PRESENTATION: WHO IS THE SMALLHOLDER FARMER?

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Ambassador Quinn, thank you very much for such a generous introduction. I didn't quite expect that. It's such a delight to be invited to speak to this very distinguished audience, and it's an absolute delight to be back in Des Moines again. And I was particularly pleased, when I was asked to come and talk to you, to see the theme of the conference, *Take it to the Farmer*. And I think this conference and this moment is so important for us in helping us focus on the plight of over 400 million small farmers in developing world. This is a great moment for us because it's a moment when agriculture is back on the agenda, and there is potentially new money for agriculture that we can use. Let's make this moment a moment that we put smallholders at the center of the development efforts that we are making today.

Also, let this meeting in Des Moines be the moment when we can end once and for all the perennial debate that's been going on on the viability of smallholder agriculture. This is a debate that's been going on for decades. I started my career as a summer intern at ICRISAT in India in 1976, and at that time I was given an assignment. And my assignment was to look at the data and literature on whether smallholders are as productive as large farms. And the answer then is the same as the answer today: absolutely, yes.

Since that time period there have been hundreds of studies looking at the viability of smallholder agriculture — studies which were done across continents, studies which were done across crops, studies which were done across time. And all of these studies show time and again that under the right circumstances smallholders can be just as productive, just as innovative, just as competitive, and just as risk-taking as larger farmers.

So I think it's time for us to put this debate for an end, because over the last three decades, while we've been busy debating, the Green Revolution took place. The Green Revolution took place across Asia, across Latin America, and the specter of famine that was there threatening Asia disappeared forever. The Green Revolution led to the dramatic transformation not just of Asian agriculture but Asian economies and the rise of the BRICs, and the rise of Southeast Asian economies and Latin American economies.

And the Green Revolution took place on the backs of smallholders across the developing world. Take, for instance, a smallholder farmer in the Indian Punjab with less than one hectare of land who in the '60s was growing one crop a year, either a crop of rice or a crop of wheat, and producing about a ton. By the '70s the same farmer was growing two crops with each crop yielding four to five tons per hectare, all because of the transformative change the Green Revolution brought to them. Some of them even managed to grow a crop of vegetables or fodder crops in between.

Take the case of China where farm sizes were even smaller. At the time of the household responsibility system that was introduced in the early '80s in China, Chinese rural households were allocated one *mu* of land. What's a *mu*? A *mu* is one-fifteenth of a hectare. It's one-sixth of an acre. And I know we're in Iowa, and I know the Iowa State Cyclones are big here, so let me put it in American football terms. A *mu* is the area between the goal and the 12-yard line, just a little bit over the end zone. The Chinese Green Revolution took place on that *mu*, on the ability of the Chinese farmers to extract the most that they could get out of that *mu*.

So that's what smallholder is all about. But it's not just in crops. Rural women in India with one or two cows created the White Revolution in India and made India the largest dairy-producing, milk-producing country in

the world. The amazing work of Kurien in doing this was recognized by him getting the World Food Prize in 1989.

But the Green Revolution did not just have an impact on production and on productivity. The Green Revolution transformed lives of people incredibly. I was born in a South Indian rice-growing village, and I consider myself a part of the Green Revolution generation — a generation that benefited directly from the productivity gains of the Green Revolution. My schooling, my college, were paid for because of the gains that we made on our farm. My ability to leave the farm resulted directly from the productivity growth that took place on the farm. That's, in a sense, the story of the Green Revolution for millions and millions of youth around the world and those of them who are now middle and upper-middle aged today. There are several people in this room who have been through similar experiences.

So as we talk about smallholders and smallholder agriculture, who is the smallholder? You have already heard from Howard Buffett — a smallholder, she could be any one of different types of farmers. She could be a subsistence farmer eking a living out of a tiny plot of land. She could be a post-Green Revolution farmer trying to sustain he productivity gains that were made during the Green Revolution. She could be a commercializing farmer that's trying to link up to the value chain, the value chain that connects to the local markets, the regional markets, and even the global markets.

These are all smallholders, but the needs of each of these populations is very different. And the challenge for us is to find the right solution for the right group of farmers and take it to them — that's the big challenge that we have. But for my talk, let me focus on the smallholder subsistence farmer, the one that we invoke in all of our discussions, the one that we work for and much of our development activities are focused on.

Who is this farmer? The subsistence smallholder is generally a woman, a female farmer, generally somebody with less than two hectares of land, generally somebody living on less than $1 a day, with poor access to inputs, with poor access to technology, extension, credit, etc. A farmer who sees, in her own generation, farm sizes dropping because her children need to have this farm divided among them, because they have no opportunities to go outside the farm for increased employment opportunities. A farmer who sees her production being extremely variable and worried that the variability is going to increase even further as the real impacts of climate change kick in.

So that's the type of farmer that we are talking about. Now, some people argue that agriculture is not a pathway out of poverty for these farmers. Okay, so then what is the pathway? So if you're living in a country with high proportion of population in agriculture with very low economic growth rates, with very low employment opportunities in the non-agriculture sector, with very low private sector investments — if not agriculture, then what is your way out of poverty? Think about Madagascar, a country where 70% of the population lives below $1 a day and the majority of them are in rural areas. If Madagascar does not approach poverty reduction through agricultural productivity growth, what other option is there?

Some people argue that the way to move smallholder agriculture forward is actually amalgamate smallholders into large farms and to use smallholders as labor on these farms. This is a false argument. It's a false argument because, once you do amalgamate these populations into larger farms, then the binding constraint on that farm becomes the management and supervision of these dozens and dozens of laborers. And as that constraint becomes binding, you find these large farms moving away from labor, using more labor-saving technologies, mechanization, etc., and thereby displacing the very populations that these farms were set up to protect.

So that large-farm strategy is not the strategy that one can see working. Moreover, a large-farm strategy doesn't bring you poverty reduction in any of the historical evidence that we've got. Compare the historical development experience of China and Brazil. China and Brazil both have had fairly similar levels of agricultural development and productivity growth over the last three to four decades. But the poverty drop in China was dramatic right from the start, whereas in Brazil it took a significantly longer time period, and it was only most recently, with very proactive poverty-reduction programs, that we've seen drops in poverty levels.

Brazil followed much more of a larger-farm strategy, whereas China, as I mentioned earlier, was very focused on smallholder productivity growth.

So I don't think the smallness of the farm is the problem. The problem is the failure of the state to provide the technology, the infrastructure, the institutional environment, the incentive systems that allow smallholders to flourish. It's been the failure of the state to take it to the farmer. And unless you get the conditions right, you will not see the change taking place.

So what do I see as the necessary conditions for enhancing smallholder productivity? I see five of them, and they're very similar to what Howard Buffett said earlier, although we didn't share our speeches with each other.

I would say the very first condition is something we rarely talk about. It's peace, stability, and good governance. Without peace and stability, you just cannot have good agriculture. I mean, think about countries like Mozambique, Rwanda, Angola — think about these countries that have come out of decades of conflict and look at the way agricultural productivity has just turned around and is moving upwards in all of these countries. Then think about the farmer breadbasket of Africa, Zimbabwe, and think about the depressing, downward spiral that Zimbabwe is in. That's the difference in terms of peace, stability, and good governance. Mo Ibrahim's African governance index actually indicates that about 40 countries now have much better trends in economic and political governance. This is really good news for Africa, and it's beginning to show in the productivity trends for Africa. There are over a dozen countries that have now consistently shown positive agricultural productivity trends over the past decade.

The second condition is access to land and other production resources. This is absolutely crucial. Without secure access to land, you will not see smallholder productivity rising. The story of Vietnam is absolutely clear on this. Vietnam for decades was a food deficit country. In the '80s, by the late '80s Vietnam went through a liberalization program called *Doi Moi*. Professor Vo-Tong Xuan, who was very much behind that, is here right now. In this program smallholders were given their land back with secure tenure. They were given access to technologies, credit, etc. And what happened? Within three years Vietnam went from being a net importer of rice to the third largest rice-exporting country in the world. And Vietnam continues to be a major exporting country for rice. Such experiences have not been restricted to Asia alone. It's happened in Africa. Those of you who are Africans in the world will remember the Ujaama experiment that took place in the '60s and '70s and '80s in Tanzania, when all land was brought together into collective farms in Tanzania. Once that Ujaama experiment was dismantled and the land was returned back to the peasants, we saw a dramatic turnaround in productivity in Tanzania — not as dramatic, maybe, as in Vietnam, but still, significant improvements in productivity that continue until today.

The third condition is obviously investments in infrastructure and markets. Think about this. At the start of the Green Revolution in India, the rural density was around 400 kilometers per 1,000 kilometers square; this was around 1970. Compare 1970 India to where Africa is today. The rural density in Ethiopia is 40 kilometers per 1,000 kilometers square. The rural density in Senegal is 70 kilometers per 1,000 kilometers square. Unless we do massive investments in infrastructure, we are not going to see dramatic changes in productivity taking place. And if you don't have massive investments in roads, transport, irrigation, etc., you're not only not going to see incentives for increasing productivity – you're not going to see the market signals, the price transmissions, etc., that are so necessary for signaling to farmers what's needed by the market, outside market, etc.

The fourth condition is obviously technology, R&D, investing in R&D. And we know this meeting celebrates the power of R&D through all of the awards that have taken place historically. We know the enormous contributions of the stalwarts, like Norman Borlaug and M.S. Swaminathan, in creating smallholder transformation. We know the impact the CGIAR has had and the returns to the investment in the CGIAR, which have been uniformly high across the system and over time. The issue has not been the generation of technology itself. The issue has been the delivery, where we've all been not as good and not as successful. And it's the delivery side in terms of better local capacity, better extension systems, better input systems,

better output systems, financial systems. This is the area where we failed a lot in taking it to the farmer. Isn't it surprising that even 50 years after we started this extensive work in agricultural R&D we don't have one good example of a viable extension system that works at scale for smallholder agriculture? I think that's an area we need to be focusing on.

In terms of R&D, I think much of the initial, easy gains have been made. I think the next set of gains have to come by tackling the really difficult problems. The really difficult problems are on drought, are on high temperature, are on submergence, are on major pest problems — all related to crops that are important to the poor, tropical crops such as cassava, such as millet, sorghum, coffee, etc. — crops for which the OECD system does not have enough of a stock of research knowledge. I think as we tackle these very difficult problems, we need to be investing much more in tropical agricultural science than we are doing today, investing in things like understanding the physiology of the cassava plant. This is the type of work that needs to be done right from the start, right from scratch, rather than being able to transfer existing knowledge from OECD labs and OECD universities.

The fifth area is the whole area of incentives. The incentive issues are very clear. Without the proper incentives, you will not see increased productivity taking place. Farmers just will not make those investments without the right prices, without the right policy environment. We have made a lot of progress in this area, but we still have a long way to go. We have a long way to go at the international trade level and at the domestic policy level. At the international trade level, you still have enormous distortions in the market. Think about cotton. Think about the protection for cotton in OECD countries and the devastating effect it has on smallholder cotton production in West Africa. At the domestic level, countries are beginning to see the impact of discriminating against the agricultural sector, and they are trying to take measures. But there's still a long way to go before agriculture is on a level playing field with the rest of the economy, especially the urban sector.

There's been a lot of attention these days to using fertilizer subsidies as a means of boosting agricultural productivity for smallholders. I think reasonable people can disagree on the value of using a fertilizer subsidy approach. But I don't think there should be any disagreement that public money used for fertilizer subsidy programs should not substitute for investments that need to take place in R&D, in infrastructure, in financial systems, and by the institution building, etc. If it does, then the chances of sustainable, long-term productivity growth are in serious doubt.

Ladies and gentleman, those are the five components that I think are necessary if you want to have smallholder sustainable productivity growth. There is no silver bullet. Getting to smallholder productivity growth is a very complex issue, and we should be ready to work on all aspects of that complexity. And we need to be ready to stick on that problem over the long term if we want to be successful.

We are in a period of agriculture renaissance, a period of renewal of interest in the agriculture sector, a period of new hope for new investments, new donor support, new government policy and commitment for the agriculture sector. This is a great time to be working in agriculture. But it's also important for us to use this time effectively, to use this time to channel all of this new enthusiasm and all of this new money towards enhancing the lives of smallholders.

In closing, let me remind you and remind all of us of something that Bill Gates said from this very podium last year at this meeting. He said, and I quote, "Poor farmers are not a problem to be solved — they are the solution, the best answer for a world that is fighting hunger and poverty and trying to feed a growing population." Thank you for your attention.