

SPECIAL ADDRESS ON THE OCCASION: CARGILL 150TH ANNIVERSARY

David L. MacLennan

October 15, 2015 - 9:30 a.m.

Introduction:

Ambassador Kenneth M. Quinn

President - World Food Prize Foundation

So in introducing our next speaker, I want to start by pointing out that, at the end of the American Civil War in 1865 there were a number of really significant developments. The Moral Act was implemented, and all of the land grant colleges in America that are represented here began to be put in place to build the greatest aggregation of agricultural research science in human history. George Washington Carver was emancipated and eventually would come to Iowa and to Iowa State University for his education.

And in a small town named Saude in Northeast Iowa, a Norwegian family named Borlaug came across the Mississippi and settled there. At the same time another individual of Scottish ancestry crossed over from Wisconsin and started a business in a very small town. It would be pretty hard to find either of those towns now, but what started there has grown into an enormous institution and legacy that continues today.

Dr. Borlaug and so many Borlaug institutions represented here, including the World Food Prize, W.W. Cargill was the other man, of Scottish origin. When I met the CEO and our next speaker, David MacLennan, I was telling him how proud we are at the World Food Prize that we now have 11 employees to carry forward Dr. Borlaug's legacy. And then one of his staff pointed out to me that Cargill has something around 150,000 employees around the world to carry forward W.W. Cargill's legacy. So I've got a lot of catching up to do.

But I guess you know, if you've been here a long time, this is the third chairman and CEO of Cargill I have introduced at the World Food Prize. But it's my distinct pleasure to introduce David MacLennan to you on this, the 150th anniversary of Cargill. He's been a member of their board of directors since 2008. He held management positions at Cargill beginning in 1991. He's worked at various parts of the organization around the world, and he has another interesting Borlaug connection that I talked with him about, is that he went to Amherst College in Massachusetts and were known as the "Lord Jeffs," the worst team name in America. And, of course, when you're in Massachusetts, you have to be a Red Sox fan, and Dr. Borlaug did his USDA internships there and became a Red Sox fan.

But then they both became Minnesota guys. And David MacLennan is involved with the Minnesota Business Partnership, the Greater Minneapolis St. Paul Regional Economic Development Partnership. And we're always a little leery of guys from Iowa who go to Minnesota, but in these two cases we're really glad about how it worked out. Cargill is has been

wonderful and generous to the World Food Prize, for which we're very, very grateful. And it's now my pleasure to introduce to you the CEO and chairman, David MacLennan.

David W. MacLennan
Chairman and CEO, Cargill

Ambassador Quinn, thank you very much. And Ambassador Quinn is exactly right – the nickname of my college, the Lord Jeffs, is the worst in all of collegiate history, something I have to live with.

But it's a pleasure to be here today and to be part of this year's Borlaug Dialogue. And, Ambassador Quinn, thank you for inviting Cargill to be part of this. And let me first offer my congratulations to this year's World Food Prize Laureate, Sir Fazle Hasan Abed, for your extraordinary efforts to reduce hunger and poverty.

The opportunity to be here today is very special for us. And just as you're celebrating Norman Borlaug's 101st birthday, we're celebrating our 150th.

It's fitting to be speaking here in Iowa. This is where Cargill began 150 years ago – Conover, Iowa, which is about 180 miles northeast of here. Like many entrepreneurs and farmers, W.W. Cargill took a risk in 1865 when he built his first grain elevator on the railroad, connecting the American frontier to the markets back east. I'm sure W.W. Cargill thought Conover would be a future hub and a great place to start his company, but he was in for a surprise. Two years later, they moved the railroad on him. Conover was soon a ghost town, and W.W. Cargill was forced to move. But I think it's an important lesson for those of us involved in the food chain. Change in the global food system is constant, but change has also driven enormous and incredible gains for humanity, too. If we learn the right lessons from history, we can meet what Ambassador Quinn calls the biggest challenge we face in the generation – feeding more than 9 billion people by 2050. These are the topics I want to talk about this morning and how we got to where we are today, why we're optimistic about the future, and the choices we need to get us there.

So where are we today? While food is vital to local cultures everywhere, we have a food system supported by a global network from farm to fork, with many factors triggering shifts and disruptions in food, price, production, demand and distribution. These factors include weather, urbanization, infrastructure (or a lack thereof), government policy, demand for bio-based products, mandates for biofuels, shifting appetites, and of course climate change.

It's easy just to say we need to feed 7 billion-plus people and 9-plus by 2050, but that oversimplifies the picture just a bit. For instance, nested within that growing population is a rapid expansion in the global middle class. Take a look at this chart. These figures are from a study by Brookings that look at the number of people in the global middle class in 2009 and in 2030 and middle class being defined here as living on \$10 to \$100 a day.

So look at the growth. You can see over these decades, Sub-Saharan Africa in the orange will triple; Mideast and North Africa, the yellow, will double; and in Asia, that last band of blue, a region that already has far more people than agricultural resources to feed them, the middle class is expected to increase by more than six times.

So why does this matter? While the rising standard of living is a tremendous story, it will also put new strains on our global food system. When people's incomes rise to this bracket, research shows that they tend to change their diets, shifting from staple foods to more fats, oils, proteins. So it's not just a matter of feeding more people, it's also a matter of changing demand. There's no doubt we'll need more food to meet this demand – how much more is up for debate. Depending on who you ask, it could be anywhere from 30% to 70% more than what we produce today.

Furthermore, I think we all know we need to produce food more sustainably. We have one planet with limited resources, so feeding 9 billion will require us to change our thinking and change our actions. Consider these statistics from U.N. Agency's report, which says agriculture accounts for 40% of global land use, 70% of freshwater withdrawals and 24% of greenhouse gas emissions, including from deforestation. Climate change is already impacting crop yields in some parts of the world. We need to help farmers be more resilient in this changing environment. It's one reason why Cargill and other leaders from the private and public sectors took part in the Risky Business Project over the past year and a half to try to help the business company understand the potential economic impacts of climate change, especially within the food and agriculture system. It's also why we're looking forward to Paris this December when leaders from around the world will seek to enact meaningful policies to ward off the worst effects of climate change.

If we don't continue to intensify our production, getting more from every acre of land while also building resiliency into the system, we could end up in a vicious cycle where lower yields force us to bring more land into production, use more water, more fertilizer and only to further damage the climate and watch yields continue to decline.

There's also forces pulling the food system in other directions, too. For instance, many consumers today are demanding to know more about how their food is produced – where did it come from, who made it, how was it grown, how was it processed, what ingredients does it have, how were animals treated, and how were the people who made that food treated? And most of all, was it done in a responsible and sustainable way?

In some cases, meeting these demands will require specialty supply chains that are more fragmented and more expensive. They work against the larger trend in providing high volumes of safe, affordable, nutritious food, which is the trajectory we've been on and which I'll talk more about in a couple minutes.

In addition, I think one of the greatest challenges we may face may be the public skepticism of science itself. As this *National Geographic* cover from the March issue declares, it's almost as if there is a war on science. It points out that people doubt the science of everything from GMOs to climate change to even whether we landed a man on the moon.

Last year, Jimmy Kimmel, an American late-night talk show host, did a segment on his show, interviewing people at a Los Angeles farmers market. First he asked people if GMOs were bad for you, and they all responded yes. Then he asked them to define what a GMO was, and only one person that he asked could come up with the answer. There's a lot of lack of knowledge, and there's a lot of misunderstanding about what GMOs are and the benefit to the food system and to agriculture. And although GMOs aren't the only solution to feeding the world, they do

help us produce more food with fewer resources and less impact on the environment. And other scientific research on everything from yield growth to drought resistance has allowed us to get a lot more out of our food system.

So take a look at this chart, which demonstrates what science has done for just one crop, which is near and dear to our Iowa farmers – corn. This shows U.S. corn yields from the time W.W. Cargill founded our company up to the current day. What you can see is that, during Cargill's first 50 years, corn yields remained virtually flat at about 20 to 30 bushels per acre. But around the time Norman Borlaug was just learning to walk on his family farm here in Iowa, scientific research was providing breakthroughs to change things. Advances in seed technology drove the first yield on increase on family farms, generating surpluses and higher incomes. Eventually, Borlaug was able to go off to college, up the road here at the University of Minnesota, and find a better life, something he ultimately repaid to the world countless times over, thanks to his own research.

In Cargill's second 50 years, yields began to rise dramatically, thanks to the research of previous generations. And in the last 50 years, genetic modification and other breakthroughs have added further gains. Today yields are six to eight times higher on average than they were when Cargill was founded in 1865. Can you imagine the reaction of Borlaug's parents if he told them the 20 to 30 bushels of acre they grew would one day rise to 180, 200 or more? They would have laughed in your face. And if you had said that 40% of it would go into gas tanks and much of the rest would go to feed pigs in China, they might have chased you off their farm with their own pitchfork.

But this is what science can do. Norman Borlaug believed passionately that research and investment in science could feed the world. Who knows what further advances the future could bring? We won't find out if we reject science and refuse to make use of its potential.

So with all of these issues, it might be easy to get discouraged, yet at Cargill we're optimistic, so let's talk for a minute about why. From our vantage point, we are seeing a lot of positive change.

First, companies are reducing their own impact on the environment and pushing their partners up and down the supply chains to do the same thing. Second, we're improving our understanding of those supply chains and learning how they can be managed more efficiently. And, third, farmers of the world are changing how they grow crops, whether it's a farmer in Iowa using satellite technology in the cab of his tractor to grow corn on a thousand acres or a smallholder in Zambia growing crops to feed her family on just one acre. Growers everywhere are improving the practices they use to grow more food in a more sustainable way. And fourth, we're seeing more collaboration. Consider, for instance, the New York Declaration on Deforestation at the U.N. last September, which drives to cut deforestation in half by 2020 and end it by 2030. Private companies like Cargill endorsed it, but so did governments, civil society, indigenous peoples, and the communities which are impacted.

So what are some other sources for optimism? I mentioned we'll need much more food by 2050. Producing that additional 30 to 70% seems daunting, but this chart reminds us that we've already accomplished that challenge in the recent past.

When I was a young kid, about the time Cargill was turning 100 in the middle of the 1960s, there were a lot of doomsayers about the state of the world. The global population had surpassed three billion people, and a lot of smart people were convinced there was no way we could feed them all. But one very influential book was Paul Ehrlich's, *The Population Bomb*. It predicted global famine, mass starvation and a collapse in the social order. Did that happen? It did not.

As this chart shows, from the 1970s to today, we more than doubled the total production of food—look at the dark blue line at the top—and we did it without bringing much additional land into production, indicated by the green line at the bottom. The one reason we're able to do this is because of Norman Borlaug's research into hybrid strains of crops that were heartier and produced better yields, and this led to the Green Revolution. Today we feed more than seven billion people on the planet. Yes, undernourishment remains a very serious issue for many of those people but not because the world fails to produce enough calories. It's poverty that determines whether people get enough to eat.

So here, too, we have reasons for optimism. Look at this chart, which shows that food is becoming cheaper in most countries, and this includes developing countries where food has traditionally made up a much higher proportion of a family's income. Certainly, there's bumps along the way, but through all recent decades, the downward trends of these lines indicates a massive rise in the global standard of living.

Look, for instance, at China and India, the two green lines. They represent a significant chunk of the world's population who are living better as the relative price of food goes down. If poverty is the major cause of hunger today, this chart shows a very encouraging trend that indicates we're on the right track. Many of us at Cargill have seen this improvement take place in real time during our own careers.

But this isn't to say there aren't rocky moments, disruptions and setbacks. Even here, we still think, we still believe progress is being made. Several times in the last decade, governments imposed export embargos in the middle of temporary crop shortfalls. While they intended to protect their nations' food supplies, what happened was these actions had the reverse effect of actually lowering the world's total food security by discouraging farmers from planting crops in subsequent years. We saw this happen in 2008 and again in 2011.

What we're learning in 2012, a massive drought hit North America, corn yields plummeted, global stocks were already very tight; people were wondering if we'd run out of food. Certainly, all the components seemed to be in place for a perfect storm. Did that happen? No, it did not. Governments stood back and let their markets do the work. So, even though crops in North America wilted, farmers in South America, Europe and Australia got the right price signals and ramped up their production. The global system proved to be resilient and self-correcting. Maintaining open, free trade was essential to helping food get to where it needed to go. But, although we see progress, how do we make sure the system stays resilient, and how do we make sure it'll be ready to meet the needs of tomorrow? Just as we're facing rising pressure from those factors I mentioned a few minutes ago, increased urbanization, shifting diets and climate change.

In a few weeks, the World Wildlife Fund, Cargill's and others will put these questions to the test. We're calling it "Food Chain Reaction." It's a global food security simulation set in 2020 designed to think about how people will react in a crisis and how we can avert disaster. During two days, about 60 real-world policymakers will represent different global power in the game. They'll have big, complex challenges thrown at them in order to test how could these stresses impact the real world.

We hope to learn a lot from this event, but while we wait for the experts to play out the game next month, here are a few things we believe are good choices based on 150 years of experience:

First, honor comparative advantage. The world will always produce the most food the most sustainably when farmers plant the right crops for their soils and climates and then sell into open markets where food moves freely. Can we grow oranges here in Iowa? Absolutely, but I don't think we should. Could we grow wheat in Saudi Arabia? Yeah, we probably could. Again, probably not a great idea. Do what you do best. Grow the crops that are best suited for your climate and for your soil.

Second, trust trading partners. Consider China. The Chinese wisely decided to entrust the Americas to grow their soybeans to feed its animals, and the world is much more food secure as a result. Resist the urge to go after domestic food security. By the way, if you're wondering about this photo, this is actually a ship leaving the West Coast of North America, headed for China and full of soybeans.

Third, enact smart public policy. We've just seen 12 nations come together to a historic agreement just this month – the Trans-Pacific Partnership, TPP. Although everyone is still looking at the fine print of the deal, we believe pacts like this will help the world feed itself. When nations do what they do best and then trade with one another, it's better for farmers and it's better for consumers. We should promote harmonized standards on things like food safety, which otherwise could work as a barrier to trade. And we should support policies for development and aid that reduce global poverty and hunger, like the Global Food Security Act here in the United States.

Fourth, let markets work. We need to honor the incredible signal of price and price signals, which help farmers know what and where to grow. As we say in Cargill, "Price is the best fertilizer." For strong markets, we also need to build robust infrastructure. W.W. Cargill established his company on the expanding railroad for a reason. It connected the farmers here in the Midwest to the consumers in the East. We have to continue improving infrastructure in places like Sub-Saharan Africa, the Black Sea Region, Latin America, and, yes, right here in the U.S. There's no use growing more food if you can't get it to where it's needed.

Fifth, invest in innovation, from improved crop genetics to farm management to food safety. Rather than fear science, we've got to embrace it. Find ways to continue advancing food science to improve health and nutrition. And make sure we're doing our homework. The research of today will fuel gains of 10, 20 and 30 years from now. Norman Borlaug knew it, and we at Cargill know it, too. We need more research.

Sixth, pursue sustainability. We're doing a lot in this area, and we know more gains can be made. For instance, we've worked with The Nature Conservancy and others to monitor and

prevent deforestation in Brazil. Our ten-year program has helped cut deforestation rates by 80%. We're using drones to better manage and ensure sustainable palm production in Indonesia. We train hundreds of thousands of smallholder farmers around the world each year to help them raise their yields and incomes – and one component of our training is sustainable agricultural policies. We are reducing the impact of our own operations on the environment, even as we work with partners. At Cargill, we're proud to have been successful for 150 years. As a family-owned company, we always do our best to take the long-term view, and nothing is more long term than our ability to feed the world while protecting the planet for generations to come.

So lastly, in the famous words of Norman Borlaug, we need to take it to the farmer. We need to close the yield gap between farmers in developed and developing nations. We need to provide clear land rights so farmers can pledge their land as collateral and reinvest in their operations. We need to give them access to financing and inputs so they can grow their crops. We need to develop the tools to help them be resilient in a changing climate. We need to make sure their communities are vibrant and strong, so their kids can go to school. And we need to make sure when they come home they will have a viable economic future.

Doing all of these things, I believe we can collectively meet the challenges in front of us, just as generations helped us to get to where we are today. It's been our purpose at Cargill to nourish people for 150 years, and going forward we are honored and privileged to play our part in building a world where everyone has access to safe, affordable and nutritious food for an active and healthy life.

It's been an honor to speak to you today, to be part of the Borlaug Dialogue. Ambassador Quinn, thank you for inviting Cargill, and thank you to everyone in the audience.

Ambassador Quinn

Wasn't that great? Well, thank you, thank you, David MacLennan for this outline. You weren't here yesterday – some of your folks were – when I explained that this is really a course, and there's a final exam tomorrow at 11 a.m., so I want everyone to know this will be on the test. But that's right, exactly. Thank you again so very much for being with us.

So this is an incredible morning. We've started out with the chairman and CEO of Cargill. At 11 o'clock, Jim Borel, senior vice president from DuPont will be here, and then at 11:30 we'll have Chris Policinski, the chairman and CEO of Land O'Lakes. I want to say, Cargill also is doing this wonderful Cargill Global Scholars program. Dr. Borlaug would be so happy with what you're doing to inspire the next generation in that regard. And Land O'Lakes has a similar program of Emerging Leaders. So thank you again so very much.