and the average corn yield is 180... 3.8, I think is the latest update, \$183 less per acre for a cash grain farmer. That doesn't support a lot of new innovation that's really expensive. And so you have to find ways to generate more revenue per acre to afford that innovation or innovate in a different way. So I think the real broad pieces are kind of pushing this funnel to where I see this as a key model for the future.

Scott Our CEO, Kevin McAdams, is really changing the culture of Perdue and moving towards raising a better future for our customers, our growers, our associates and our animals. And we all have a part in climate action. We all can do something. We know we're up against a big hurdle here. And I think it has to change. And I think we have to be responsible stewards of these natural resources—find new ways to bring innovation and technology to market faster. And I think by opening up these supply chains and being transparent and working together, we can leverage expertise across multiple supply chains and deliver that safe, more nutritious, better-tasting product at the end of the day. And so we're excited to be here as well, so.

Matt Yeah, I mean I think there's an element here that, you know, seeing is believing. And being able to prove to the market that collaboration like this and others actually can yield a value proposition that makes sense for each of our organizations and principally for the grower. And then we can actually kind of do this at some sort of scale that's needle-moving. So we're certainly motivated to continue to go down the path of collaborations and partnerships like this. But that is one of the kind of key tenets of our sustainability strategy today is that value chain collaboration and connectivity. In the absence of that, it's very difficult to see a future in which there is really any significant change that's on the horizon.

Even if I reflect on our business again, as I mentioned, we have a large, upstream fertilizer manufacturing business. We actually produce low-carbon nitrogen today, so it's carbon capture, it's lower carbon intensity than conventionally-produced nitrogen. We're trying to build demand for that product base today and quite a bit of a differentiated market opportunity. Imagine if we were able to connect that upstream to what happens on the acre and looking at technologies like ZeaKal or products to improve nitrogen use efficiency. And even opportunities for emission improvements even further downstream as we look at the feed, animal feed and energy side of the equation.

So it's easy to get excited about how these different nodes and the different improvements that we see across the value chain can connect together. But facilitating those connections and openness and the transparency required to be able to kind of make those connections, I think, is super important.

So again, it feels like we're starting small, but it's representative of what I think is going to be really important to driving material change.

Han Well, again I think we're extremely proud of us being able to bring things together over the past few years in kind of an unprecedented way with this new business model. And

kind of what we've always outlined is that we're trying to provide coverage from the genetics to the seed to the field to the market so that the grower is having that kind of support, that trusted brand, that trusted agronomist, that trusted end user at every stage.

There are still people missing, though, from the supply chain. I keep saying we've completed the supply chain, but we really haven't because there's always more and more people. And I can't help but realize that one of the biggest groups that probably should be here to talk about growth, predictability, stability is policy. We think about the risk of agriculture from a global standpoint – changes in trade, changes in regulatory – how that can affect innovation timelines. Going back to energy again, energy is a market that's being created and driven by policy today. What do we think? If we were to say that the supply chain needs to be completed with policy – that industry, technology and government are all working together – what do you guys see as the strengths and possibly challenges that policy would need to address if we're trying to become more sustainable and reactive to these needs and these policies are being created?

Jim Yeah, it's a great question, and it's one of the things we see with every startup innovator in the seed space that we work with. The science is really moving very quickly, and the regulatory bodies aren't moving that fast, and so if you think about having to. If it's a GMO trade or something that might need input approval in different countries, you may spend up to a hundred million dollars or more to get that deregulated globally, if you have to do it in every country of export. And so that stifles a lot of early innovation because they just can't. One, maybe they don't have that kind of seed money, they don't have the time it takes, they don't have a team around the world to do that.

So what we're finding now is a lot more companies looking at closed-loop and smaller markets to start to prove the concept. This is a closed-loop market too, so it doesn't need global deregulatory status. And those products, I think, have a lot of exciting futures in front of them. Building for a specific niche, finding geography that you can collaborate with other supply chain partners, build that closed-loop system, go through the U.S. process and get a product innovated and started, and then you've got a lot better chance to scale after that.

Scott I think one of the other important areas too is to really be laser-focused on our farmers, right? We've got to reduce risk, we've got to make sure they're rewarded for the risk that they're taking. We've got to make it easier to collect the data that we need to shear up a supply chain and ensure that there is accurate MMR feed reporting, etc., there behind our climate action.

So I think making sure that investment in supporting that farmer is going to be super critical moving forward in this market. And there are opportunities coming. You had mentioned, even value added for food, but energy markets are coming. So I think there's a real opportunity there, but we want to make sure we report that farmer.

Matt And just to echo what Scott said, it would be my response to that as well, if you wanted to add a fifth chair up here, you probably want a farmer as well.

Han Yup.

Matt But as Jim said, we're well represented, but nonetheless, really understanding kind of the dynamics from a farmer perspective, both in terms of risk, the operational complexities, and then the economic side of that equation, and so ensuring that the kind of at the forefront of the thinking here is going to be important.

As relates to policy, I think one of the important elements is ensuring that policy's inclusive. When we look to different tax incentives or other frameworks that are out in the market today or potentially emerging, we need to understand how various supply chain or value chain partners can participate in that. And principally, the kind of distributed value of those opportunities makes its way back to the farmer.

I also still think there's opportunity for advocacy in highlighting the openness and willingness of the supply shed to collaborate and how we're positioning ourselves around emerging value pools that are driven from policy and to really highlight the fact that it's helping drive more of that connectivity that's ultimately going to drive change.

Han Well, I know we're getting kind of close to the end. And again this was really an opportunity for us to tell our story but to tell it to the voices of our partners that have really made this happen. And we really wanted our little part of the world and what we're working on to hopefully be reflective of greater trends and kind of greater missions to make agriculture more sustainable, more reactive, and more resilient, given the complexities and the needs of the world on the horizon.

I know the World Food Prize is looking for a call to action. As great as it is for us to share ideas, it's, you know – what are we committing to, and what are we able to do? And so maybe just for everyone here, I'd just love to get 30 seconds from each of you on, you know, like when you wake up on this mission-driven career and life, what are things that you want to see happen? What are things that are within your power to deliver as leaders of agriculture?

Jim That's a great question. From my perspective, it's really... You know, we've been able to enjoy a three-generation family business, and we went from two acres of hybrid seed corn production in 1941 to five locations in the U.S., a new one we're opening in California in November, and a location in Chile. And we're working in everything from vegetables, rural crops, oil seeds.

And so we've done that by looking for ways to be different, to diversify the business, which is a little bit counter of like where agriculture has gone in general in the U.S. Everything, a lot of things have been commoditized, bigger, bigger, kind of a race to the lowest cost producer. So what gets me excited is building the opportunity for more premium for growers. Growers can control their own destiny. They have more optionality with what they're doing on their farm. And this idea that they're part of the supply chain, not just a customer. Because too often innovation comes at the market, and the first question is – What do we think we can charge? Or, what's the value for it? How much can we extract out of the farmer to pay for this innovation? And that's the wrong way to think about it.

The question here is, and should always be – what value is created and what's the best way to share it so it's sustainable for the long term. That's what gets me excited every day.

Matt Nutrien's purpose is feeding the future, and so we don't take lightly the role that we play in terms of producing and distributing the critical crop inputs that farmers need to grow their crop, both in North America but globally. I think traditionally we've been centered in around kind of everything kind of from the farmgate back up in the value chain. And the opportunities around sustainability and some of the attributes that the sector is now shifting towards has really opened our eyes to look further downstream and understand what's driving that demand and the important role that Nutrien can play in helping deliver that.

So again, very excited about what this represents and certainly hope that it continues to gain momentum.

Scott And, the thing that moves, I believe, is just working with others and helping educate our younger farmers that are coming, and our kids, and ensuring that they have a future to look forward to – right? – making sure that we leave the resources that we have here the same way we found it. Right? And so I get concerned about that. That’s what keeps me up at night. But I know that the more I interact with others, the more that I care for my neighbor, the more that I can do to help impact to lower the footprint that I’m creating here, I think is the exciting part.

So just to continue and educate and share knowledge across countries, through universities and be open and honest, and I think is the exciting part at the end of the day. We all have a role here.

Han Well, thank you, everyone, for making the trip out. Thank you for, again, being able to tell the story together. It’s much, much better with all of the diverse, great voices at the table. I hope you all enjoyed it. Again, thank you for the World Food Prize Foundation for bringing us.