

2014 BORLAUG DIALOGUE

October 15, 2014 - 4:15 p.m.

Panel: *Dr. David Strelneck, Moderator*

Introduction:

Ambassador Kenneth M. Quinn

President - World Food Prize Foundation

All right, so continuing now, we've had the general overview with the Borlaug Report, and now we're going to get to the gaps in specific areas. And the first one, such a terribly important one, the nutrition gap, if there is one. And to lead this, David Strelneck is here from work with Ashoka. He also was very involved with us in our 40 Chances Fellows Program. And so over to you... Now, one thing I have to note – Bram Govaerts is here. He's worried because he is scheduled to receive the Norman Borlaug Award for Field Research and Application right after this. But don't worry – I won't give the money away to anybody else. We'll wait for you for the ceremony at the Hall of Laureates, and everybody's invited to come over and join in cheering him on. David, over to you.

PANEL:

THE NUTRITION GAP

Panel Moderator:

David Strelneck

Senior Advisor, Environment, Nutrient Value Chain, Social Entrepreneurship

Panel Members:

Navyn Salem	Founder and Executive Director, Edesia Inc.
Katherine Pickus	Divisional Vice President, Global Citizenship and Policy, Abbott Vice President, Abbott Fund
Dr. Bram Govaerts	2014 Borlaug Field Award Winner, Associate Director of the Global Conservation Agriculture Program, CIMMYT
Tom Leech	Senior Vice President of Global Food and Consumables Sourcing, Walmart U.S.

David Strelneck

Thank you, Ken, and thank you, everybody. It's a real honor to be sitting in this chair, given the other folks who've sat in it today and in previous years. I'm going to quote some of the previous speakers, and the first quote I'm going to use is that I too shall curtail my own comments in the spirit of time today. The five of us just met in the hallway for the first time and agreed that, as we approach the dinner hour and the cocktail hour, we just want to focus and offer some thoughts and some ideas and not go too deep with them.

The topic is "The Nutrition Gap." The question on the table is – How does nutrition relate to all the other topics we've been talking about today – hunger, soil, climate change, technology, finance, disease, etc. – and how does it do so in a very fast-changing 21st century in a world unlike any we've ever known before, where change is happening at an accelerating pace in multiple directions at the same time, including nine-plus billion people. What does nutrition have to do with all this?

In order to curtail the comments, as I said, what I'm going to do is quote a few people from earlier. I'm just going to rattle through some ideas that have come up that set the stage wonderfully so we don't have to repeat these things, in no particular order.

What is invisibility and hidden hunger? How do we give rural people the resources and the tools and a sense of agency so that they can lift themselves out of poverty? There's no amount of science and technology that will achieve our goals if the social needs of the communities aren't addressed. Nutrition begins on the farm. Invest in rural youth. There's a massive youth bulge happening. We need data on human nutrition. We don't understand it.

In preparation for the November FAO conference in Rome, I read recently from IFPRI that 81 countries are not able to produce just the basic statistics on the whole spectrum of nutritional questions that they had hoped to gather prior to that major international event – because the data doesn't exist.

Technology will help people choose foods that are more nutritious. We need to bring in new voices, be proactive. It's almost a given that we need to focus on value chains. We must address health. Make money, save money or save time – how else are you going to achieve behavioral change, etc.

Thank you, all previous speakers, for those points and those ideas. That sets the stage, from my perspective, on what we're discussing.

Let me tip my hand at the outset in saying that when you understand nutrition and nourishment as an outcome, not as a set of inputs or ingredients in a process but as the result, then nutrition is paramount. And it's paramount, from my perspective, both as a primary goal but also as perhaps, to me, the most powerful integrating mechanism we have for achieving all of the other goals we've listed – in hunger, in soil, in water, and resilience to climate issues, etc. So that's my introduction curtailed.

What we have today is five practitioners, so you're also not going to hear it from a government, multilateral or think-tank representative. You're going to hear from five different industries,

each of whom think about and address and source and deliver nutrition to people in different ways. And so I appreciate Ambassador Quinn assembling this panel with the diversity that it has. You're going to hear that diversity of perspectives. We don't know if we're going to end up saying similar or different things. You can help us draw that conclusion.

We have Kathy Pickus of the health and pharmaceuticals company, Abbott. We have Navyn Salem, the founder of Edesia, which manufactures and now supplies over 600 metric tons of food and nutritional supplements, like Plumpy'Nut, for example, targeted at alleviating various forms of malnutrition, all for children under the age of five, if I'm correct – right? We have Tom Leech from Walmart. Tom is the Senior Vice President of Global Food and Consumable Sourcing. And we have Bram Govaerts, as you just heard, a very special guest at this year's Borlaug Dialogue. And Bram works on innovations across agricultural value chains that support the development of high and sustainable yield maize and wheat production in the context of environmental gains as well.

And you have me. I come from a group called Ashoka. Ashoka is the world's oldest and largest association of system-changing social entrepreneurs. We can talk more about that later. We work in 72 countries. We have a network of around 3,000 social entrepreneurs who have changed systems in society in one way or another.

And all we're going to do is each give an opening shot. We're going to talk through a couple of questions together. If we still have time and energy, we want to hear you fill in with questions or gaps that we've missed. So briefly let me give you a snapshot of the Ashoka perspective and then hand it over to here.

Why am I here talking to you? I don't come from the field of agriculture, nutrition, health or food. I come from the field of social entrepreneurship. And so about five years ago Ashoka set out to try to find and support and draw lessons about the future from the innovations and insights of around a hundred emerging social entrepreneurs in India and Sub-Saharan Africa who work on changing systems – business, social and policy systems – in rural economies. We did so – again, happy to tell you more about that later. In addition to finding, screening, electing, supporting them, we study them. The question is – what do you see if you look at the world's leading social entrepreneurs? What do you see in terms of patterns and insights about the future? What do you see about what the future is going to look like if your dataset is entrepreneurs? The answer is nutrition – that's what we found, and that's a major focus of what we're doing now.

These are, I think the kinds of people, the social entrepreneurs, who in fact have developed enterprises and business models around the behavioral change and delivery mechanisms that have been questioned today. So it would be really fun and interesting for anyone who's interested to take time on the side and tell you about 10 or 20 or 30 or 40 or a hundred of them. Let me give you one or two examples to set context.

Dale Lewis founded an organization in Zambia called COMACO about ten years ago. Dale Lewis did this because he wanted to save elephants. Dale Lewis now has a food company in Zambia with a supply chain of just over 101,000 smallholder farmers in Dale Lewis' region of Eastern Zambia where those 101,000 farmers support a total population of about a million people. The hunger season has ended, virtually completely. Deforestation has ceased

completely, because desperation has gone away. Poaching of elephants has decreased 93%. And they're exporting peanut butter and soy products throughout Zambia and have initialized into South Africa. Dale argues that the barrier to his expansion right now is a finance barrier; because, in order for his model to work, he's got to commit pre-harvest financing to tens of thousands more farmers who are waiting to sign up for his supply chain operations. The market demand is there, but it's a different way of operating, and the financial markets aren't used to it. It's an example.

We have Steve Collins of Ireland who operates primarily in refugee camps throughout Sub-Saharan Africa who has innovated much like the Salem here around bioavailable nutritional supplements that are correlating, now that massive datasets and big data analysis is available, are correlating with faster and more effective rates of recovery from chronic and acute malnutrition because of attention to micronutrient deficiencies in ways that more traditional food aid programs weren't addressing.

We have Genevieve Moreau of Belgium, a pharmacist who has first documented the nutritional carrying capacity for the soils through farming into food harvesting, transfer, production, cooking and consumption, and then use that now to create a set of protocols that citizens in major metropolitan centers throughout Western Europe are using to lobby their municipal governments to put nourishment and nutritional outcomes at the forefront of their policymaking agenda, etc., etc., etc.

We have had a chart. Just briefly there's a chart I want to show you that simplifies this, and it's my wrap-up, which is to say that, what Ashoka has done – if you can imagine two or three hundred little dots on this diagram – is piece together the value basis that many of the world's leading social entrepreneurs are using around which to form their profit or nonprofit enterprises, either in these different boxes, at the intersection of these boxes, and some of them, perhaps all of these boxes. And by observing this action, which is happening in the field at the scale, like I said, of tens or hundreds of thousands of people, what we are observing is really the formation of this bottom line, the social and economic demand that turns the scientific nutrient chain or the scientific nutrient cycle that we're all familiar with, back into a cycle, that in these locations, at least, seems to offer not just the actual impact in these places and the promise at a much lower scale, to wrap the socioeconomic mechanisms back into the enterprises so that the extracted nutrient chain and pollution become a cycle again that be put back in the hands of millions and millions and millions of change-making people around the world, in the context of a 21st century that is rapidly changing in ways that none of us understand at this point in time.

Thanks for listening through that. I'm going to stop, hand it to Kathy, and then go down the line and just pause and say – So what's your definition of nutrition, and who does it serve?

Katherine Pickus

Sure, and thanks again for the invitation to be here. I'm Kathy Pickus. I oversee corporate responsibility and our philanthropy at Abbott. And many of you know Abbott is a global healthcare company with a very significant nutrition business. And one of my favorite things to do in the context of social responsibility is to migrate over to where the scientists sit and to learn from them not just what they do every day to ensure that the products that our customers buy from us and depend on having the highest of quality and the best and most advanced nutrition

is accessed not just by those who can afford the highest, most innovative products, but how we can capture this expertise and direct it towards initiatives that are being done to serve different needs in various parts of the world in terms of nutrition.

And so I guess when you think of a business like Abbott, we have all kinds of experts that have the capability of lending their expertise to make transformative impacts in terms of how people are accessing nutrition. So we do some things in a philanthropic sense with that expertise. But more and more we're finding that where some critical inputs can take place is in our day-to-day operations through our value chain. And I've heard a lot of people talk about that today, that the private sector has a role. Well, the private sector does have a role, and just listening to my peers from DuPont and from Monsanto, we're actively engaging in operating not just sustainably and responsibly but inclusively.

And so how we think about our value chains going forward... And I've got a senior group of nutrition business leaders in India right now dedicating a new nutrition facility. And one of the most exciting things that we're doing is we're taking some of our value chain expertise, and we're building out capability with smallholder farmers in India. So all of that talk about what's happened in previous panels about what's possible – it's happening. It's happening with Nestlé, it's happening with Abbott in a way that will not just deliver the highest quality of products but it will grow economies in those ecosystems as you talked about in your diagram.

So it's very exciting to talk about this transformation that talks not just about how we can do our more responsibly and sustainably but the inclusive part, thinking about innovations, product innovations that are affordable, that really are directed at some gaps that we'll talk about in a little bit in terms of the area of nutrition and how it can make a really great long-term sustainable impact on the health and wellbeing of populations everywhere.

David Strelneck

Thank you. Navyn.

Navyn Salem

Is anyone else getting hungry, talking about food for the last four hours without a break? Well, I brought some if you guys can't wait. So thanks for having me.

Nutrition to me once meant how do I feed my own kids? I have four young daughters, and it's a constant battle in our house. But about seven years ago, I looked at it in a completely different way. And with visiting in Tanzania where my father, my grandfather and great-grandparents came from, and visiting a malnutrition ward in Dar es Salaam and seeing in this ward children who couldn't pick up their heads, children who could barely breathe, open their eyes and see that someone's there to visit them, and to then see children actually die from a lack of food and nutrition and hear the mother, who's in such grief from the loss of her child, completely change how I viewed malnutrition and nutrition in general.

And that experience alone was enough to make me decide to dedicate my life to this very simple idea of trying to deliver micronutrients to children so that not only they have the ability to survive but also so that we can build their brains and bodies so they can drive, they can do

well in school, and they can be productive members of society as they get older. And so it was that one experience that... Actually, after I visited that malnutrition ward, I went to visit a factory – strange, maybe, correlation. But this factory was making mosquito nets, and there was a line out the door of people. And I said, “What are those people out there waiting for?” And he said, “They’re waiting for jobs.” And when I went into this factory, there were 3,000 women working in this factory making mosquito nets. And I thought – this is a brilliant business model. They are creating jobs, and they just happen to be solving a global health challenge at the same time. And so I thought maybe I could use my business background to do something similar but in this way address malnutrition, address agriculture, job creation and that whole triangle together to be able to address malnutrition in Tanzania.

So I set up a factory there to employ local Tanzanians and local peanuts and all the inputs that we could get and then a few years after that decide that we needed a factory in the U.S. as well, because there wasn’t at the time a nonprofit food aid manufacturing company that could work with USAID and work with our government here to look at how we can respond from the United States. Having a factory here allows us to be engaged in research and development, in innovation and new products and ideas.

And so what we do 24 hours a day is make a fortified peanut butter that was just here that’s basically peanuts, milk powder, vitamins and minerals; and it’s proven to completely rehabilitate a severely malnourished child in an average of seven to eight weeks. And we are producing this around the clock, mostly in response to emergencies. And, while that’s not a very long-term approach and it maybe doesn’t have to do with agriculture and research and that whole thought of value chains and things like that, there is such a need for emergencies at the same time. We’ve got wars going on everywhere, in Syria, Central African Republic, Sudan. We have droughts. There’s so much instability that, while what we’re talking about here in agriculture is so important, sometimes we can’t wait and we have to intervene in emergencies.

And so what we’re dealing with mostly is the acute malnutrition. We’re always trying to push more towards prevention, and we do do a lot of work in that area, but a lot of why we’re running around the clock with no notice is really in response to these emergencies. So we work with UNICEF, World Food Programme and USAID, who help distribute these products called “ready-to-use therapeutic foods” in about 42 countries since we opened four years ago. We’ve reached about two and a half million children in that timeframe, and that’s really only scratching the surface.

David Strelneck

Thank you, Navyn. Navyn has introduced an important thread through all the conversations I think we’ve had today. And certainly if you talk about nutrition, which is the distinction between severe, acute, short-term macronutrient, starvation, physical hunger that you feel, versus what is sometimes now called “hidden hunger, long-term micronutrient and marrow deficiencies,” which aren’t even that well understood. But again because of the power of big data are at least beginning to be correlated with higher rates of disease recovery, higher levels of performance in school, higher levels of productivity in companies, and also with very serious implications for the intergenerational implications of babies whose mothers were malnourished when those babies were in the womb and during the first few weeks or months of life. There’s a difference here between feeding hungry people so their stomachs feel full and they’ve basically

recovered the energy they need to function and society's long-term physical and cognitive development and ability to function economically. And so we get into the question of what's the relevance of all the technologies and approaches and of nature's own capacity to generate nourishment, as a short-term solution or as a long-term model of fostering people and communities that nourish themselves around the planet.

Tom from Walmart.

Tom Leech

Thank you. It's a pleasure to be here. I've sat through the last couple sessions, and this is one of our biggest challenges. I would agree with others are saying. At Walmart we serve about 250 million customers every week, in 27 countries. And so the ability to be able to source and move products efficiently, to be able to serve our customers is a business imperative. It's our survival as a company; it's also probably the most important challenge that we're facing.

So as we think about our role, there's lots of things I can talk about, but we see ourselves as a company that can, I guess, leverage who we are maybe to a degree, the power of appeal, to bring people to bring people together to have these types of conversations. When we think about what we're trying to do, we always talk about bringing safe, affordable, sustainable, nutritious foods to our customers in all those countries.

So as we think about this, just last week, as a matter of fact, we held a summit in Bentonville on sustainability. It was led by Doug McMillon, our new president and CEO, and we had folks from all different areas of the business. And we talked about specific objectives, and at Walmart we're very clear that we do well what we measure. So we're very big on measuring, and so we set measures and objectives and goals on everything; and we hold ourselves and accountable, and we communicate back how we're tracking against those measurements.

And I can't get into all the details, just in the interest of time, but there were about ten suppliers who Walmart has worked with who made announcements around commitments. And in aggregate those commitments impact about ten million acres of land where they're working with farmers on trying to have more efficient agriculture practices. A lot of it is around reducing the greenhouse gas emissions. And so we've set specific objectives, and we've done this for several years now, around water, around yields, around GHG; and so we're holding ourselves accountable to those.

Now, how do we define nutrition? I mean, that's a big question, obviously. I think a few things I'd like to just mention before I pass it over is, when I think about nutrition, I think there's several things we're doing and that we will continue to do and that we need to do more. So one area would be just purely around product and ingredients. And we've set goals on... One of my areas of responsibility is private brands within Walmart U.S., and we've set very specific, targeted goals around reduction on sugar, reduction of sodium, reduction of, or elimination of, trans fats. So we set specific goals on our private brands, which is something we have more control over, all right those areas; and we're making great progress on those, and we will continue to stretch our goals in those respects.

Another area that I'd like to comment on is just healthier options, nutritional options. And we believe it's our role to try to find supply chain efficiencies and pass those cost savings on to our customers. Because I think one of the things in nutrition is affordability. And so what we're trying to do, and I think Walmart does a fairly good job of trying to find supply chain efficiencies and working with, whether it be the growers or the manufacturers. And so we're very focused around that. And as we measure, we believe we pass on in the neighborhood of a billion dollars of savings to our customers in produce alone every year.

David Strelneck

Thanks, Tom. I'm sorry, Bram. Let me make just two observations I have on this. One is, Tom has introduced another dimension then of what we mean by nutrition, which is this question of overconsumption. And, depending on the science you follow, it's a question of the ratio between the micronutrients and the macronutrients that you consume and the struggle that almost every country on the planet faces now with burgeoning obesity crises and the chronic illnesses that come with that, in part related to the problem that, in order to achieve sufficient micronutrient and trace element intake, we are overconsuming calories. This is a nutritional problem, and it again begs this question of acute, immediate short-term undernutrition, overnutrition of primary macronutrients or the spread of minerals and trace elements that we all need but we don't understand scientifically very well yet at this point.

The other thing I wanted to observe is that, so all we need basically is 36 more Walmarts to serve nine million people – right? Or we need some other approaches to be thrown into the mix. Right?

Tom Leech

So let me just comment on that. So I do believe that this is not a company fight, this is not an NGO fight. I mean, this is everybody sitting in this room and those who've probably already left to happy hour. Where we feel the power of this is where we get together with others and we talk about it and we brainstorm.

But what I'm very clear on is, we have to set goals, and we have to be extremely diligent on measuring ourselves against those goals. And what I worry about when I attend things like this is I worry that we can have great conversation, but that's just conversation. So how do we think about piloting something, and then, when it's successful, scaling it? And I've spent a lot of my time in the last few months specifically around... We have several pilots that we're just initiating around with some partners around water and those things I mentioned before – yields, technology and produce – and we've set specific pilots. And the whole thing is around, at what point do you determine that it's successful enough to scale it? And then scaling it quickly. And in the Walmart world obviously we're about scale and efficiencies, and so we're looking at ways of doing things that are good and reduce costs and we can scale.

David Strelneck

Thank you.

Tom Leech

Sorry.

David Strelneck

No problem. Bram.

Bram Govaerts

Yeah, actually when I got the invitation for this panel, my first reaction was – this is going to be a piece of cake, you know, because it's about nutrition. So it's going to be about how to get the right amount of fertilizer to the plant and the plant's happy and grows. And then I started to prepare myself for the session, and all of a sudden it was not that kind of nutrition. So then I got confused, and I kept reading and reading and thinking about it, and then I came to the conclusion that it's exactly about that kind of nutrition – because it's about soil fertility. And actually the this nutrition you guys are talking about can become a driver, because in the end, working for the international maize and wheat improvement system. The vision or the goal is to develop sustainable maize, wheat-based production systems. And the nutrition can be a driver, especially for sustainability, the sustainability part.

Because if you look at a smallholder farmer who has to make sure that he produces enough food for the family, we want that farmer to have a diverse diet. But from an agronomic point of view, we want that farmer probably to do conservation agriculture so we have fertile soils so that we leave some of the residues but also especially to do crop rotation or crop diversification. So there they already come together.

But then if you look at the farmer who actually tries to sell some of the wheat on the market, it's clear that the wheat breeding effort takes into account from the beginning of the whole thinking, from the beginning of how are we going to make sure that our research is responding to a need is actual solving a limiting factor that that farmer is going to have to live with when he's managing that production system.

Quality becomes extremely important, so breeders in CIMMYT are very worried from the beginning to make sure that those wheat varieties, that those have the right quality aspects so that they can actually go to the market.

But then it was exactly also what happened a couple of months ago that I was very surprised when I asked one of the most important bakers to draw its value chain, its supply chain. And that supply chain started where the millers started, so actually the farmer was of that supply chain. And that becomes very interesting, because then we lose that driver effect. So part of what you're talking about, going to scale, part of how can we make those innovations happen, part of how can we actually provoke that change is by integrated that back into that value chain thinking, and that actually you, Walmart, would be worried about how is that wheat that is in my bread actually produced? Maybe, can we think about some sustainable bread or maybe think about some sustainable cookie that actually takes into account what happened with those trace gases, not only when you transport the cookies from the factory to your shops but actually when the wheat was produced that goes into those cookies.

And then if you get the third part where actually we want a self-sufficient farmer to not only feed the family but also the surplus, the extra he or she generates, to be able to sell that on the working market. So then it becomes actually more of a driver, because then he or she is making sure that the local community or further away has nutritious maize and wheat that can be used maybe in a, I don't know, a fancy restaurant in New York by buying blue tortillas from land races produced in sustainable practices in Mexico.

David Strelneck

Thank you so much, and Bram has done a wonderful wrap back to what Ashoka means, what Ashoka observes the entrepreneurs of the world doing around what we call the nutrient value chain—right? I think this pause for a minute—wait a minute—you mean that. We do mean that better nourished people who are performing more effectively in their economies and their schools and infant babies are succeeding in life correlate with the quality of the soil in which your food was grown. Absolutely, that's what we're saying, and we're seeing it at the scale of hundreds of thousands, or in Zambia case at least one million people in this one valley.

Question and Answer Session

Strelneck I'm going to take... We only have five minutes. A couple people need to run to the airport, and we're talking about cookies and bread and things that we all want to nourish ourselves with. So I see one gentleman waiting patiently at the mic and one lady. Let's take your two comments or questions. I'm going to add a third one of my own. We'll have a quick set of wrap-up comments just sort of tapping those, and hopefully with this provocation we can continue the nourishment conversation over dinner and beyond.

Question Thank you very much. My name is Chris Goldthwait. I wear several hats, but I'm asking the question on behalf of the American Peanut Council. We work to promote the use of ready-to-use therapeutic food and ready-to-use supplementary food. And we do this regardless of whether we're supporting the American producers like Edesia or producers in developing countries that use local peanuts for these products. My question actually is for Mr. Leech, and it goes to some discussions that we've been having with Edesia and other American producers about whether or not there is a role for the ready-to-use supplementary foods, not targeted as they have been up until now at people that really cannot afford them that have to use...that are in fact the beneficiaries of NGOs and governments and international organizations that hand out these foods. But whether for people that are a little bit further up in the income chain, there would be a use for them as commercial products. And I'd like to ask Mr. Leech whether he would see a market for products in his stores for those stores that are in emerging markets and developing countries, for a commercial product that is essentially a nutritional supplement similar to a ready-to-use supplementary food.

Strelneck Thank you.

Leech So, ah.

Strelneck You want to tackle it now? Go for it.

Leech Pardon me?

Strelneck I was going to take the next question and then go on down.

Leech You want to do that, okay.

Question My name is Penny Anderson. I work for Mercy Corps, a humanitarian organization. And thank you to the panel. I think it's so important to address nutrition at sessions like this. Earlier today one of the speakers was talking about how increased agricultural productivity can have a very powerful impact on improving nutrition, and that certainly is true but not always. There have also been cases where there has been increased productivity, increased income, and there's been seen a reduction in nutrition and food security, perhaps because smallholder farmers are switching to cash crops or they're growing something more diverse, but they're selling it and they're selling it and they're buying the staples once again. So my question is – What is the best way to ensure that smallholder farmers are able to address not only perhaps increased yields but also increased nutrition and addressing micronutrient deficiencies as well as the caloric need? Thank you.

Strelneck We only have three minutes, so I'm going to have to ask you to hold. Thank you. Because I want to toss my last provocation in as well, which is I'd love to hear any comments or thoughts from you or all of you over the next day or two.

One of the things we're pretty sure from the view of social entrepreneurs that we're going to be able to do in the next few years – not tomorrow but not too far in the distant future – is to get a readout of your personal level of nourishment. Using big data, using very advanced spectranomical or other approaches, to be able to tell you how nourishing some piece of food is that you're holding in your hand or how nourished you are as a person. In the Ashoka world, we believe that this is going to drive immense demand for regenerative farming conservation agriculture, soil enhancement, which will also lead to, as we all know, carbon capture, improved water cycles, resilience in the face of climate change, etc.

For you all, if you want to address it now, for all of you to ponder, the question is – How is your world going to change, how is your business going to change when you can actually measure not the nutritional inputs to a product but the nourishment outcomes that come from consuming that product?

Tom, why don't we lead off with you because you've got a specific question. You can react to any of the three.

Leech Well, first of all, for the first question I was asked around nutritional supplements, I mean it's hard for me to answer in a general way. What I would always say is that, I mean, anybody who's walked into Walmart sees that we carry a lot of SKUs, a lot of products. And the customer is our boss – that's the way we see it – and if a customer needs something or wants something, then we make it available to them. And I have no doubt that there are markets... There's actually even places inside our country here where there's a need for probably more nutritional supplemental products, and so it's kind of a generic answer, but there's no doubt to me that there is a need by certain customers, whether it be in our own country here or in other countries around the world.

And I think our challenge, and I mentioned it earlier on communication, is not all customers who need nutrition go out and spend their money on that. And so we have to help educate people as to how do they afford nutritious products. Because often what happens is those who are more economically challenged tend to spend their money on things that are less nutritious. So that's why I emphasize affordability of produce and other types of products, is we have to be able to make products that are nutritious and healthier available so that people can afford them.

Well, I'll stop.

Strelneck Other responses?

Pickus Just a little bit about where the opportunity resides. And one of the things that we're finding that long gone are the days when we can just manufacture something and put it on the shelf. There's an absolute demand to report on the traceability of every ingredient, as well as a responsibility to deliver products that meet these needs and make them affordable.

And one of the things that we're finding is that our typical partnerships have been completely transformed based on where the demand is coming from in terms of emerging markets or developing markets. We're finding that our typical historic partners in philanthropy are coming to us and saying, "We no longer want to have a grant from the Foundation. We want to be your business partner. We want to make sure that we're a part of the delivery mechanism, not always so that we can access some of the nutrition, but we can also make a living while doing that." We also need to make sure that we're delivering against expectations in terms of what the sustainability profile of those products is as well. So it gets very complicated.

Strelneck Navyn, did you have any other?

Salem Just in closing, I think, as we look to feed nine billion people, there's really an opportunity here to link agriculture and nutrition as much as we can and really the importance of delivering micronutrients to the two billion people who don't have access to them right now and more of that education and awareness about how this lifts an entire country and raises their GDP by several percentage points

is such a critical need. And our part is to continually be innovating and looking for specific targeted solutions for specific populations, not in any way a silver bullet but looking at all the different..., whether they're pregnant mothers, school children, children under the age of two – they all need different interventions at different stages of their lives. And we've got to find creative, cost-effective, attractive solutions to treating those people at those critical stages of life.

Govaerts I would just add that, related to the question of the second person, it's because we need to decide it's not only about productivity, it's not only about increasing the volume, if that's your definition of productivity. From the beginning in that whole analysis, quality, postharvest technologies, soil health, soil fertility need to be included in the whole design of that, what we would call productivity, productivity gain.

And going a little bit back to your comment on big data, in a sense it's getting easier and easier to generate data, so it's getting easier and easier to have big data, but it's getting more and more complicated to turn those big data into something meaningful, and, two, information that actually supports decision-taking at the right time. And number two, that that decision-taking and that information is available in an equal manner, on an equal access to everybody who needs it along that value chain. So now that this trend is happening, I think that we have the responsibility as another in sustainability to make sure from the beginning that equal access is guaranteed.

And how as this whole discussion changes, I think it brings very clearly forward that we are starting to focus on the nexus between soil, water and agriculture and food, and that, within the research, it's really looking at those processes are going to be able to make a difference.

Strelneck Thank you, Bram. Everybody, thank you very much for being here. I think the takeaway is interesting. It's complex – it's the science, the technologies, the infrastructure that underlie it are important, but they're still not going to reach nine billion people if you don't somehow get all of these resources and ideas into the hands of a lot more people on planet earth who see it as their own place to seize the problem, to craft local solutions, to make change. That's really what Ashoka is all about, and our focus right now in this realm is on putting this idea of the nutrient value chain and how change-making people up and down that chain can benefit, putting it in the hands of millions of people around the planet, letting them ride on the science and the analytics and the infrastructure and the government policies that many of you are responsible for developing – thank you – but now putting it in the hands of multiple diverse, powerful groups of people in the world.

Thanks, everybody, and thanks to the World Food Prize for giving us this time today.