

**2014 BORLAUG DIALOGUE**

October 16, 2014 - 9:00 a.m.

Speaker: *Dr. Pamela Anderson*

*Introduction:*

**Ambassador Kenneth M. Quinn**

President - World Food Prize Foundation

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In 2006 I had a chance to have lunch out at DuPont Pioneer with a young guy whose name was Raj Shah. I had never heard of him. They said he had flown in from Seattle from the Gates Foundation, and the Gates name seemed familiar. And I had about 15 minutes to tell him about the World Food Prize. I don't know what I said that intrigued him, but he said, could I put together a panel forum here on this stage, so I did. We had Norman Borlaug, Sir Gordon Conway, Catherine Bertini and Cheng Zhangliang from China with him.

And that began the connection and a relationship that led to Sylvia Burwell, who I mentioned yesterday, coming and speaking in 2008. And then in 2009 I got a call from Raj Shah who said that Mr. Gates was about to give his first-ever speech on global agriculture and a Green Revolution for Africa, and he'd like to do it at the World Food Prize if I could invite him. So I said, "Jeez, Raj. If only you had called of weeks ago. You know, the program is pretty tight and..." I didn't do that, right? So a great thrill we had to have Bill Gates be here to give that speech. The following year Jeff Raikes came, and his quote that we love was, "I was able to have dinner with 12 smallholder farmers from Africa in Des Moines." Raj came back and spoke again in his new capacity as the head of USAID, but Chris Elias was here.

And now today my good friend, Dr. Pamela Anderson, is here. We always knew her as the Director General of the International Potato Center where every year she'd have one of those young Borlaug-Ruan interns, like you just saw, there being nurtured by her and guided on their careers. Before that she was at CIAT in Colombia. She has a degree from the University of Illinois and Masters of Science in Entomology and Human Ecology from Harvard, a Doctor of Science in Population Sciences, the Harvard School of Public Health. But most important to us is, her mom lives just outside Oskaloosa, Iowa. We're so delighted to have her here in her new role as Director of Agricultural Development at the Bill and Melinda Gates Foundation. Dr. Pamela Anderson.

## ***SPECIAL ADDRESS***

### **Dr. Pamela Anderson**

Director of Agricultural Development, Bill and Melinda Gates Foundation

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Thank you, Ken, for that kind introduction. Excellencies, laureates, colleagues, to all the youth here with us today – Happy World Food Day! Yeah! It’s a very special honor to be at the World Food Prize on this particular day. Thank you for the invitation.

Every year we get together here to celebrate the work and the legacy of Dr. Norman Borlaug and the other Green Revolution warriors, like Dr. Sanjaya Rajaram, our laureate for this year, who have dedicated their life and their work to productivity and food security. But this year, Ambassador Quinn, I commend you and the governing council for not only looking back to celebrate our accomplishments but also looking forward through the Borlaug Report to the challenges and opportunities of the future.

And that really begs the question for us – What is the future that we want to see? And what are the pathways that we have to get on and accelerate to get to that future?

Sometimes it’s easier to envision the future that we want. So I want to show you a story of a Tanzania girl named Suma, who’s actually envisioning the future that she’d like to see for herself and her family.

My sisters down here are smiling. In one generation we want to see an agricultural transformation across the developing world, and particularly for smallholder farmers in Africa and South Asia, so that they’re no longer just surviving and scraping by but they’re thriving; they’re ensuring food security for their families and contributing food security to their countries and to the globe; and even beyond that, they’re using their agriculture to drive a broader, inclusive economic transition for themselves, their families, their communities and their countries.

And we’re very conscious that – we talked about this yesterday – there are many paths that we’re going to have to get on and accelerate to get to that future. This morning I wanted to talk to you about two of those pathways in particular.

The first one is indeed increasing potential productivity for our staple commodities. Now, I swear I did not coordinate this with Ken Cassman. I didn’t even hear the Borlaug Report until yesterday afternoon, but we’re in violent agreement that we really must reinvest in increasing productivity gains, or what we call “potential productivity.” But we also have to discontinue the almost singular conversation on rice, wheat and maize. And we need to think about productivity gains across a much broader array of staple of commodities that underpin smallholder farming systems in Africa and South Asia – crops such as cassava, sweet potatoes, sorghum, the millets, bananas, cowpeas, and very importantly, livestock. We have not been talking about the importance of livestock – poultry, sheep, goats, dairy.

So one of the critical pathways to the future, building directly on the legacy of Norman Borlaug, is to invest in modernizing and accelerating our public breeding programs. Maybe with the

exception of maize, there are not private sector business models for our staple crops in the developing world. So it's going to continue to fall on the shoulders of public sector to modernize and accelerate these breeding programs. We think that, if we can shift from a focus of more breeding – in other words, just getting out more varieties – to more efficient breeding, that we actually can double or triple the rate of genetic gains, so going from the 1% Ken was talking about yesterday, or less than 1%, back up to 2 or 3% genetic gain per year.

And to do that, we basically have to embrace the technology that private sector has been using in the developed world for some time now, and we need to do it collectively. We need to build a global breeding platform that involves all of the CGIAR centers. We can't do this alone. We cannot afford to do it commodity by commodity. We need to do this as a collective – with the CG centers, with the national programs, with some of the advanced research institutes, within local seed companies, hopefully with private sector. And by doing that together, we truly believe that we are going to be able to solve this problem that Ken put to us yesterday.

Essentially, what we need to do is cut our breeding cycles in half – that's already starting to happen. We need to better exploit genetic gains. The CG centers are sitting on gene banks that are gold mines that we've barely started mining. We need to digitize and mechanize our breeding programs. We need to develop more user-friendly information, management tools, and state-of-the-art analytical tools, and define new metrics – again, not just delivering varieties, delivering genetic gains, and then rewarding breeding teams that are actually doing that, that are hitting those genetic gain goals.

We believe that the modernization of the public sector breeding programs is such a mission-critical component of this agricultural transformation that we want that we will be committing significant resources over the next five years to begin what we're calling a "Genetic Gains Initiative." But this is going to take much more than just the resources that we can bring to the table. We need to really form a radical partnership around this that involves other donors and other institutions, so we will be coming to talk to many of you. But this is critical. The problem that Ken laid out for us in the Borlaug Report yesterday is something that we can solve. We are committed to it, and we are investing against it.

Yesterday afternoon, Margaret Zeigler also said to us, "It's not enough just to deliver the genetic gains. We need to think about how to package them in 21<sup>st</sup> century technology, in precision agriculture technology." And we agree. One of the projects that we're investing in and that we're quite excited about is called the Africa Soil Information Service, together with Colombia University Global Center and ICRAF and other partners. This project has pretty much turned the field of soil data collection characterization and mapping on its head. We now have for the first time soil maps and data for 17½ million square kilometers in Africa. That's across 42 countries and covering about 90% of the population. We're investing now in downscaling that information to national and even field level. So if you think back to the film, remember Suma's husband was there with a digital probe, taking soil data. Our dream is that the smallholder farmers can actually take their own soil data, and they will be able to retrieve back digital recommendations, specific recommendations for the fertilizer blends that they need for different plots on their farm – how much to use, how to improve their organic matter, or how to improve their water management practices based on these soil data.

So we're very clear that genetic gains is not enough. It needs to go forward, as the Green Revolution varieties did with the technology package—but it needs to be a 21<sup>st</sup> century technology package. We're committed to that work. We're investing in that work.

One of the other mission-critical pathways that I want to talk about this morning is the focus on women and girls. We know the figures. We all know the figures. More than half of the labor in the African agricultural sector is women, and in some countries it's more than that. We have been talking about gender for well over a decade, and what we need to do at this point is we need to stop talking, and we need to get very serious about investing in this area and addressing these issues.

There's some wonderful studies coming out now that I think are compelling and that are going to help us with this. We're all aware at this point of the FAO 2011 study, *Women in Development*, that concluded: If women simply had access, equal access to land, to credit, to inputs like seed and fertilizer, to extension services, to markets, we would be able to increase productivity 20 to 30% and ag GDP by 2½ to 4%.

There's a new study that just came out this year by the World Bank and the One Campaign. It's called, "Leveling the Field." And what they're showing is that, indeed, access is important, but it's actually not enough. Even when women have access to those assets, we are not seeing it translate into the same level of productivity that men are getting. They did this study across six countries, so it's just beginning. This is based on the LSMS, the Living Standards Measurement Survey of the World Bank, which is gender, disaggregated data. And so what we see is the gender gap is deeper than we thought, and it's broader than we thought. So in Tanzania the productivity gap is 23%, but in Niger it goes up to 66%.

They're also getting insights into what is driving this gender gap, so the report concluded that the one factor across all of these countries that was the biggest constraint for women was labor. But they're also looking at context. So what was particularly interesting was that the way the labor constraints play out varies in context, which is logical. So, for example, women tend to live in households that are smaller; sometimes the labor simply doesn't exist. And they're not particularly effective always in being able to access labor from off the farm. Sometimes there is labor within the household, but they don't have agency. They don't have the ability to deploy that labor to the plots that they're managing. Sometimes they do have the ability to deploy the labor, but what we're seeing from the data is that the labor does not perform as well for women as it does for men. That might be cultural norms. It might be because the women don't have time to supervise the labor. We don't know. But the point is that these studies are really starting to show us the gender gap is wider than we thought, it's deeper than we thought. We're getting insights into what is driving it, and we need to keep studying in this area, we need to keep measuring, and we need to start addressing it, through both our technology and policy measures.

So at the Foundation, we have made a commitment. We intend to significantly increase both our focus and our direct investment in women and girls. Last week Melinda Gates announced a new grand challenge called, "Putting Women and Girls at the Center of Development." This grand challenge has a goal to identify and encourage innovative solutions that effectively reach and empower the most vulnerable women and girls in society in ways that are sustainable, cost-effective and with the potential to scale.

So I'd like to make the case for a few minutes that we need to tackle this issue of gender inequality and women's empowerment head on, across all of our investments and across our value chains.

At the Gates Agricultural Development Program, we think of sustainable productivity growth in three dimensions. We think about increasing potential productivity, realizing productivity and then increasing realized value. So the potential productivity is actually the bit we just talked about; it's delivering genetic gains. But if we look at this from the gender point of view, what we're really talking about is women having a clear voice and being consulted in the design of those technologies, including varieties – making sure that we understand and we measure the performance of our technologies against traits that are important to women. So, for example, in crops you'd be looking at things like labor needs, nutritional value, cooking time, taste, perishability, postharvest processing characteristics. We also feel committed to the need to really get more women into the research and development teams and in leadership roles.

So opportunities to do this are really all around us. Last week Bill Gates was at Cornell for a half a day learning session on genomics-enabled breeding. Ugandan scientist here, Paula Iragaba, was there. She's working with us on this collaboration, the next generation cassava breeding program. And she had a chance to explain to Bill some of this and talk about the kind of traits that women prefer in cassava – the importance of poundability, the importance of in-ground storage, a postharvest storage, the ability to piecemeal harvest roots. And actually with our genomics and our genetics now, we can do that kind of work. We can go after those kinds of traits. It's not impossible and highly expensive anymore. So we need to take this much more seriously.

We continue to support the award program, which is designed to cultivate a new generation of African researchers and leaders. We need more people like Paula in these problem areas, understanding what women need and designing these products to the needs of women in the developing world. Today only one in four researchers in Africa is female, and even fewer, one in seven, hold leadership positions in African research institutions. I would make comments on North America, but that is not the point of my talk today.

Realized productivity is another dimension that we work on. This is the "So what?" dimension. We can develop the very best and most modern crops and animals and technologies, but if we can't get them into the fields, if they don't get adopted, if they don't translate into real productivity gains – So what? What are we doing? And here the gender dimension is at its most basic level, ensuring that these technologies are relevant to women and adopted by them.

In the video you just saw, we made an attempt to visualize some of these technologies, in particular the time and labor-saving technologies that I underlined are just so important. For example, you saw small machinery getting gender- and culture-appropriate small machinery into the farming process. Processing machinery – you saw the cooperative using machinery to process their cassava, add value to it, turn it into flour, get it to the market.

We're talking, all of us, a lot about mobile and digital technology. This is extremely important for women, really linking them to access those services, being able to manage their farms better, going online to get access to seeds, get advice on fertilizer, hopefully the kind of detailed fertilizer advice we were just talking about, being able to get pricing information, being able to

get weather insurance, being able to access financial instruments, digital banking – the opportunity is immense.

The biggest problem we have in the space right now is we do not understand who and how people are using mobile phones. We talked yesterday about data gaps. This is a huge data gap. If we hope to really move into this space and make it work for smallholder farmers, we have to understand – do women own phones? Do they have access to phones? How are they using them? What are they using them for? When and how do we get the best information to them? So there's a lot of work again here to design not only the instruments but the services that go with them so that they really serve smallholder women.

And we need to pay a lot of attention to extension service. One of the projects that we're investing in is called, "Digital Green." This is in part creating extension content specifically for women and by women, and it's being delivered to women's cooperatives digitally. So this has been quite successful in India, and we're now investing to bring this into Ethiopia and hopefully roll it out in other parts of Africa.

The third dimension of our work is basically transforming that productivity into real value. And here we think principally about the value of nutrition, the value of income, the importance of getting that income into women's pockets. We don't need to talk about that. There are many, many, many studies that show us why that's important and when they have agency over that income, how that contributes to the welfare of the family.

The other area that we're looking at in terms of value is women's empowerment, because that's what these studies are leading us to understand. We can't just give assets to women. We need to empower them to really control those assets. And so one of the things that USAID and IFPRI and the Oxford Unit on Poverty and Human Development have done is come together in 2012 to put together, design what is called the Women's Empowerment Index in Agriculture." They're looking at five domains. This is really to look at this empowerment for both men and women and then specifically drill down and see what is causing the disempowerment of women in agriculture.

So they're looking at production decision-making. Do women have a say in the decisions that are being made on the farm? Access to productive resources – we just talked about that – do they have access to inputs? Control over the use of income – do they get the income, do they have agency around it? Do they have participation in community leadership, and what about their time allocation?

So the baseline study just came out this year. This project looked at 13 countries across 5 regions, and so the index goes from 0 to 1. You're seeing a range, again, a low in Bangladesh of .66 up to a high in Cambodia of 98. The study concluded, looking at these first 13 countries, that the three most important factors driving this empowerment for women are: lack of access to and decisions on financial credit; workload, again; and access to group membership.

But the other thing they found is that, again, looking across these countries, there is variation. So they looked at Ghana and Kenya, which had almost identical scores – .71, .72. In Ghana the real factors driving this empowerment for women are these first two – decision-making and

access to productive resources. While, in Kenya what the biggest challenges for women are participation in community leadership and their workload, time allocation.

So the importance of this is data. We are measuring. We're holding ourselves to account. We're trying to understand. I was with Kanayo Nwanze in Seattle last week, and one of the big things we were talking about in terms of the Gates IFAD collaboration is gender. We want to come together and join USAID to pull this women's empowerment index into our investment portfolio across our different investments and the value chain. So this is something that we're really going to commit to strongly.

Ambassador Quinn, ladies and gentlemen, I think one of the biggest tributes that we can give to Norman Borlaug and the Green Revolution warriors of the 20<sup>th</sup> century is to modernize the public sector breeding programs in order to get back to the genetic gains of 2 to 3% per year but over a broader array of crop and livestock commodities. To bundle those improved commodities in technology packages driven by digital and mobile modern technology designed and delivered with women and girls at the center of development efforts and dreaming about the 21<sup>st</sup> century agricultural transformation across the developing world. Thank you.

### **Ambassador Quinn**

Terrific, thank you. Wow! So, Pamela, I just have to tell you, when Bill Gates was here in 2009 and he was right here launching all of this from this platform, I came up when he finished, and I said, "Mr. Gates, in his last years, Dr. Borlaug almost despaired about whether the public sector research would be there, about whether anybody was going to carry forward his passion for bringing the Green Revolution to Africa." And I said, "Mr. Gates, your announcements and what Gates is doing and all the formulating plans gave him hope in those last months of his life. And I only wish he could be here today, because I think he would have run up on the stage and want to congratulate you and everyone at Gates himself for doing this." And I gave him my replica of the Norman Borlaug Gold Medal that Norm had given to me, and I said, "You should have one that he touched, so that you know how appreciative he was of all that you're doing." So this was just terrific. Thank you.