

DIGITAL DIALOGUE #3:

LIVE WITH THE LAUREATE

Thursday, June 11, 2020

Barbara Stinson

President - World Food Prize Foundation

Welcome, everyone, and greetings. Thank you so much for joining us for the third live World Food Prize Foundation Digital Dialogue. As you just saw in the webcast, Dr. Rattan Lal's lifetime achievement and innovation have earned him recognition as the 2020 World Food Prize laureate. Today we offer a special opportunity to meet Dr. Lal if you haven't met him already, to get to know him.

Later this year, the week of October 12th, we will fully honor his achievements at the renowned World Food Prize Award Ceremony – but more to come on that. By the way, you can now read more about Dr. Lal's background on our website at [/2020Laureate](#).

I'm so pleased to have almost a thousand participants register from around the world for this event, including several of our past World Food Prize laureates. Thank you for coming today. We welcome your questions. We encourage you to submit them in the form that's on the livestream. We'll share your questions with your laureate, and we'll feature answers in future programming – we won't really have time today. Also, as we proceed, share your thoughts on your favorite social media platform at #FoodPrize20.

We're very fortunate to have two very special speakers today. First, let me introduce our interviewer. Dr. Gebisa Ejeta is chair of the World Food Prize Laureate Selection Committee. He's also the 2009 World Food Prize laureate. Dr. Ejeta is Distinguished Professor of Agronomy at Purdue University. He's taught there since 1984.

He received the 2009 World Food Prize for his work to develop sorghum hybrids that are resistant to drought in the devastating weed, Striga. His work dramatically increased the production and availability of food for hundreds of millions of people in sub-Saharan Africa. Now I'm going to hand it over to you, Dr. Ejeta, to introduce our 2020 laureate.

Gebisa Ejeta

Chair, World Food Prize Selection Committee
2009 World Food Prize Laureate

Thank you, Barbara. Good morning, Professor Lal. I have to tell you, it was a huge pleasure and honor, for remembrance of this Selection Committee to receive and evaluate your nomination documents.

On behalf of the members of the Selection Committee that gave you unanimous support and the World Food Prize Council of Advisors, who endorsed and approved our selection, I extend our warmest congratulations to you, Dr. Lal. And this morning it's indeed a great pleasure again for me to sit down on this one-in-one conversation with you on our Digital Dialogue *Live with our Laureate*. I know that this is not the first prize you received. You've been recognized widely from many organizations in receiving prizes and awards.

But I'm also aware that you fully know the history of the World Food Prize and reputation. Now as the story goes, it was founded by Dr. Borlaug, but his first attempt was when he received the Nobel, he tried to persuade the Nobel subcommittee in Norway if they would establish a Nobel Prize for Agricultural Scientists. When that was unsuccessful, he went on raising private funding and established the World Food Prize. When successfully doing that, the first recipient of the World Food Prize was Dr. M. S. Swaminathan of India, who was the compatriot of Dr. Borlaug in the campaign for Green Revolution in Asia. Since then, 49 other high-achieving men and women have received the World Food Prize – that's including you.

And so over time, as a result of the hardworking World Food Prize Foundation staff and the reputation of these 50 laureates, The World Food Prize today is recognized as the Nobel of food and agriculture, though that's not its official name.

So I know that you haven't had much time to dwell on this, but my first question to you is – what does receiving the World Food Prize mean to you and to your work?

Dr. Rattan Lal

2020 World Food Prize Laureate

Thank you, thank you, Dr. Ejeta. First of all I want to thank you, I want to thank Mr. Mike Pompeo, the U.S. Secretary of State, and to Sonny Perdue, the U.S. Secretary of Agriculture, and, of course, Ms. Barbara Stinson, the president of the World Food Prize Foundation.

I'm grateful for God for the blessings and benevolence and thankful to those who made this dream come true, including my alma mater, The Ohio State University and President Drake who nominated me. I want to thank all those who helped me – my wife and family, especially U.S., Canada, India, and supporters from around the world. In addition, I must acknowledge thankfulness on my part for the past and present staff, students, rising scholars, and post-docs of the Carbon Management & Administration Center of the College of Food, Agricultural, Environmental Sciences.

I must thank the World Food Prize Foundation for making me the 50th member of this elite family. During the various speeches here, which is also the 50th anniversary of Dr. Borlaug receiving the Nobel Prize, furthermore, is the 150th anniversary of The Ohio State University.

I have a few additional points:

- 1) Receiving the World Food Prize reaffirms my very strong belief that the noble task of research and teaching of soil science and agriculture is a world-class profession second to none. And that has been the basis of my soil-centric approach.
- 2) Secondly, I must acknowledge, though, that the daunting challenge of advancing global food and nutrition security remains to be a work in progress. For example, there are 850 million food-insecure people around the world and 2 billion people suffering from

malnutrition. Of the 850 million, 40 million are in the U.S.; almost 200 million are in India. Of the 40 million in the U.S., 11 million are children; 2 million food-insecure are in Ohio, of which half a million, 1 in 5, are children. Even one child going to bed hungry is one too many and not acceptable. Therefore, Dr. Ejeta, you and I and others have our work cut out for us.

- 3) Thirdly, I must indicate that this problem of food insecurity has been unfortunately aggravated by the COVID-19 pandemic. And this pandemic makes us rethink that we should focus on undertaking initiatives that strengthen the local food production system, creating resilience in the local food system. We must increase the awareness of the importance of soil health and each, in turn, producing healthy and nutritious food.
- 3) And finally, we must focus on making agriculture a solution, not going to a food nutritious security but also addressing environmental issues.

Thank you for a very good opening.

Barbara Dr. Ejeta.

Dr. Ejeta If I may, I want to assure you, in addition to the awesomely humbling feeling it leaves you, the World Food Prize offers great opportunities for personal growth and provides a huge platform and voice for serving a much greater societal call that may be near and dear to your heart. I know that to be true from my own experience – I've watched it happen for me and as well as other laureates gone before me and those that followed me. If I may add an additional, unsolicited advice, the opportunities are going to be many, the demand is going to be high. My friend, I advise you to brace yourself.

That was wonderful about your story. Moving to your story of your work, you may have some conversation there. I've followed your career since your days at IITA in the 1980s. At the time, you as an Indian were working for the CGIAR Center in Africa, I was working for the CGIAR Center in India. And I have watched your career expand and rise and how, over time, your research in soil science has risen in its relevance as well as in its impact. In the early years, you focused on improving soil structure, both as a conservation measure and for cooperatively enhancing soil fertility. Over time, you moved to the emphasis on soil health, soil organic matter buildup, and to organic matter sequestration. And more recently, your advocacy in soils as a carbon sink has been widely held. Could you share with us how your experiences in the past, recognizing that you've worked in all 40 countries in varied ecologies and varied soils, how these experiences, these environments, as well as global events may have guided you, your research decisions and your research school and direction?

Dr. Lal Thank you, Gebisa. Thank you for also bringing the commonality between our two backgrounds, me coming from India working in Africa, and you coming from Africa working in India. That's an excellent background commonality.

I started my work, in fact, at IITA in late '69, early '70, and I was on a steep learning curve. I realized from the very beginning the tremendous challenges in maintaining

soil physical health, high soil temperature, serial soil erosion problem, low plant available water holding capacity, causing drought and problems even a few days after rain, soil known for crusting, compaction, and hardsetting and very, very rapid depletion of soil organic matter. That did not help increase the use efficiency for inputs such as fertilizer, because the losses by erosion volatilization, leaching were tremendous. The challenge was – how can the soil health improve so that the potential improved varieties as developed by you, Dr. Swaminathan, Dr. Borlaug, could really realize their potential? So I came up with the concept of NPK fertilizer maintaining soil health, especially soil physical health, was a very critical thought.

The last thing I have learned from that work I've done in Africa was famine and hunger and drought was caused more by land misuse and soil mismanagement than by the cause of nature. Therefore, something could be done about it.

Dr. Ejeta If I may ask this specific question here, your approach – the soil-centric approach over time – do you remember when exactly you realized that this approach not only be a leading light for your soil science research but also could be useful in making a credible case for soil as a carbon sink in mitigating climate change?

Dr. Lal Oh, thank you again. You're a very nice person. I must recollect here the contributions from Dr. Borlaug, Dr. Swaminathan, you yourself, Dr. Ejeta, Dr. Gurdev Khush, Dr. Rajaram, many others who brought in the so-called Seed-centric Green Revolution. It was a miracle era of the '60s and '70s that saved hundreds of millions of people. But there was a problem that Sub-Saharan Africa, for example, where I was based, bypassed the Green Revolution, the Green Revolution also stagnating in South Asia and as we're having severe environmental issues.

So it occurred to me while at IITA that there is a need for reconciling the demands of humanity for food and nutrition with the absolute necessity of improving the environment – and that can only be done by having a complementary approach on soil-based issues, which I call *soil-centric approach*. And my article 2004 in *Science*, which almost has 5,700 citations at the moment and more than 20,000 downloads of the abstract, was based on that concept. And the article I wrote as President of the Soil Science Society of America on the Ten Tenets of Soil. So, this idea of seed-centric was really complementary to Europe or to seeds-centric coming right from the mid-70's.

Dr. Ejeta Thank you for that. Your citations are extremely impressive. In addition to your excellence in research, you have been wonderful in your advocacy work, translating the results of your research through political action. And in so doing you've been very strategic building communication channels for the scientific community as well as for policymakers. Reflecting on this experience, what would you say may have been the challenges and opportunities in these efforts, for you?

Dr. Lal Oh, thank you. Thank you, Gebisa. Again, a very good point. I believe that, unless science is translated into action, it's not complete. And that has been the challenge for me to convince my peers and colleagues in soil science and other basic sciences that we have work to do which does not end with publication of our research into a peer-reviewed journal. In fact, it is complete only when it's translated into action and adopted by the public – and that translating into action requires strong support from

the policymakers, and that's an important part that we have to try to convince the scientific community.

At the same time, with the policymakers I have had a big challenge convincing them – and I have a great honor to work with many of them around the world – that the biggest and the most powerful weapon of mass destruction globally is hunger and malnutrition that kills globally 90 million people, 90 million. And that is the biggest weapon of mass destruction, and that is what requires farmers. It translates to 17 deaths every minute. In this 30-minute dialogue, there will be about 500 deaths – and yet it's not a newsworthy item. And that needs to be changed through education, through communication.

But there are opportunities, many opportunities. COVID-19 offers us opportunities to think about those concepts as well. I think bringing, in addition to policymakers, some religious organizations to also help us promote the concept of stewardship of natural resources. From that point, even Einstein has felt that *science without religion is lame, and religion without science is blind*. He also said, *God is a mystery, but it is really a comprehensive mystery*. I agree with both of them. Acting at this juncture, we need the help of policymakers, general public, and religious leaders, so the soil community should seize the moment to really move forward with those concepts of translating science into action.

Barbara Tremendous points, and at this point I want to interject an opportunity. We have two special video messages that we'd like to offer. As we've already heard, Dr. Lal is our 50th laureate, and we have many alive and still well of all of our laureates, and many have passed. But we have the honor of having our very first laureate still here and with us. Dr. M. S. Swaminathan and his daughter, Madhura Swaminathan, have put together a video that they'd like to share with you.

VIDEO

My father, M. S. Swaminathan, was awarded the first World Food Prize in 1987 at a ceremony at the Smithsonian Institute in Washington. He used that money to start the M. S. Swaminathan Research Foundation with the objective of addressing the problems of sustainable agriculture development of India's most vulnerable farming communities, small farmers, fisher folk, people in tribal areas, and other distressed locations. One of his early concerns was trying to understand the impact of climate change on agriculture. And it is wonderful to know that the 50th World Food Prize laureate will be Dr. Rattan Lal, that his work on soils speaks very closely to current problems of climate change.

[Dr. Swaminathan] And I'm really happy that the 50th World Food Prize is being awarded to Dr. Rattan Lal. Dr. Rattan Lal is a transformation agent. He made soil care and soil protection as a major responsibility. I think it will be a great occasion to honor Dr. Rattan Lal because he is a crusader for soil health just as Dr. Borlaug was a crusader for plant health and plant protection. I wish him a very great success and I particularly congratulate a very dear friend and guide, Dr. Rattan Lal. He will always be a source of inspiration to all of us. Congratulations, Dr. Rattan and all the best for your continued service to the world of agriculture.

Barbara A wonderful message. Gebisa, back to you.

Dr. Ejeta I assume that over the years your work was with Dr. Borlaug and Dr. Swaminathan. It seemed to me, Rattan, your durability as a scientist and your persistence and relentlessness, your career really copies both Borlaug and Swaminathan. And I wanted to ask in what ways these two giants' influenced your thinking and approach in science for development over the years.

Dr. Lal Thank you, Gebisa. First let me say how honored and privileged I've felt by listening to Dr. Swaminathan, whom I have known since 1963 when I was a student and he was a department head. So it's a great honor to hear from him. Dr. Swaminathan, Dr. Borlaug, you, Dr. Khush, Dr. Rajaram, and many others adopted a philosophy of total human well-being. The idea is that we have a vicious circle of poverty, land misuse, soil mismanagement and environmental degradation, hunger, malnutrition, desperateness, more poverty. Plant breeders like Dr. Borlaug, Dr. Swaminathan, yourself, used a seed-centric approach as an entry-point. I use a soil-centric approach as an entry-point to break into that vicious cycle of total human development and well-being, and at the same time, restoration, improvement of planetary health and environmental quality. And I think there's a lot of similarity between the two.

At this point I should also mention that, following the concept, I wrote an article in 2013, "Soil and Sanskriti," which means soil and civilization. Soil World Peace Nexus in 2015, and Soil and Sustainable Development Goal in 2018. So the soil-centric approach really has a broad-based concept, overall solving the humanity while also restoring the health of the planet for generations to come.

Dr. Ejeta Thank you for all those comments. Believing that you may have been influenced by those before you, enlighten us now, what messages you may have for the generation that follows – that they take over the mantle and mission of feeding humanity, conserving natural resources, conserving the planet.

Dr. Lal Oh, thank you so much. I'm really grateful for the privilege and honor to have this opportunity to address the scientific community and the general public and some of the points that I'd like to leave, something based on my personal experience.

Number one, to recognize that people are a mirror image of the land. When people are poor, poverty-stricken, hungry and miserable, they pass on their sufferings to the land – and land reciprocates. And this realization, that the land and people are closely connected, is very important. And as a result of that, it's important to realize that when people are hungry and desperate, that problem also creates the fanaticism and extremism and whatever-else "ism" that our society is sometimes plagued with. And this hunger misery can only be quenched by a loaf of bread grown from grains on a healthy soil. And that link is very important. And the third point I'd like to mention is that the Sustainable Development Goals of the United Nations. Goal #1, end poverty; Goal #2, zero hunger; Goal #3, water quality and sanitation; Goal #13, climate action; Goal #15, Land Degradation Neutrality. These goals must be put on the track for achieving in 2030 by looking at the soil health – restoring the soil health.

Fourth, soil is a living thing – it is in fact the largest reservoir or terrestrial biodiversity. Some people believe 25% of the biodiversity is in soil. If soil is a living

thing, then soil, like any other living thing, must also have rights, rights to be protected, rights to be restored and rights to be managed judicially, simply does not mean that one can do with it whatever they wish. And that is a very important concept of soil and nature having their rights. I am pleased to read sometimes the encyclical of Pope Francis who really very much supports the stewardship of natural resources.

The fifth point I'd like to mention is the COVID-19 tragedy. It really reinforces the need for us to critically consider, critically think how we produce, store, process, transport and consume our food, and dispose of the waste products. In such a way we should adopt this chain of food production system that sphere of the land, the idea to use the best science to produce the agricultural food at the best method we know, so that we can maximize the use efficiency, minimize the leakage of inputs into the environment and water, and therefore reduce the carbon and enlargement of footprint of a production system, and save land, water, natural resources for nature. I think 700 million hectares of cereal land, if done properly, can be better than 200 million, than nature by year 2100. We do not need additional land.

The last thing I want to mention, which I think is very important. And that is that soil and agriculture, they're sustainable to use, have to be a solution to environmental issues. They are not a problem. If done properly, they are indeed the solution.

And lastly, Gebisa, I do want to rephrase my Sanskrit upbringing and background in two words, which says, "Vasudhaiva Kutumbakam" The whole world is a family, and the COVID-19 pandemic teaches us we are indeed a family. And if we feed each other well, we will certainly be better-off. And, in that respect, I am thinking of contributing my honorarium for teaching and research in soil and sustainable agriculture.

Thank you for your very kind opportunity to give to me to talk to the committee.

Dr. Ejeta Thank you, Professor Lal, for sharing your personal story and the legacy of your work. You did it preparedly and eloquently. Your final message to the next generation was particularly spot on – the wise words that people are images of the land they live on, and that hungry, miserable and desperate people pass on their sufferings to the land, was a message that resonated with this poor kid from Africa. And many of these wise words, along with your advocacy for the rights of all living things, including soil, is not only a sure way to feed humanity sustainably, it is also a ticket to saving the planet.

Thank you so very much for giving me this opportunity to work with you.

Barbara Stinson

Thank you both. What a wonderful message for the next generation, coming from our inspiring new laureate. Thank you, Dr. Lal, Dr. Ejeta, for your engaging conversations. I know everyone appreciates it and looks forward to hearing more. Thank you all for joining us today.

I have a couple of announcements to make. We really hope to build on the momentum we've been trying to create for the Digital Dialogues we've been featuring, and we want to offer a wide array of programming throughout the rest of the year.

I have to take this opportunity at this moment to speak on a more serious note. Following so many brutal murders and centuries of unjustified racial violence against the black community, we face a call to action against racial injustice and police brutality in all forms, locally and globally. The World Food Prize Foundation is committed to this call and to taking action.

We're embarking on a deep examination of our own performance, reevaluating in every direction. We're looking at diversity in our staff, our programs, our partners, our awards process, and all of our audience as they collect together. We're working as a team to develop an internal alignment to reflect external right actions in support of the voices of black indigenous and people of color. As has already been reflected by both of our speakers, Dr. Norman Borlaug was committed to this. In 1970 at his Nobel Prize ceremony, he said, *You cannot build a peaceful world on empty stomachs and human misery*. The first essential component of social justice is adequate food for all humankind. We are following his words and continuing his mission.

So to build on this commitment, I want to announce that the World Food Prize event in the week of October 12th will take place in a new, virtual format. Despite not being able to meet in person, we will take this opportunity to widen our scope and offer more. We hope to offer more interaction through breakout sessions and side events, cost-cutting exploration in a new, plenary format that features increased accessibility for a broader audience. We'll try to take advantage of this opportunity.

The Borlaug Dialogue will continue to focus on what's most needed to build a resilient food system, one that is equitable, sustainable and nutritious and will feature much of the work that you've heard about today from Dr. Lal and so many others around the world. And we'll offer a special ceremony, a Laureate Award Ceremony to fully honor Dr. Lal.

We're looking forward to offering another set of engaging and dynamic programs this year. You'll find more information about our plans for the week of October 12th coming later this month. So save the dates—the week of October 12th, mostly in the mornings of that week. And if possible and safe to do so, we will also host whatever in-person events we can.

So, congratulations again, Dr. Lal. Thank you for joining us, all of you, and stay safe in these challenging and important times.

Goodbye.