

ROUNDTABLE #3: NUTRITION-SENSITIVE FOOD SYSTEMS

Robynne Anderson - Moderator

October 22, 2021 | 9:00-10:15 a.m.

Roundtable Panel

Shawn Baker	Chief Nutritionist, USAID
Gina Gutiérrez	Dairy Farmer (Mexico), Global Farmer Network
Lawrence Haddad	2018 World Food Prize Laureate; Executive Director, Global Alliance for Improved Nutrition (GAIN)
Shakuntala Haraksingh Thilsted	2021 World Food Prize Laureate; Global Lead for Nutrition and Public Health, WorldFish
A.G. Kawamura	Co-Chair, Solutions From the Land
Onyaole Patience Koku	Chief Executive Officer, Replenish Farms, Ltd.
Rattan Lal	2020 World Food Prize Laureate; Professor, The Ohio State University
Jennifer Sorenson	President, National Pork Producers Council
Naoko Yamamoto	Chair, UN Nutrition

Roundtable Moderator

Robynne Anderson

Founder, Emerging Ag, Inc.

Hello. My name is Robynne Anderson, and it's a great pleasure to join you here at the World Food Prize Foundation. The word *food* is right in the name of the Prize, and nothing could be more important than the nutrition we get out of that food. This panel and roundtable today is full of eminent experts, people right from the start of the food system. All the way through to the experts that lead the policy and the development of our nutritional systems.

Today we're going to explore what we need to do to create more action around nutrition. And with this panel I am pleased to say that we have all of their biographies on the Whova immediately below, and we'll begin to explore with each of them – what are some of the key action items? And first I'd like to call on Naoko Yamamoto, who is with the World Health Organization. She's going to provide a bit of a scene setting for us about just how much urgency exists on the question of nutrition in the world today; Naoko.

Naoko Thank you very much, Robynne, and as a chair with you in Nutrition. I'm very pleased to join here today. I would like to share a few thoughts to frame the discussion.

We at U.N. Nutrition are one voice for nutrition, bringing together all U.N. agencies working on nutrition. We combine many strengths and the capacity with several actors and make them work for nutrition by ensuring that more people

can access and consume safer and healthier food. This could be a working definition of a nutrition-sensitive food assistance.

This year of 2021 is a great year for food assistance. The U.N. member states and broad stakeholders of the Committee of World Food Security, CFS, adopted guidelines of the food system and nutrition. We also saw an empowered movement to our Food Systems Summit, that led the coalition for healthier diets or broader school meal programs and so on. 2019 has been a wake-up call with the pandemic, which started as a health problem but showed how fragile and interconnected food and health systems are. Systems were affected by measures implemented to slow down the spread of the virus, including lockdown and restrictions with transportation and long and complex supply lines are vulnerable particularly for perishable foods, such as fruits, vegetables and fish. This is why we have to rethink and strengthen production. The most vulnerable groups will get hit harder if we don't take urgent action in the coming three years; almost 300,000 more children will die because of malnutrition. We need approaches for better connectivity between land, water and aquatic systems and nutrition and health. We cannot treat them in isolation but have to move from the narrative to action, otherwise reducing malnutrition in all its forms will remain an elusive goal.

Let me please end by telling examples from Bangladesh. They combined the production of a small nutritious fish species with vegetable production in their gardens on the farm. This contributed to reducing malnutrition. I'm looking forward to discuss with the distinguished panel how we can make our food system nutritious-sensitive and what action we can take. I thank you.

Robynne Thank you, Dr. Yamamoto. We really appreciate everything that the World Health Organization has been doing to highlight these issues. And indeed the situation is very grave.

I'd like now to call on the next segment of our panel. In this conversation we'll have Shawn Baker, Chief Nutritionist from USAID; Dr. Rattan Lal, an eminent, immediate past winner of the World Food Prize and one of the world's leading experts on soil; Dr. Shakuntala Haraksingh Thilsted, of course this year's Prize winner, who works in the area of aquatic foods; and Patience Koku, who is a farmer from Nigeria who is a member of the Global Farmer Network and an active participant in her own community about creative solutions to increase food security.

In this segment, Shawn, I'd like to turn to you first to talk a little bit about this question of urgency. Naoko spoke to that very compellingly. What do you think the state of food and nutrition really is, and in particular, for mothers and children, these days?

Shawn Thank you so much, Robynne, and it's a pleasure to go after Dr. Yamamoto. As she's laid out, the situation is really critical, and I think the magical ingredient is really the political will to transform our food systems so they are delivering safe, affordable, nutritious food. And I will hearken back to some of the highlights of the U.N. Food Systems Summit of, when I heard - and I'll just take two examples -

one from West Africa and one from here at home. When you had the president of Ghana making deeply informed, evidence-based, actionable commitments of how to transform systems in mainstream nutrition for the health system, this is exactly the level of political leadership. Then here at home having President Biden at the U.N. General Assembly commit to transforming food systems at home and abroad to deliver safe, affordable, nutritious food.

And what do you need to do to get that level of political will? First, it's really a broad set of actors. Understand the critical nature of good nutrition – 45% of under-5 deaths are attributable to under-nutrition. And for those kids who survive malnutrition, we know we fundamentally deprive them of their optimal physical and cognitive development.

And it's also striking just how badly the food system is failing us. And, Dr. Thilsted, I will steal a bit your words from the wisdom you shared with me earlier in the week, "The food system may currently be feeding the planet, but it's certainly not nourishing the planet." Even before the pandemic, three million people could not afford a healthy diet. An analysis from the International Policy Research Institute indicates that that may increase by about 267 million because of the pandemic. And as Dr. Yamamoto has said, the projections of impact on malnutrition for kids is frightening, about 13.6 million children suffering, facing the most deadly form of malnutrition. And if you look directly at infancy on kids and low- and middle-income countries in that critical period between 6 months and 23 months when breastmilk alone is not alone, you need nutritious food, less than 18% of infants and young children are getting a minimum acceptable diet.

And the cost of those foods is one of the key reasons. Obviously, there are behavioral reasons, but the cost can be so out of reach. And to give an illustration of that, in Niger, if an egg and caloric equivalence is 23.3 times more expensive than that similar caloric equivalent in staples. Now, not a perfect comparison but to give you an example of just how unavoidable nutritious foods can be.

But we have solutions, and this is what we need to get the political will, not behind the problem but behind the solutions, which is quickly making sure we're optimizing the impacts of large-scale food fortification to ensure security of essential vitamins and minerals, making sure we're supporting small and medium enterprises to be able to produce nutritious foods – because there's such a huge part of the interface with the consumers and the food system – mainstreaming breeding for nutrient traits in our breeding systems, more fundamental thinking – how do we transform our food system to say delivering nourishing food is a prime directive, and how do we build back the whole system that that's at the heart?

And then all of that, point #5, needs to be driven by very sound evidence. I think every partner country is facing challenges – and how do we work hand in hand that those challenges are addressed with the best evidence-based solution?

Back over to you, Robynne. Thanks so much.

Robynne I mean the numbers are so compelling, and the reference to – how do we start? And let's pivot to the start of that system. If we go over to our main stage, Dr. Lal, and as a past laureate your life's work has been about soils. How does the soils element relate to this nutrition discussion?

Rattan Thank you very much. It's a really great pleasure to join this panel, and I really appreciate your question. It's estimated that globally more than two billion people are malnourished compared, for example, the estimate of 820 million people who are undernourished, not enough calories, malnourished, not enough protein micronutrients, vitamins. That's a very serious problem.

I attribute widespread malnourishment to very large-scale soil degradation. Indeed soil degradation is the cause of human malnourishment. Wherever soils are degraded, that's where the population dependent on its food grown on that soil also has malnourishment. I'm going to give you examples specifically.

There are 17 micronutrients that are essential for vitamin health. And although I hear quite a lot about biofortification – golden rice is a very good example; Sweet potato is an excellent example, vitamin A and other biofortification can definitely help. But these micronutrients have to come from somewhere. This is a very important part to recognize if we are to address the problem. The miracle varieties can only do miracles if they are grown in a soil with optimal availability of water and nutrients, especially micronutrients. Miracle varieties cannot withdraw nutrients if they do not exist. This is a very important concept to understand – therefore we can do something about it.

Another very important concept is that soil is no different than a bank account. In a bank account you cannot withdraw more than what you put into it, especially in the last decade so there has been no interest on it, whatever you put in the bank. So you cannot withdraw more. I mean I didn't know that I put a check which had more than my present amount, and I got the fine, a tremendous fine. Soil also punishes you when you draw more than what you put into it. Soil does not forget it. And a negative-nutrient budget creates a very serious problem of nutrient imbalance. When the nutrient imbalance happens, some nutrients are more than the other, and that ratio which is optimal is not there. Food grown on unbalanced nutrition concentration of important nutrients in soil produces food which is deficient in micronutrients. And one thing I must say – that good food is good medicine. When the food is good, medicine is of no use. When food is poor, medicine is of no use. Medicine does not work when people are malnourished. And a healthy soil is the basis.

Lawrence may remember. I've discussed with him one of my concerns at the U.N. Food Systems Summit where the focus was on human/animal nexus health, a nexus. And I fully agree that human/animal health is connected – absolutely correct. There are diseases which are spread from animal to human – absolutely correct. But please understand this one very simple part: as a nation, when we try to lift anything, we find it's hitched to everything else. And a typical example of it being hitched to everything else is the following: the health of soil, plants, animals, people, environment and the planet – is one and indivisible. And when the health of soil goes down because of land misuse and mismanagement, it has a

cascading effect on the health of everything else. This is what I was trying to correct in the U.S. Food Systems Summit. Yes, human/animal health is very interconnected, but please look at the bigger picture if you want to solve the undernourishment problem widely spread in the world. It begins with the restoration of soil health.

One other thing – which I think is going to look like preaching, but it's very important to say it – the fire that burns in the pit of an empty stomach, its ferocity, it's severity, can only be quenched by the divine powers in a loaf of bread made from grains grown in healthy soil. That's the best medicine to improve human health. If we do not remember this, unfortunately, we'll be discussing the same problem in 2030. Thank you.

Robynne So compelling. Thank you so much, Dr. Lal. This is truly a one health approach, and it does start with the soil, and equally it starts with our oceans. Shakuntala, you are the World Food Prize Laureate this year from WorldFish, the Head of Nutrition and Public Health. How does this message about our soils equally apply to our oceans?

Shakuntala Thank you so much, and I'm happy to be here. Very often we look at land and food systems and we forget all about water systems. But now the CGIAR is trying to rectify this with the mission and the vision on food, land and water systems. So we must recognize the synergies between land and water systems and be very mindful that the actions we take on land affect those in the water systems and vice versa.

I worked a lot in Asia and on the Asia mega-deltas, such as the Mekong Delta and the Irrawaddy Delta. And this area is home to 360 million people, and many a point vulnerable. And if we do not take into consideration the changes that are happening in these deltas with climate change, then we are going to miss out on what we have set to do in the U.N. Food Systems Summit. Changes in the land and in the water systems, the aquatic systems must be managed and must be developed, or else it would affect food and nutrition security, it would affect livelihoods of income of all the people who depend on the delta.

Secondly, we must prioritize these people. We must not just think about the solutions that deal with the food or the environment but also have a people-centered approach. Nutrition-sensitive solutions must be built, and the multiple benefits that they have on food and nutrition security, livelihoods, income and social justice must be taken into consideration. And it must impact, because these impact people at scale and are intergenerational.

And let us consider the diversity of systems. We have not been good at doing this. And in considering the diversity of systems, we must take into consideration the aquatic foods that make up the diversity of the systems. Just having small amounts of these aquatic foods on the plate will have great effects on nutrition and health of the people.

So it's very important that we integrate aquatic foods within the systems, within the water-based systems and the land-based systems. And we must build in the

innovations and solutions for this. To do so, we must have the commitment for investments. Until now, the investments that we have, have been on land systems, and we must now look towards the investments that we need within food, land and water systems. And we must shift the agenda so much more... I'm not saying that we must have the same pie of investments – we need to grow the pie of investments, and the slice that we have for aquatic foods must be larger. Thank you.

Robynne Indeed, we need to nourish the systems that we participate in. Thank you so much, and congratulations for your Award. We'll come back on a few of these points, but I'd like to bring in Patience Koku, who is a farmer in Nigeria. And Patience has a frontline experience of some of these issues that we've talked about, the challenges that Shawn raised on nutrition-sensitive agriculture and how to really make sure that we're nourishing people right from the start. And she on her own farm has to deal with all those soil issues that Dr. Lal was speaking about. Patience, what do you think we need to do to make sure that we can get those diverse diets that we really need for people on the ground?

Patience Thank you, Robynne, and I'm really honored to be here today. And thank you, World Food Prize Foundation.

I think for me, my task today is just basically speaking after such distinguished speakers..., to bring a real face to the challenges that do really exist in where I live, which is Nigeria, as a farmer also and as a woman. I think that if we understand the reality truly, like it was clearly stated by the keynote speaker, CFS 49, that 3 billion people cannot afford nutritious food, period. And the reality is, in my country, minimum wage is \$79 a month. And so what needs to be done? If I can't afford to eat nutritious food and I need to be healthy, it then becomes imperative that every tool in the box has to be deployed.

So as a farmer, I want to be able to grow on nutritious and productive soil, but then that's also a challenge; because I don't have access to all the things that I need. So what do we need to do? We have highlighted biofortification. If I cannot afford to eat fruits and vegetables to be able to get vitamins, can I eat my staple foods and get iron or whatever nutrients else I need, in that food? Funding for these programs have also been highlighted, so those technologies do exist.

But then when we come back to what Shawn said about the urgency, what I would like to urge on the part, coming out of the U.N. Food Systems Summit is that, when we talk about urgency, we must accept every tool that is available. So as we quickly were able to develop a COVID vaccine, we need to be able to develop, use technologies that are available, whatever they are, to be able to produce these biofortified foods or to improve our soils, whatever we need to do that is an urgency there.

Then the second point that I would like to choose. Like I will speak from an African perspective of the farmer and also an African. We have indigenous foods that are very nutritious. However, because they are not staples, not a lot of funding goes to improving those foods.

I'll give you an example — fluted pumpkins. If the fluted pumpkin high in iron, Moringa, is a superfood, or African foods; however, Africans are not eating them or relying on them so much. And so when we speak of what Naoko spoke to you about, homestead gardens, how do we put the entire process in place where we can improve the breeding to the indigenous foods, the processing and the storage so that people can be able to get these, and easily accessible, and then be able to eat nutritious foods and be able to stay alive.

The urgency truly is — how do we get people to stay alive? Production is low in these same countries where the people cannot afford food and the money is not there to buy food. What can we do? Very quickly, we can make sure that we are moving with urgency in improving the production of these foods so that people can eat and stay alive. Thank you.

Robynne Thank you, Patience, and I know on your own farms you grow a great diversity of products and citing those examples of local foods or indigenous foods that can make up a diverse diet is really key to both success in farming and also achieving the nutritional outcomes we want and the environmental outcomes we want. And you can see those threads pulling through this conversation.

I'd like to bring in some more producers into the conversation. We have Jennifer Sorenson who is the Communications from Iowa Select Farms, who is active in the port sector in particular. We have A.G. Kawamura who is here who is himself the Chair of the Solutions for the Land, a horticulture producer, a farmer in California, and working on urban agriculture solutions as well. And Gina Gutiérrez is from Mexico, who is a dairy farmer and incredible spokesperson for young farmers around the world and very active in her local cooperatives. So we have a great diversity from Patience all the way through to Gina of a fantastic set of farmers who are engaged in this production.

And I'd like to not just say “farmers.” I'd like to bring fishers and Shakuntala into this conversation as well. Shakuntala, when you think about what we need to do to get that diverse diet built out — you alluded to this in some of your early remarks. What are some of the programs that can get those aquatic foods into people's hands?

Shakuntala For me that's easy, because we have systems now, we have food systems; however, we know that these food systems are not delivering. They are not delivering on food and nutrition security, they are not delivering on income, on livelihoods, and they are not delivering on the health of our planet. If we would bring, from where I stand and the work that I do and represent, if we would bring in aquatic food systems where over 3.3 billion people depend on aquatic foods for healthy diets, for nutritious diets, and for having parts of aquatic food, diverse aquatic food on their plate, then we have increased the opportunity of getting to our solutions and getting to where we want to go.

Also, if we would look at where we were with the Food Systems Summit, we have reached far with the Food Systems Summit in getting this shift just from land and food systems to food, land and water systems. And we saw, for example, from the

science group of the U.N. Food Systems Summit, that seven priorities were recommended, one of these being aquatic foods.

So where we stand today, we have gotten some evidence. The U.N. nutrition discussion paper on the role of aquatic foods and sustainable, healthy diets came up with very specific recommendations as to how we can use aquatic foods to have this diversity of the diets and to improve food and nutrition security. We have also had collaboration with Stanford University and Stockholm Resilience Center on new foods assessment, across the board, of the multiple benefits of aquatic foods. So we have the evidence. We know where we can go. We have been pointed towards solutions within the U.N. Food Systems Summit, for example, school feeding programs. So let us use the aquatic foods within these solutions to get the best benefits that we can.

Robynne Great to mention school feeding as well. It's the first time it's come up so far. You were talking about diverse proteins from aquatic foods. I know Patience grows pulse foods on her farm. Jennifer, can we bring you in to talk a little bit about the role of diverse proteins.

Jennifer Absolutely. Such an honor to be here. You know, there's no lack of evidence showing the importance of animal protein in helping prevent childhood hunger and malnutrition. Pork is the most widely eaten meat on the globe. The International Pork Board in fact shows that a three-ounce serving of pork provides 3.5% iron, a necessary mineral we know is needed for that growth and development, has less than 5 grams of fat, is naturally low in sodium and just packed with protein. With that nutritionally packed cut of meat with both micro and macronutrients and its affordability, working together to ensure our community's children, mothers and lactating women have equitable access to animal protein like pork is critical.

You know, we as pork producers, I'm an Iowa farmer, I'm an Iowa pork producer – we're committed to producing that quality-safe pork, because we are able here in the U.S. to export nearly a quarter, over a quarter of our production to over a hundred countries, providing women and children across the globe with access to affordable protein. And we can do more. We can get pork to where it's needed most.

Part of the key to that is our efforts in sustainability. As a key part of the solution – Dr. Lal touched on that earlier today, such phenomenal statements of soil health and soil regeneration; and pork production is a key part of that. If you asked a pork producer 15 years ago what "sustainability" means, it would probably draw a blank stare. We talked about productivity, efficiency, innovation and doing more with fewer resources. And we've delivered on that promise as farmers. And so if you put just a couple numbers to that, last year U.S. farmers produced nearly 30 billion pounds of pork from 130 marketing hogs. To get to that same amount of pork using 1990s technology, it would have required an additional 30 million pigs – that is doing more with less, and we are delivering on that promise. So we have an incredible story of sustainability to tell, and we have a commitment to continue to do better.

And back to the comments on soil health and regeneration, that's what that means. Over the past 50 years we've reduced our carbon emissions by nearly 8%, we've used 76% less land and 25% less water. And that sustainability soil and that recycling soil is one we are so proud of. Manure on our farms is not a waste—it goes back into the soil as a fertilizer, providing a closed-loop system so we're not bringing in additional outside sources of fertilizer. We're restoring our soil, and that's a proud fact that we have.

You know, because of pork's high birthing rates, hogs provide that sustainable opportunity for families to be able to access those high-protein, healthy meals while having a sustainable return on investment and a path to food security across the globe.

Robynne Great. Thanks, Jennifer, and it's certainly wonderful to hear all those metrics about the concrete things that are being done and to think about the way in which providing diverse proteins can also be about a path towards a more sustainable production. I'm going to bring in A.G. here, and he's also done a lot of work on really diverse approaches to production in the U.S. context. A.G., you are an amazing urban farmer, a very creative user of land and soils that might otherwise be lost in urban spaces, everything from underneath highways, as I understand it, to other facilities. Tell us a little bit about what you think that kind of creative production does to get nutrition into supply chains that actually get to people.

A.G. Sure, thank you, Robynne, and again thank you very much for this wonderful opportunity to share some thoughts here about how we actually end hunger and nutrition insecurity, not only in this country in the United States but across the planet. And I'm a firm believer that, actually the pandemic, if you can't recognize that, this unprecedented disruption in the global food supply has actually opened our eyes to our strengths; certainly it's showed our weakness and vulnerabilities. But I think it's given us a chance to rethink what it is, what are we trying to accomplish? And as Shawn mentioned, the public will and the political will to end hunger has to be dealt with—we can end it if we continue to maintain the capacity to have enough food; in other words, if we have abundance, then we can distribute it to everybody. If we have a world of scarcity, we have a different world, and we're going to be in deep, deep trouble.

And so the idea that there's all kinds of new ways of looking at our food system and the resources we have in our own backyards. We've been doing edible landscapes and working directly with farm projects in our county for delivering food, custom-grown food through the food bank. And we've been doing that for 30 years. We've been doing gleaning projects 30 years ago as well. So this idea of—how do you address waste, how do you address nutrition insecurity? There's some solutions right now that have been ongoing for a long time. And this year we've realized that for 25 years we've been custom growing a food bank at three to four or five, six acres a year, working with our Farm Bureau, working with our collaborations.

And they want to make sure we understand that innovative collaborations are kind of the hallmark of where we are today in this 21st century. We can do a lot of things by thinking across the spectrum of our independent silos that have been

ongoing, but by pulling ourselves together and saying – what is it that we’re trying to accomplish? – we can do a lot. This year, for example, we’ve decided – why are we growing three and four and five acres? Let’s grow 40, 50, 60 acres. And some incredible thinkers at our local food bank have realized they’ve got access to all kinds of resources. The farming community has access to all kinds of resources. The school districts have access to land. The water districts have a chance to provide water. And so we started to see that we can ramp up. For example, in our own county we’re going to grow and start harvest in just about three weeks and deliver about 40,000 pounds of food every week to the food bank of beautiful cabbage, broccoli, celery, and some other products.

And this partnership can be scaled and replicated all over the country and all over the world. And this idea of – *Edible landscapes everywhere so there’s hunger nowhere* – I know that sounds good, but it’s actually very achievable. And I think what we are looking at then is that new thinking and new partners, these innovative collaborations can really deliver this idea that those most in need can get the very best food, the highest-quality food.

And just let me finish by saying we were complacent for many years, thinking that end of life food products, rejected products, expired food products was going to be the main amount of food that would go through a food bank. And I think now we’re realizing, because of programs like the Farm to Family Food Box deliveries that some of the greatest products in the world can be delivered again to those most in need, and it’s easily replicable with support from everybody. So we’re excited about that. And this nutrient-dense focus instead of just food scarcity but nutrition scarcity is the right direction to kind of redirect our thinking about what it is we’re trying to accomplish. And I thank all the members of the panel, and especially the World Food Prize, for being in this lane that lets us really accelerate what we’re trying to accomplish by the year 2030 – these several pieces of SDGs. Thank you so much.

Robynne A.G., every time I hear from you, I’m more inspired by the work you do. And I think the potential to also bring this to schools not only for school feedings but also school-based agricultural education breeds a respect for the soil, breeds a respect for the food, as well as being part of that food security you mentioned.

A.G. Can I mention one quick thing?

Robynne Sure.

A.G. There’s a program in our state called “A Garden in Every School,” because we recognize that there is a school in every garden. And if the kids grow it, they will eat it. So this idea that kids don’t like to eat vegetables, that’s not true – that they’ll eat it if they grow it. So I just wanted to add that. Thanks.

Robynne Great. Such inspiring thoughts. Turning to Gina, we have another person who has been a real leader about bringing youth into the agrifood sector. And, Gina, we’d like to hear from the Mexican perspective a little bit, about what dairy role can you as a dairy farmer play in helping to increase food, affordability and availability and sustainability in the context of nutrition.

Gina

Thank you, Robynne, and just one note following A.G.'s last comment about gardens in school. I think it's a great initiative that can be replicated globally and as other programs designed globally but implemented locally and small misma. And those kids that will grow some food in their schools are learning a lot. And they're learning about life, because here in this panel we have nutrition and some farmers like myself and Patience and Jen and A.G., farmers take care of life. We are taking care of the life of our livestock every day, the crops that we grow, the soil they grow on, and other natural resources. For those kids to learn how food is produced, they're learning a lot about life, because we're also taking care of the life of the people that eat that food that we produce. So thank you, A.G., for bringing such a great example to the table.

And from a dairy perspective, just as other animal proteins, milk is a natural powerhouse. It is wholesome and also affordable and always available. We work year round to bring milk every day to as many houses as possible. We have six billion people consuming milk every day or dairy products like cheese, butter, cream, even ice cream. And it's a powerhouse, nutrient dense that will nourish especially young children and especially women that are lactating or are pregnant and older people that have special nutrient needs. So milk can be part of a healthy, balanced diet through all stages of life. It is also one of the least wasted foods in the world. And farmers like myself who work very hard to make this possible, we work very hard every day in our farms to make sure that we produce high-quality milk that is safe for everybody to drink. And we work with processing plants, whether you're part of a co-op or a social program like we have in Mexico. There is a state-owned company that has a double social function – it buys milk from local producers, takes it and processes it, and then sells it to the wider population and has around 12,000 selling points, which gives a lot of people in every corner of our country access to safe, affordable milk. And in my co-op we look directly with the local government where we process our milk, package it, and distribute it, especially in schools, making it part of school meals. And then it also works with community diners so that low-income people can have access to a healthy meal that includes milk. It is proven that school meals and community diners where people go to have a meal, they're more likely to get more nutrients if they didn't have access to those prepared meals.

So dairy can be part of our diets in a very sustainable way. We have worked as hard as we... Just like Jen has in the pork livestock sector, dairy farmers have also worked tirelessly to work in a more sustainable way. Dairy emissions in the world have been reduced by 11% in a five-year period, and we're working to do even better. So milk is a powerhouse – animal proteins, you know, we need them in our diet, especially young kids to help them develop and achieve their best potential.

Robynne

Fantastic, Gina, and great to hear about the role cooperatives can play in providing this double access and double role in the system. Next, I'm going to introduce one of the stars of our panel, and this is a powerhouse panel. Lawrence Haddad is known to many of you. He is the head of GAIN and also of course was leading Action Track 1 through the Food Systems Summit. Lawrence has been a thought leader in this space and is a past World Food Prize Laureate.

Lawrence, we've heard from this extraordinary range of producers talking about everything from fish to vegetables, livestock. We heard about bread from Dr. Lal. What's the role for these diverse diets? How do we leverage some action to get people the nutritional needs they have to have?

Lawrence Thank you, Robynne. I must just congratulate the World Food Prize Foundation. What a fantastic panel we've put together. It's really, really impressive, and I'm really learning a lot from listening from everyone.

To create diverse diets, you have to look at the whole food system, and what's at the core of the food system in any country is the private sector. And when we talk about the private sector, I'm talking about some big monolith here. When I talk about the private sector, I break it down into eight blocks. I like tables – those of you who know me, know I like tables. So think of a table with two columns and four rows. Two columns are food companies and nonfood companies. Remember, there are lots of nonfood companies that are absolutely vital for the food system in transport, refrigeration, marketing, advertising, finance, you name it. Then think about the four rows – which are large multinational corporations, which many of us think of as the private sector – but there's also large national corporations, small and medium corporations. So think of the private sector in that eight-cell grid. I'm going to talk really about small and medium enterprises in food and nonfood. Why? Because in the countries that GAIN works in, in sub-Saharan Africa and South and Southeast Asia, small and medium enterprises are the businesses that are responsible for delivering 70% of all food consumed in those countries. And for the lower-income, more vulnerable populations, more vulnerable to malnutrition and other sorts of vulnerabilities, it's even more than 70%. So what do SMEs, small and medium enterprises, need in order to do more for nutrition?

Well, first of all there are these three things. They need the right policy environment. They need governments who are going to reward them for doing the right thing and punish their competitors for doing the wrong thing. So governments have a large array of tools in their policy toolbox. They can do all sorts of things in the fiscal space. They can subsidize the production and consumption of certain foods, and they can tax those foods that are not healthy or are generating large environmental negatives. They have trade policy, which they can again calibrate to promote the supply of safe and nutritious food. They have food safety standards that often don't apply to informal wet markets, which create opportunities for companies and small and medium enterprises that are less scrupulous about food safety. There are fortification standards that need to be adhered to. So governments have a big role in creating not just a level playing field to business but a playing field that's uplifting. And one example of documenting this is something that GAIN has been doing with the SUN Business Network called EBANI, which is an index that helps governments understand how they are enabling businesses to accelerate nutrition.

The second thing they need is network support. Businesses, it's a hard thing being an entrepreneur. It's a lonely job. It's a tough job. Everything is on the line. For those of us who are not entrepreneurs, we can make a mistake, and we're probably not going to lose our job. But if entrepreneurs make a big enough

mistake, they will severely damage their livelihoods. So they need support. They need a community of practice. They need to share risk. They need to learn from each other. They need someone. They need a mechanism that's going to give them a voice, a collective voice. And again the SUN business network is a really good help with that.

The third thing is finance. Most of the small and medium enterprises are too big for microfinance, sort of the \$50 loans, the \$30 loans, and they're too small for formal finance. A formal banking system won't take risks on these companies, so they need innovative finance. GAIN and others are developing a Nutritious Food Financing Facility, they call it, N3F, which is an impact investing mechanism to get funds, loans and equity to small and medium enterprises that are supplying nutritious food. We've got them in the climate. We've got them in our livelihoods. We've even got them in gender. But we don't have them in nutrition.

One final point, Robynne. For this to happen, for these kinds of innovations to happen, the public sector donors really need to innovate. Now, USAID, the Dutch Government, and the Irish Government are there. But many other public sector donors are not there. They think that catalyzing the private sector, or risking the private sector is kind of money down the drain; because they might not get that money back. But what they get back is ten times the amount of that money from the private sector, and that's the thing that's going to generate the massive impact.

Back to you, Robynne.

Robynne Thank you, Lawrence, for really highlighting the power of how to expand and exponentially grow the interventions. Because we have a panel full of SMEs in many cases, many eminent academics, but also many people who are exactly the examples that you were talking about who have that power to multiply.

Speaking to this funding question, Naoko, could you come in and talk a little bit about what you think needs to be done around some of these funding questions for nutrition?

Naoko Thank you very much. I would like to continue the same kind of discussion Lawrence has already done, but I would not point out three points. One is efficiency of using resources, especially financing resources and also the role of the public sector. So the food system is complex and multi-dimensional, so we need to identify the action that's a multiple need in a so-called double or even triple duty action. For example, like public financing for years in school hospital campaigns. can help promote the healthy sustainable diet but support local small scale producers. Likewise, taxation on healthy food systems like high sugar and salt can improve the diet of the population, but more resources will bring more resources to the government, also benefit the producer of vegetables and fishes and more healthy diet producers. So, for example financing or facilitating clean water and hygiene, local markets can work for the trade of fruits and fish and could support small, medium anti-freezers and take a positive role for nutrition.

The second point is innovative resources. Mobilization innovative resources, Mobilization especially for vulnerable people including children. So, a couple of

but for example definitely we need more resources for the people. For example, matching funds between money from local national money and international funds to improve access to healthy food for variable population cooperation may be one example.

Final point as I would have to talk about investment of human resources has professional veterinarian or leaders of the farmers or fisheries or producers and processors. That's crucial, they have a crucial role but most importantly empowerment of the community and the consumer is a key, I think let me stop here. Thank you.

Robynne Thank you, Naoko. Absolutely we need to delve into all of these things. So we also talked about the private sector. Jennifer, as one of the private sector representatives on this panel, what do you think the private sector needs to do to innovate more to invest in nutrition?

Jennifer Yeah, I'd like to reflect for a minute on Dr. Borlaug. He was raised in Cresco, Iowa, a small farming community up in Northwest Iowa. We're very familiar with that company, and I know many, many farmers throughout Cresco and Howard County. You know, as someone who's a pork producer, a mother, I was also raised on a crop and livestock farm in a similar small farming community. We take great pride in our fellow Iowan. In fact, we use his words on our farms all the time, because they hold so true. As we're breeding and weaning pigs, we say there are no miracles in pork production, there are no miracles in production agriculture. But as pig farmers we push forward every day in a unified and noble mission to care for the animals that feed a hungry world and a growing world in need of animal protein. And we rise to that challenge, and we're committed to producing more nutrient-rich pork with less resources.

And so I know the private sector. I'm a part of the private sector, and farmers or packers or processors or retailers, we are all committed to ending food insecurity. In fact, Iowa Select Farms alone will give back over \$2 million dollars this year in pork to our local food banks, our community shelters, our women's shelters, our children's shelters, and at-risk children in our schools. And as an industry, we're currently working on collecting industry-wide metrics of our giving, so we can have goals and get better in this area. So this commitment is so strong throughout our entire food chain. We know it's the right thing to do as farmers and as global citizens, and we're committing to doing even more to advance the efforts of ending food insecurity.

Robynne Thank you, Jen, and it's great to know that you're making that extra investment into food banks. We've heard a lot about school feeding, about food banks, about the way that we can fuel these systems right from the production side. And it was also great to hear you mention these farms. You know, you might be talking about pork, but as you grew up on a mixed farm, many farmers including those on this panel, are growing a diversity of products. So that diversity needs to be reflected in the plates that we're dealing with.

As we begin to approach the end of our time together, I'm hoping to come back to each panelist and really hone in on a call to action. We heard today clearly about

the fact that all of this begins at a planetary level with our soils, with our oceans and treating them respectfully and that we have a one health approach if we want the outcomes we want, which starts right from our soils and oceans and goes all the way to the health of the people who are being fed – and creating more systems around that is really clear. And we also heard from our producers about the ways in which they can be engaged in processes that lead more directly to nutritional outcomes.

And I think one thing that we also heard touched upon several times is the importance of child and maternal health. And as we go through our concluding remarks, I'm actually going to call on Shawn and Naoko first to just come back to some of that framing about that importance. Shawn, if you were to make a call to action, one single call to action in one minute, because we don't have much time to get through this eminent panel, what's the thing we most need to do on nutrition?

Shawn Thanks so much, Robynne. Actually, I was very struck by Patience's remark about – we have a huge number of tools. The crisis of malnutrition, because of the pandemic we risk to lose decades of progress, if we permit maternal and child nutrition to continue, we are undermining the future of our society. We have a huge number of tools, and it's not that everybody needs to deploy every tool everywhere; but every institution should look in that toolkit – which are the ones I can advance? And with the Nutrition for Growth Summit coming up December 7th and 8th, this is our big moment for nutrition, that institutions across the globe commit to concrete action with the financial and policy commitments. So my one call to action is to take this Nutrition for Growth Summit as a huge opportunity to commit to what each one of us can do to accelerate progress on eliminating maternal and child malnutrition. Thank you so much.

Robynne Thank you, Shawn, and you were super respectful of the time. Let me just come back to you and ask you a little bit more about the Nutrition for Growth Summit for one moment, because you've got the banner behind your head on the screen. Tell us a little bit more about when it's happening and how people can get more engaged.

Shawn Right, so you can go online and just look at Nutrition for Growth. This is the big replenishment moment for the nutrition community, recognizing it's a horrendously under-resourced sector. And as of starting in 2013, it's been a global effort to try to increase both investment in and political commitment to nutrition action across the health system, the food system, and in fragile settings and humanitarian settings. And so there's a place for everybody there. It's being organized this year by the government of Japan and Tokyo. It'll be an all-virtual event. The registration forms are up. The accountability framework is up. And it's for our partner governments, donor governments, private sector, civil society organizations, U.N. organizations, really everyone to come together to say – this is what I can do to nutrition, I commit to do it, and I commit to it in this timeframe.

Robynne Brilliant. Now, one of those things we probably want to commit to is child and maternal health. Naoko, we've heard several references to it. Do you want to just

bring home, before you move into your call to action, some of the scope of that challenge?

Naoko Thank you. So in my closing I'd like to say that we have to truly have people in the center, which means that we need to focus more on cooperation for the vulnerable and their security but also, I'm not talking about the current generation. We need to think about future generations, so people should be included in future generations. And that is why we need to focus on vulnerability and the fragility of our planet and ecosystem. We talked about it during this session. So, food should not be the cause of diseases or our food production should not grow on the burden of emerging infectious diseases. That is why in today's dialogue, marrying sectors and cooperation is crucial, and in nutrition we will monitor and create data for the shared reality for all people to move ahead and to work together. Thank you.

Robynne Thank you so much, Naoko. Let's turn now to some of those producers we were hearing from. Patience, you obviously left a mark with your comments about indigenous foods and about getting products right on the ground. Nigeria is amongst the countries that's been facing some real challenges on its food security. Let's hear from you. What do you think we need to do most to really make a difference?

Patience Thank you, Robynne. I think that for me is urgency, urgency, urgency. There's a need to truly, truly get boots on the ground and move from talk to action. So for me, what I would say is – let's go forward from all of this conversation, the U.N. FSS, all of it, right? Let us use everything that is available. We were able to develop the vaccine in less than one year. We deploy, too, to make sure that we can improve production, and we can also improve crops to be able to improve nutrition. Food security is intertwined with nutrition security. If we can get our food production up, in countries where people cannot afford good nutrition, improved production of food, find all the tools that are available. There's no silver bullet, no one size fits all. Tailor each solution to each country, and let's get the solutions out there and get more people eating nutritious foods. Thank you.

Robynne Thank you for that energetic call to action and bringing it back to the country level, right, to get that context considered is so important. Gina, how about you? What's the call to action?

Gina Two that link together in small mismal, you know, tailoring every solution to not only country level but very local level. Because, for example, Mexico, not the north part of Mexico, which is very dry – it's completely different from the South, and it's very humid. We do have tropical forests. And you go to Central Mexico, and even the central part of Mexico, there is highlands, there are lower parts. So aim small, mismall. And the second one is talking about health and life and food production is our health services. So in Norman Borlaug's words, *Take it to the farmer*, because farmers are key to producing that safe, affordable and nutritious food that will nourish all of our lives. And to do so, farmers need access to technology, information and finance.

- Robynne** Fantastic, Gina, and didn't they do an amazing job at the Foundation, pulling together a panel like this and including farmers. It's so rare to have a nutrition panel and see farmers represented, so I love that point. Jennifer.
- Jennifer** Yeah, I would really echo what Gina just said here as my fellow dairy farmer. You know, again over the past 50 years, pig farms have knocked it out of the park when it comes to reducing carbon emissions, less land use, less water use, doing more, producing more affordable nutrient-rich protein with less, while being sustainable. So we will continue to do that. We're going to get better. We're not done. We're going to keep moving forward. We're going to build those metrics of giving back, our donations, our commitment to ending food insecurity across our rural communities and across the globe. And I think you'll see big things from pork producers in the future. Our commitment is strong. We're committed to being responsible producers. And we're committed to doing more with less.
- Robynne** Thanks so much, Jennifer, and thank you for thinking concretely about having metrics and actionable items. A.G., you are talking about the diversity of diets so effectively. How do we get production to reflect that diversity of diet better? What's your call to action?
- A.G.** Well, I would just like to echo what Patience said, is that all – whether you're farmers, ranchers, fishermen – we're all part of the solution set here. And whether you're big or small, everybody has their role. As Gina mentioned, small and big, everybody can suddenly start to focus on the goal of this urgency of ending hunger in our time. And ending hunger means also ending nutrition insecurity. And the urgency is, every day that goes by that we don't do that, someone is being stunted, some young person is stunted, some life is being ruined, some mind is not being developed. And how is it possible in 2021 that we haven't accomplished this very simple goal of feeding everybody on our planet? And as difficult as it seems it might be, it's not. It goes back to the will to make it happen, because we certainly have the capacity to do it. So reinvigorating a landscape, and so whether it's getting a large producer to suddenly realize he can dedicate a certain amount of his products into a food bank system, or whether you produce the food directly for the food bank, whether you activate the FFA chapters all around the country and have them start to grow food for the schools or for their own school or for their local food banks. Whether you realize that an abandoned property or vacant lot is a landscape that is just waiting to be invigorated with a new collaborative, innovative strategy.
- And so I think the call to action is this: No more think tanks. You know, we've been thinking about how to end hunger on this planet for a long time. Let's just get a "do tank" attitude together, and region by region and area by area – which area is going to raise their hand and say, "Well, we don't have a nutrition insecurity in this state or in this region or in this country."? And I think that's how we start to accomplish it, because when someone does it, I think everybody will be starting to move towards that direction, that – well, if they can do it, we can do it too. And that goes back to scalability and the replication of all the positive things that have already been done that are proof of concepts, that this is not inventing something new, this is just realigning what it is we want to get

accomplished. So thanks again for this, bringing producers to this discussion; because they are the solution.

Robynne They are, and we need every one of these, all these different types of producers in all these different places to get that food onto people's tables. Let's pivot now to our three eminent laureates sitting on this panel. Shakuntala, first of all, again congratulations from all of us on the panel for your win. We're all so very proud of you. And it's so thoughtful of the Foundation to think about including new foods in this Prize founded by Dr. Borlaug, founded on the land but that it includes the whole of the food system and someone with your nutrition background. We have a couple of moments. We'd really like to hear from you about what you think the call to action should be.

Shakuntala Thank you, Robynne. If I go back to the U.N. Food Systems Summit, we've had two years of deliberations, dialogues. And within those two years, we've also put together the evidence on aquatic foods, and we do know that there can be no transformation of food systems, food, land and water systems without the inclusion of diverse, nutritious aquatic foods, which are superfoods. So I will call for this action, and there are multiple benefits, as I said, of this within the food systems. And if we would look at the commitments and the investments we need for research, innovations, let us give one example. We do know that these foods come in as superfoods with multiple micronutrients, and we said that fact, yes, but as yet no one has looked at the science and the evidence for the bioavailability and absorption of micronutrients on the plate and the roles that the diverse aquatic foods play in increasing this absorption. Think, for example, the plant source foods. If you can increase the minerals and the vitamins in plant source foods, which make up the large part of the plate and perhaps double this absorption, we are going to get at a much greater stage of nourishing our nations, nourishing our people. Thank you.

Robynne Thank you so much, and I think that is something we heard several times across the range of this panel, is we heard those references, not just to the diversity of diet in all the different types of food we talked about from amongst the different producers, but we heard those words "micronutrients" several times. And you really introduced that point about bio-absorption. I know, Dr. Lal, that there have been some extraordinary efforts to look at the role soils play, for instance, in zinc uptake as a micronutrient example. And zinc is so critical to the health and wellbeing and the development of human beings – you can't really make up for that zinc deficiency, as I understand it, if you don't get it early in life. And we know that soils are a central part of that, and we know that aquatic foods are probably an essential part of the bio-absorption of that. What's your call to action, Dr. Lal?

Rattan Thank you so much. I first want to really congratulate Shakuntala again for her role in blue food, and I'll come back to that in a moment. I have six specific calls to action. Number one, we have a Clean Water Act, we have a Clean Air Act. You can never have clean water on the earth unless you have a healthy soil. It is time for a Healthy Soil Act in the farm built in 2023. I hope it will happen that the U.S. has set an example for the rest of the world.

Second call for action is very close cooperation within the private sector, academic community, policymakers, and the farmers and ranchers, especially so in developing countries, whether it's machinery, it's fertilizer, whether it's crop varieties, and the private sector has to play a major role. Many times we cannot talk about payment to farmers for ecosystem services. It can never happen from the government. It may only happen from the private sector. I cannot overemphasize the importance.

Number three – education. Education about health nutrition, where the food comes from, what are the environments, all air water components to children from the primary school onward. Right from the very beginning, our curriculum needs to be changed in favor of the one health concept, in favor of the importance of natural resources.

Empowering farmers, especially the women farmers, empowering them through payment for ecosystem services, providing them with the facilities that they need to remove the drudgery from the agriculture profession. I can never forget babies tied on the back and women bent down weeding making heaps somehow agriculture. Somehow the agriculture profession has to be respectable and given dignity by removing drudgery and empowering the farmers, especially women farmers.

Over 19 has taught us to strengthen the local food system – very important. That may bring me back to urban agriculture. That may bring me back to aquaculture by recycling water coming into the city's wastewater producing local food. Fifteen to twenty percent of the food eaten within the mega cities could be produced within the cities by research.

And finally, let us think about soil, less agriculture. Soil has many other uses beyond agriculture. I cannot even count them. In 2100 rather than 95% of the food coming from soil probably no more than 50%. So, less agriculture means blue food will clearly become more important. and while I'm talking about the blue food and soil less, I must also mention the new carbon, carbon in oceanic and coastal ecosystems plays a pivotal role in moderating the global carbon cycle. And the coastal ecosystem, their health is directly linked to what is done in the uplands – that is where the pesticide herbicides sediments nutrients, that's where the anoxia and the hypoxia come from. And that's all before calling for action amongst the member nations of the United Nations. We make slogans but the time is now.

Robynne Thank you. The time is now. Dr. Lal, there's a reason why you received the World Food Prize for your passionate work on soils. Now, on to our last laureate on this panel. Lawrence Haddad, please bring us home. Tell us what we need to do to make nutrition a reality.

Lawrence Thank you, Robynne. It's hard to go after so many amazing speakers. Thank you for giving me the opportunity.

So first point – creating nutritious food systems, and that's the title of this panel. It's not an easy win. As Dr. Lal and Dr. Thilsted said, we have to start creating

healthy soils, healthy oceans, rivers, lakes. We have to go through healthy animals, healthy business models, and all the way through to healthy gut flora. So it's not easy to do. We've got to do all of those things. We've got to align everything. A.G. said it's about alignment. We need to align all of those actions. But, you know, enduring, fundamental change doesn't happen through easy wins. It happens through transformative change. And if we can make food systems become more nutritious, that will be very transformative. Why do we need transformation? We need transformation because of some of the statistics that have been shared here. Shawn reminded us that three billion people can't afford a healthy diet; 80% of kids under the age of five don't even have a minimally acceptable diet. These are just outrageous numbers. These are indefensible statistics. They're indefensible, they're unacceptable, and they're outrageous. So we have to somehow channel this outrage, and this is where Patricia and Gina and A.G., and Jen – very practical suggestions. Let's get from talking to action. And actually each of us can play a role, no matter how big, medium or small we are.

So to achieve that transformation, we all have to change. We all have to change our mindsets, our partners, our business models, our organograms, how we organize ourselves, our research, our metrics, and of course the action and critically the investments. We must. I'm a big believer that there's enough resources in the system – they're just not aligned properly. The incentives are all wrong. And we get the outcomes our incentives design. We need to change the incentives, align the actions.

And we need to do this Robynne, this is my last point. We need to do this because our bosses, Who are our bosses? Those who are malnourished and those who are at risk of malnutrition. They deserve nothing less. Conflict, climate and COVID are conspiring against them and against us, and we must not fail them. As Shawn said, the next test is Nutrition for Growth. And Naoko also said this – Nutrition for Growth. In six weeks' time let's rise to the occasion, colleagues, everyone listening, people you know – they need to all rise to the occasion and make powerful commitments for the present but critically also for the future.

Thanks. Back to you, Robynne.

Robynne Thank you so much, Lawrence. We're at time, and we couldn't have had a better wrap-up call to action. Six weeks to go 'til Nutrition for Growth. We need to fund small, focused, diverse, healthy diets. Thank you to this eminent panel. Congratulations to Shakuntala as our new laureate. Many thanks to Barbara Stinson and the team at the World Food Prize Foundation. It's been an extraordinary discussion of nutrition, and it flows perfectly into international cooperation in the roundtable ahead. Thank you all.