

2006 Norman E. Borlaug/World Food Prize International Symposium
The Green Revolution Redux:
Can We Replicate the Single Greatest Period of Food Production in All Human History?
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<p>SESSION THREE: Linking the Public and Private Sectors October 19, 2006 – 2:00 p.m. – 3:00 p.m. Rajiv Shah</p>

Introduction

Ambassador Kenneth Quinn

President - World Food Prize Foundation

This is again part of our conversation, part of our dialogue, the Borlaug dialogue. And this dialog is going to have Dr. Borlaug in it a bit later, along with Catherine Bertini and Dr. Chen Zhangliang and Gordon Conway. But they're going to be coming up and reacting to and having a dialog with the outline that our next speaker is going to present.

I have to say this is the most fun introduction of the entire conference, because I met Dr. Shah a couple of months ago, and I talked to him about what he's doing. And I figured out that he has the best job in the world. I mean, he works for the couple who I think are the most dynamic and I believe most inspiring leaders now in our world on the issue of confronting hunger and bringing the Green Revolution to Africa. And to have someone like Bill and Melinda Gates to be doing that and bringing the power of their foundation and the power of their own personalities to this, I think, is reason to have Josette Sheeran's optimism about this. And the Gates Foundation and Bill and Melinda Gates have turned to Dr. Rajiv Shah to design and coordinate and build these programs.

I remember the thrill when I was a young development officer on my first assignment in the Mekong Delta, and I had a much smaller amount of money than you'll have to work with. But it was thrilling to see problems and think that maybe you could make a difference if you thought about it and you applied it in that way.

Dr. Shah is a medical doctor. He has his M.D. from the University of Pennsylvania. He has an MSC in Health Economics at the Wharton School of Business, studied at the London School of Economics. There's one part, though, of his education that's a little troubling to those of us in Iowa, that he's a graduate of the University of Michigan. And this Saturday Iowa is playing at Michigan. So I hope you take this as a token of our openness and broadmindedness that we still wanted you to come.

He is going to have, I think, thrilling things to talk about in terms of the objectives and the possibilities, and it is our great honor to have him here with us today. Dr. Rajiv Shah.

The Bill & Melinda Gates Foundation: An Emerging Approach to Agricultural Development

Dr. Rajiv Shah

Director for Financial Services & Agriculture
Bill and Melinda Gates Foundation

Great. Thank you very much, Ambassador Quinn, and I also want to thank the other participants in today's discussion, Dr. Chen, Catherine Bertini and Professor Conway. My colleague, Roy Steiner, who is here with me today, both of us are here to learn and are here to listen. We recognize that we are relatively new to the challenge of agricultural development and recognize that in this room there's almost an amazing amount of expertise, knowledge and experience. And so I hope to keep my remarks relatively short so that we can listen to those who have frankly more to say and more to share with us about the directions in which we should move as we launch this effort.

I wanted to just briefly introduce the Bill and Melinda Gates Foundation, describe to you why we've decided to launch a program in agriculture and agricultural development, share our very new, emerging approach to the types of investments we want to make in this space, why we're choosing to make investments in particular areas and why we're holding off in others.

And also want to share with you two specific examples that fit within this larger theme of learning by doing, that has been one that I've had the opportunity to be a part of at the Gates Foundation for the last five or six years on both the health side and now in agriculture.

And at the end I just have a few short questions, but I imagine our discussants and panelists will certainly have quite a lot to add in terms of what we should be doing and why.

I just wanted to start by introducing who we are. We're a new foundation. The Gates Foundation is a family foundation. It was founded right at the end of 1999, and it's based on a core belief of specific family. And that core belief is that every life has equal value, and it led us to launch significant programs in global health and immunization and vaccination in the development of new technologies to go after some of the diseases that most affect the poor disproportionately and inequitably.

There really are two core values that lie at the heart of our work. The first is that all lives, no matter where they're being led, have equal value. And the second is the core rationale for the philanthropy, which is: *To whom much has been given, much is expected*. And I would just say that this is a family that is very dedicated and committed to the causes it takes on. And certainly, having made the decision now to participate in agriculture and agricultural development, I think some of the comments we heard earlier today from Peter McPherson and others are true – we will be in this space for a long time, because these problems require perseverance and commitment and a long-time horizon in terms of dedication in order to achieve results.

I just want to briefly describe to you the history of our foundation. We came together, as I mentioned, at the end of 1999; and today we're organized into three primary areas. One is the Global Development Program, which is our newest program and houses our agriculture effort. The largest program is our Global Health Program,

which has been in effect since the beginning and is the one through which we've really had most of our experiences with the challenge of global development and with some of the challenges that poor families and low-income families and children face throughout the world, whether it's not having access to adequate vaccines, whether it's having a million children die a year in Africa from malaria when it's relatively easily treated and diagnosed but those medicines aren't available.

So those are the types of things we've been doing on the global side. In the United States we've had a program that has focused largely on domestic education. We work in high schools around the country and have a goal of helping 80% of the U.S. high school students matriculate to college over time. As you all know, that number is about 50% today, and most of the disparity comes in low-income and minority communities, largely large urban school districts. So that's been the focus of that initiative.

We've spent to date about \$11 billion, and we turn around and then ask ourselves – what are some of the results that we've achieved for that. Incidentally, I use “we” very generally. Almost all of our work is done by partners and grantee organizations. We're not an operating foundation at all, so I use “we” very generously when I talk about the results. But some of them we can talk through a little bit later, but they have to do with the number of children that have been immunized and imputed, life saved from that initiative. Our Global Alliance for Vaccines and Immunizations, for example, now operates in 68 low-income countries, provides funding support for human resource training, extension of vaccination programs, and we estimate has saved over 1.2 million children in the past five and a half years by extending access to critical life-saving vaccines.

There are a number of other statistics I could share with you, but I wanted to really share with you the core challenges and some of the things we have learned about our approach and our philanthropy – because that's what's relevant to our work in agriculture.

The first is that we hope to be an organization that can develop a strategy, stick to it, and within that strategy take risks. So, for example, on the health side, we've invested significantly in the development of an HIV vaccine. We looked around the global landscape when we started this initiative five or six years ago, and we said – it's amazing that you could have such a tremendously high burden of disease and so many deaths so disproportionately in terms of the lives of the poor and yet have so little money going into HIV vaccine research and development. By our estimate, around the turn of the century it was almost under a hundred million dollars a year going into HIV vaccine research, whereas most therapeutic categories on the outside would have investments of three or four or five billion dollars a year for cardiovascular drugs and for lifestyle improvement products.

So that was an area where we said this is a high risk problem, it's one where philanthropy can make a real difference, and we worked together with our partners actually on the health and now the agriculture side, the Rockefeller Foundation, to launch a number of initiatives like the International AIDS Vaccine Initiative to improve access and to improve the research and development agenda around developing an HIV vaccine.

So we do try to focus on things that take a longer period of time and involve a higher level of risk.

I would say the second big experience has been that of the critical role of partnerships. Secretary Sheeran spoke about partnerships and public/private partnerships. We've certainly been involved in a number of them. But it is certainly clear to us as a grant-making foundation with no operating capacity and very limited expertise and staff outside of Seattle, Washington, that we need to work through partnerships to be effective. And one of the things that we have tried to do is focus most of our initiatives and most of our major programs around a handful of small, focus partnerships.

The third has been an observation about how we've learned about our own giving and the effectiveness of our giving and the effectiveness of our strategies. And it has been one that really is about learning through doing. We try to do as much research and homework as we possibly can prior to making investments. But we do find that it isn't until you actually empower your partners to go out and try to create change that you can learn about what are the core constraints, both on a scientific and technological side and also in countries in terms of creating access to the types of technologies that we invest in the development of.

So with that, I'd like to just introduce our agricultural development strategy and our portfolio. We started looking at this topic almost a year ago, and we had a few initial observations.

The first was the one that certainly everyone in this room is very familiar with, and that is that really no major country has moved large numbers of people out of poverty without doing it through sustained agricultural development and sustained productivity in the agricultural sector. We understand that it's much, much more complex than that, but I think that core understanding has really been a strong motivating factor for why we're in agriculture and agricultural development.

The second has been around inequity. It's clear that a great majority of the world's subsistence poor we saw a variety of statistics this morning that would back that up, in fact live in rural environments, depend on agriculture for outcomes, and depend on agriculture for their own livelihoods and their families' well-being. So as we focused on the core concept of inequity in the world we live in today and how can we use our resources to affect that inequity, we focused on agriculture.

We looked at the history, the tremendous history, that has been led by Dr. Borlaug and Gordon Conway and so many of the other folks here today, in order to try and learn some lessons about what's worked and what hasn't in the past. One lesson we learned was around science and technology and the power of science and technology to be the tip of the arrow in terms of creating change.

I think the other part of that lesson has also been that the tip alone is not going to be sufficient to create change. And one of the things we've really tried to think hard about is – how do you do all the things along the full-value chain in order to make sure that farmers have access to markets, that policy environments are appropriate and conducive to growth and poverty reduction.

The second core learning has been looking at this problem from the perspective of the small farmer. There was an interesting piece in the *New York Times* probably about a month ago that talked about suicide rates amongst small farmers in India. And I found that to just be a very powerful demonstration of the life or death type of risks that small farmers take. And so it can be often very easy for a Seattle-based foundation to invest in technologies and expect small farmers to pay very valuable and limited resources to adopt those technologies. But we really feel, unless you look at the problem from the perspective of the small farmer and understand the risk equation that they face, that we will not be successful over time.

And then the third major observation has to do with the difference between agricultural development and rural development. And to be honest, we don't know the difference yet, but we have seen the studies, and we have talked to the experts, and we've visited places and looked at the differences in societies like China that have been able to create significant nonfarm rural employment and use the productive labor coming off the farm in a way that allows you to build agroprocessing facilities and agricultural industries and countries that have been less successful at that and have seen even greater amounts of migration into urban slums.

So with that said, our strategy really focuses on four primary initiatives. The first is a real focus on data, policy and advocacy. I think if there's one lesson we've learned from our work in our health program over the past five or six years, it's that you can develop technologies, you can invest in research and development, and you can even invest in model programs. We have a program in Botswana that provides HIV treatment and anti-retroviral medicines to HIV-positive people. You can certainly do those types of things, but unless you can affect large-scale policy and get lots of political will, public opinion and support from the broad variety of actors that'll be necessary to create real, sustained change, you would not be successful.

And I think in reading Dr. Borlaug, the book about Dr. Borlaug, one is compelled to look at what he was able to do in terms of making that transition as the scientist that

helped create the core technologies that led to the Green Revolution but then focusing so much on large-scale policy change in order to make that revolution really work for hundreds of millions of poor people. And so that's the first part of our strategy and the one that we know the least about. So I would ask that our colleagues that speak today could perhaps suggest things that we can do that would make a difference in the policy environment in order to help people get access to the types of things we want to produce over time.

The second initiative is around market access. And it's been spoken about earlier today that we need to invest in strategies to help small-farm households access a variety of markets, mostly local markets but also regional and international markets as appropriate. So that's an area where we've launched a request for proposals. We actually received an overwhelming number – 1300 proposals that totaled well over a billion dollars in funding this summer. And we're currently in the process of diligently going through those. We appreciate your patience in the time that we're taking to get back. But we hope that that launches really an initiative that we think is going to be critical to the success of this initiative.

The third is around input utilization and allowing farmers to have access to locally adapted inputs. And perhaps the best example of that project is the one that I'll speak to, which is the Alliance for a Green Revolution in Africa, which we launched with our colleagues from the Rockefeller Foundation.

And then finally, and very much a part of our core rationale for being in this space, the power of science and technology to improve the types of technologies that farmers need to be effective to increase productivity, to increase yields, and to reduce their exposure to risk.

I'd just say that in terms of one of the things that we really try to focus on is thinking about what are the right metrics for studying what our target market looks like today and how we want to characterize that target market ten years and twenty years from now. This perhaps comes from our experience in health where the 1993 World Development Report laid out what are called DALY tables, but "disability adjusted life years" on a per-country and per-disease basis.

And it really allowed us to map and understand the types of problems we were going after, and it also gives us a framework for understanding if we're going to be successful ten or twenty or thirty years from now. In the same way, we're exploring a variety of different measures but looking basically at undernourishment and hunger today as our metric for understanding subsistence poverty and what we'd like to see sustained reductions in over time.

I'd say in addition to the dire nature of the problem, we saw the data earlier this morning, but 1.1 billion dollar-a-day poor, 800+ million hungry individuals, half of

whom are children. In addition to that, a core concept that will affect how we prioritize where we make investments has to do with where the trends are.

And certainly when you look at Sub-Saharan in Africa – and this is why our first big investment in agriculture is focused in Sub-Saharan in Africa – the trend is either flat or negative in terms of crop yields for the poor in terms of productive output per capita. It's not keeping up with population growth, and as a result – and we've heard this again this morning – but over the last 15 years the number of Africans living below the poverty line has actually increased. And so that today almost 200 million people, over one third of the population, still suffer from subsistence poverty and hunger. And so that's really been a core rationale for why we're starting this initiative and making our first investments in Africa, although we will over time expand to make investments in other parts of the world.

I spoke briefly about the example that I wanted to discuss, which is the Promoting Access to Markets initiatives. We've put out a request for proposals and got in really a surprisingly large number of ideas and concepts. I do want to share how we're thinking about this from our end, just as an example that perhaps our discussants could comment on.

We really believe that it is the goal of our initiative and of others to demonstrate scalable models for improving smallholder farmer access to improved markets. And in that context, a number of the strategies that have been talked about earlier today and a number of the strategies we've seen, we tend to observe a standard problem, which is – with few exceptions you tend to see projects that can work in specific environments, but when it comes to taking those projects out of one environment and trying to apply it very broadly across multiple countries, multiple states, tens of millions or even hundreds of millions of people, we have seen far less success. And I would say that that's been true for a number of the strategies that were even discussed this morning, ranging from cereal banks to farm organizations to credit cooperatives and other types of initiatives.

So one of the things we're really looking for in this initiative and that we hope to fund are strategies that have a pathway where you can see how you would get from serving one community or even hundreds of communities to reaching thousands of communities and reaching very large numbers of farmers. And it's a challenge I think for both us and our grantees. But as we have started to look at what has come in and start to think about what our strategy is, we've started to think about four core areas. They're four sort of early thoughts on our strategic thinking in this area.

One is that both demand and supply side strategies are going to be necessary to help large numbers of smallholder farmers access improved markets.

A second is that farmers need access to relevant information and local exchanges. We've all seen the SMS text messaging that gives you farm pricing data and gives you

market pricing data in certain environments, and certainly there's a real role for technology, and the trend for improved access to information technology can be leveraged in a significant way.

We'd like to look in a unique way at the possibilities in terms of linking smallholder farmers to different types of markets. Certainly school lunch programs and things that have been very appealing in terms of creating very local markets for farmers are important but also have a very specific role. We're also exploring strategies to help farmers link to international markets through fair trade initiatives and through labeling and processing initiatives.

And then finally we really do believe that there are probably significant differences across contexts. So as we're looking at making grants in this area, we're trying to understand much more specifically, what are the strategies that might work in very specific parts of Africa or very specific parts of South Asia and not expecting that they will work everywhere.

I wanted to share with you the example of our initiative in Africa, which is the Alliance for a Green Revolution, which we launched together with the Rockefeller Foundation. When I say we launched it together with the Rockefeller Foundation, I can't understate the significance of the work that they've done over the last ten, fifteen, twenty years in investing in African agriculture and how much that really did affect our thinking and our desire to partner with them.

But that's an initiative that focuses on trying to develop and improve the utilization of new input technologies. And right now we're starting with the Seed Systems initiative, so we'll be funding through that initiative, and I'll talk about this in a little more detail. Crop breeding activities at national research centers – we'll be funding some breeding activities at the CG centers as they pertain to African crop improvement.

But importantly, we're not stopping with investments in research and development. I think one of our early observations is that we really do have to learn much more about, and invest very deeply in, the development of effective distribution channels to reach smallholder farmers in often very difficult to reach and sometimes very remote areas. So we're making investments in seed companies and training agro-dealers to create a private sector system for seed distribution. And we are exploring, although we have not identified direct investments, we're exploring strategies for supporting public sector distribution through governments and through partnerships.

This program is called PASS, the Program for Africa's Seed Systems, and it really does include these components. The first is the breeding component. We hope to help fund the development of a hundred improved crop varieties in five years. We'll have a component that funds training efforts, since it's so critically important that Africa has the core human resource capacity to continue to develop improved scientific and

technological products. And we'll be funding mostly African-based training programs that will train 50 PhD students and 170 master's degree students over the course of the next five to seven years, as well.

I mentioned we'll be investing in improved seed production and distribution systems. In all honesty, while we have a little more progress in this area in terms of investing in the private sector side of the seed distribution, the seed companies and the agro-dealer training initiatives, we're still exploring exactly how we'll make the investments on the public sector side.

And then finally we'll invest in policy change and policy development and monitoring and evaluating impact. On that last point, we hope to launch a household survey, basically, that will study specific markets that we call "barometer countries." We hope over time this initiative will start in 12 to 14 countries and then expand beyond that to ultimately cover a significant portion of Sub-Saharan Africa.

So the initiative right now is very focused on seed systems. We recognize that that's one part of what's necessary, and so we hope over the course of the next several years to work with Rockefeller and with other partners to launch other significant initiatives in improving soil fertility and access to fertilizers and irrigation strategies, and micro-irrigation strategies in particular, and in efforts to link farmers to markets in a more sustained and structured way. So that this initiative over time is something that includes a broad range of integrated strategies as opposed to just being about seeds.

The other thing I would just say is I think we recognize – and this is relevant to something Roger Thurow said earlier today, that the advocacy and policy environment is absolutely critical. And so, while we don't fully understand what the right strategies are in terms of policy strategies, we do recognize that we need to get engaged. We need to get significant political leadership engaged in this initiative. And over time we will need significant public investment from African governments, from other major public donors – USAID, DFID, and from the World Bank and other development bank organizations that play a critical role in shaping how public expenditures happen on the continent.

So I'll just close by outlining some questions that we have that are open questions in areas where we hope to continue to learn.

The first is – we do continue to question whether our strategic focus is in fact correct. I remember when we presented this strategy, I think, in May at the National Board of Agriculture at the Academies of Science, they told us – we started with technology and ended with policies – and they said, "You absolutely have to switch that around, because if you don't get the policy piece right, you'll spend all of your time effort, money and resources on technology development, and it'll all be for naught."

The second major question is truly understanding the role of private sector businesses, governments and donors in the overall effort to improve African agriculture. What is the right role, and what should we be asking of African governments to be effective partners in this challenge?

Third is – what are in fact the best ways to link farmers to markets? I think this is an area where we want to both spend significant resources and also identify strategies that can be successful.

Fourth – What is the appropriate business model for developing and delivering key inputs. It's critical that we have effective strategies with both private sector delivery models and public sector delivery models. And it seems to us at least that there's been a tendency and a trend to move away from public sector models towards private sector models. And before wholeheartedly embracing that trend, I think we want to question that and explore – are there effective public sector distribution models.

And then, finally – What are the most effective ways to invest in product development? We have a tremendous amount of respect for plant breeders that do their work that are on the agricultural research stations in Africa and also at the CG system. But we also see the way product development happens at Monsanto and Pioneer and some of the other firms that can operate with greater resourcing and with sometimes better information technologies at their disposal. And so we do wonder what are the best and most effective strategies, especially in an age where we hope to integrate and tackle biotechnology and the promise of biotechnology for investing in the development of great breakthrough products that can help poor farmers.

So with that, I apologize for perhaps being the only speaker here to end with a series of questions as opposed to a series of answers. But we're very optimistic. We hope to be in this space for quite a long time, and we are committed to listen to those in this room and to this community, because we recognize and have deep admiration for the expertise that you all bring. Thank you.