

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?
October 19-20, 2006 - Des Moines, Iowa

SESSION ONE: Looking Back, Looking Forward
October 19, 2006 - 8:15 a.m. – 10:00 a.m.
Roger Thurow

Sir Gordon Conway

Our next speaker really is representing two people, Roger Thurow and Scott Kilman, who are on the platform today. They are not people who are as much in the limelight as Ismail Serageldin and M.S. Swaminathan. They are really the people who in some ways create the limelight. For those of you who read *The Wall Street Journal*, anything that you read about development or agriculture or food security is likely to be written by them.

And last year FAO recognized them jointly with the A.H. Boerma Award for raising public awareness of agriculture, trade and food policy – making explicit the fact that they write about these topics in a way that is captivating and not dull.

They're both graduates from the University of Iowa, so they've come home, which is rather nice. I'm going to ask... I think Roger is going to speak and Scott is going to answer all the questions – is that right?

From Food Production to Hunger Reduction: In Search of the Missing Link

Roger Thurow
Senior Writer
The Wall Street Journal

Scott will answer the questions, but behind every reporter stands a brilliant editor – or they think they're brilliant. Scott is. He'll also correct any mistakes I made and clear up any confusion that I sow, which is probably likely.

We thank you very much for the honor of being invited to attend this symposium and to be on this very distinguished and prestigious platform and podium. But to tell you the truth, we feel like wedding crashers up here today. Gathered all around us are very distinguished humanitarians and scientists, Nobel Peace Prize laureate, World Food Prize laureates, and a whole entire roomful of brilliant and brave warriors in the war on hunger. And then there's us two. We're just a couple of newspaper reporters.

When Ambassador Quinn invited us to speak here, we were flattered but utterly baffled. We figured, what could we contribute to a symposium on the Green Revolution? We could list the things we have in common with Dr. Borlaug on two fingers. One – Scott, like Dr. Borlaug, is a son of Iowa. Two, I, like Dr. Borlaug, grew up wanting to play baseball for the Chicago Cubs, second base, I think, right, or shortstop? Somewhere in the infield. You know, it still might not be too late for us; given the wretched season of last year, I think they can still use us. I'm waiting for Lou Piniella, the new manager to call. I'll give him your phone number when he does.

But here we are in any case, improbably, on this podium. We stand here as observers of the original Green Revolution and the Green Revolution that is yet to come. With our reporting and writing, as was said, we can cast a spotlight on you all. We amplify your accomplishments, your ambitions and your dreams, and also your frustrations and disappointments. Most crucial, we can extend your reach to form the broad constituency that will be necessary to achieve a second Green Revolution. As we look back, we can stir outrage that the Green Revolution wasn't carried over to Africa and it slowed down in other parts of the world.

How dare we have brought hunger with us into the 21st century. You showed the world, you showed all of us, the way to boost food production and end hunger. But the world didn't follow through. We got busy and distracted with other things, by the pursuit of other holy grails. The same generation that has given us the Internet, an amazing communications technology and capability, has failed to feed all of its people. How preposterous that the roll call of the hungry is rising again at the same time that food production is greater than ever before.

As we look forward, we can proclaim the promise and the hope of the coming second Green Revolution. Journalists by nature are cynics, and Scott and I are cynics, Scott and I are no different than this. But as we survey the horizon, we see the various forces coming together that can fulfill the dreams, and your dreams, of a Green Revolution in Africa.

Unlike the daunting challenges that face us on other fronts – eliminating AIDS, finding a vaccine for malaria, curing cancer – when it comes to boosting agriculture production, the scientific breakthroughs have already been achieved. We know what to do and how to do it. Now we only need the will, both popular and political, and the moral imperative to do it. So here is our role. We and other journalists can help create this constituency by uniting the momentum that we now see building behind a second Green Revolution.

We see it among the churches, the preachers and their congregants who are rising out of the pulpits and the pews to resurrect the central mission of all religions – feed the hungry – and place it at the top rung of moral values, where it belongs. We see it among the universities, once again seeking to spread their energy and intelligence to the rest of the world by enlisting their students and their professors in the Green Revolution and the work and promise of the second Green Revolution.

We see it among business leaders and corporations and philanthropists who are searching for ways to do some lasting good with their wealth and expertise and are discovering that the new Green Revolution is within reach. We see it among economists and development experts

who may have once looked agriculture development with disdain and who are now rediscovering that the 70% of Africans who live in rural areas and who depend on farming must be the engines of economic growth and wealth building and poverty reduction on that great continent.

When a scientist shows a farmer how to increase production by 5 or 10%, that's wealth creation. We see it among policymakers who intuitively know that the war on terror needs to include a war on poverty and hunger. We see it among the many ordinary people out there who believe that overwhelming problems can be solved and are being empowered by the notion that individuals can make a difference, that buying a cow for somebody in Africa or helping with the harvest or buying malaria bed nets are simple acts that can make a difference.

If only we can enlighten and motivate all these constituents the same way that you have enlightened and motivated us – Scott and myself. We've had the privilege of speaking with many of you over the past several years, and your words have truly shaped our reporting and fueled our passion that hopefully we bring to our writing.

Dr. Swaminathan welcomed me to his foundation in India, where, over a bowl of soup (I think it was tomato soup; they have an outstanding kitchen at his foundation), he told me, "We have conquered the famine of food. Now we must conquer a famine of jobs." In that simple logic, I saw that in ending hunger, being able to afford food was as important as the ability to grow it.

Pedro Sanchez, in Kampala, helped us pull back the curtain on hidden hunger – the chronic, everyday hunger of poverty that never attracts the cameras. "Make markets work for the poor," he said, "stimulate the farmers, stimulate their purchasing power."

From the World Food Programme, we have heard the awful statistics: 25,000 deaths every day from hunger and malnutrition and related diseases – that includes six million children a year, six million. And from the World Food Programme we've also been shown the awful evidence on the ground. Before my first trip to the famine zones of Ethiopia in 2003, Volli Carucci, who's a World Food Programme staffer, and a water environmental expert in Addis. He told me, "Starvation is an ancient emotion. It is something people in Europe have forgotten about." And then he said, "Looking into the eyes of someone dying of hunger is a disease of the soul." That, I think, has propelled us in a lot of our reporting and writing, to invade this ancient emotion, to make it a reality, and to bring our readers into the eyes of the people dying of hunger.

And of course we've learned so much from Dr. Borlaug. One of our great epiphanies came when we plunged into the archives and read some of Dr. Borlaug's speeches, of which there are legion. In his Nobel lecture in 1970, there was this haunting prophecy. "Man can and must prevent the tragedy of famine instead of merely trying with pious regret to salvage the human wreckage of the famine, as he has so often done in the past. We will be guilty of criminal negligence without extenuation if we permit future famines. Humanity cannot tolerate that guilt."

We read that, and that was our 'eureka' moment in a sense. You know – Aha, we thought – there it is. We're crime reporters. In writing about hunger, we are writing about the greatest crime of all. This has inspired our writing for *The Wall Street Journal*, and it's also inspiring us now to pursue a book on global hunger. It will be a crime novel, decidedly nonfiction, of course.

Now let me take you to the crime scene and some of the victims and perpetrators. A turning report of our reporting was the Ethiopian famine of 2003. There we saw a perfect storm of famine and hunger, a massive crime scene that exposed the failure to extend the Green Revolution to Africa. And it also illuminated what would be needed to make a second Green Revolution fully blossom –the need to push the boundaries of the Green Revolution beyond the fields, to the markets, and the roads, and the rural infrastructure, and the policy change that aids the farmers and reduces their risks.

And we've brought along some photos for illustration. This is very exciting for *Wall Street Journal* reporters, unaccustomed as we are to great picture displays in our newspaper. It's my maiden voyage with the PowerPoint, so hold onto your hats. We'll see if this... they said anybody can work a remote control, so we'll figure if this works.

The Ethiopian famine of 2003 was extraordinary for its scope. For one thing, it occurred almost 20 years after the pictures and film footage of the 1984 famine in the Horn of Africa shocked the world. Some one million people died in that famine in 1984-85. We all remember the horrible scenes. It galvanized many people to contribute money, to arrange a massive concert to spread awareness, to shout forth pledges of, "Never again!" Well, 20 years later it did happen again, and it was worse. Far fewer people died in 2003, which is a testimony to the work of the international relief agencies on the scene and the willingness of the Ethiopian government to ring the alarm bells.

In 1984, you'll remember, the then-Communist government of Ethiopia tried to hide the approaching famine from the world. In 2003, though, far more people were actually on the doorstep of starvation. The number of vulnerable was estimated to be about 13 million people, compared to about 9 million in 1984. What happened? Lessons can be drawn from a number of tragic ironies we encountered in our reporting.

First, this famine showed that increasing food production isn't enough. The farmers and the starving children that you see in these pictures had had their best yields ever the season before. They applied the better seeds, they applied fertilizer, and they used all the techniques that they had been taught by the Sasakawa Foundation and other development programs. All across the fertile highlands, farmers reaped a bumper crop.

After the harvest, these farmers joyously carried their heavy sacks of surplus grain to the market town of Boricha. But when they got there, what did they find? They found that the prices had collapsed so much that the barely even broke even. Some actually even lost money, the cost of their inputs being higher than the prices they eventually received.

One farmer in a different part of Ethiopia, a large farmer with 2,700 acres of corn, told me that he had had his best harvest ever and lost \$200,000. So what did the farmers do?

The next planting season they cut back on expenses to cut back on their risks. They used cheaper seed, not the high-yielding variety. They used less fertilizer, some didn't use any. Some of them took land out of production. Some turned off their irrigation systems, fearing they couldn't afford the fuel to run it. They knew they would get smaller yields, but that was okay, as

long as they had enough to feed their families. What good had the surpluses done for them the year before?

Then the drought hit, reducing the expected lower yields even more. The farmers didn't harvest enough to eat. Their children began to starve. The farmers in these pictures who had carried surpluses to Boricha's market the previous year, now carried their starving children to Boricha's emergency feeding centers.

As we wrote back then, in the Ethiopian famine of 2003, the markets failed before the weather did. Tragedy was compounded by absurdity. While the country begged for food, great stretches of land in the country's wheat and corn belts were lying fallow or being underworked because of the disincentive of the price collapse.

This man, the one on the right with the boy in the white shirt in front of him, he sat in the therapeutic feeding tent holding his five-year-old son, Hagirso between his legs. That's little Hagirso in the white shirt. He told me a story. After barely covering his costs from the harvest the year before, and despite his surplus, barely covered his costs and actually may have lost money, he sowed cheaper, lower-quality corn on his three-quarters of an acre the next year, and he didn't bother to use any fertilizer. Then the drought set in, and most of what he had planted turned to dust. He was a man in great agony, both mental and physical. What, he asked, had he done to his son. It was a horrible question for a father to contemplate.

But the larger question that we all need to ponder is – What had we done this son? In 1984 we pledged, "Never again!" but what have we done to back up that pledge? Yes, a series of initiatives helped Ethiopian farmers boost production. But at the same time the government was being pressured by international lenders and aid donors to withdraw state support from the farming sector. There were no subsidies as to farmers in the U.S. and Europe get. There was no crop insurance. There was no government buying of crops to stabilize prices. There was no strategic warehousing system, no rural financing institutions, no domestic trading network to move the crops from the areas of feast to the areas of famine, no export relief.

Did we help Ethiopia build farm-to-market roads or assist in other large-scale rural development projects? Consider this: In 2003 the U.S. alone provided at least \$500 million in food aid to Ethiopia but spent less than \$5 million in agricultural development assistance there. We paid to feed the Ethiopians, but not to help them grow their own food.

Which brings us to our next photos. These show Ethiopian farmers and grain traders in their own private warehouses, standing next to their surpluses from the previous harvest. Now the ironic thing is that these warehouses in the town of Nazareth are just off the main road that runs from the Port of Djibouti to Addis. On this main road came nearly two million tons of food aid from the U.S. and Europe and the rest of the world, the bulk of it from the U.S. This aid undoubtedly saved many lives and was welcomed by the Ethiopians.

But it also added to the Ethiopian farmer's misery – for while American food aid streamed into the country, some of the Ethiopian harvest remain unused. This man, Jermana Mente, scrambled to the top of a sack of his grain bags – there he is – and he told me, "Take a photo and put this caption, "Ethiopia starving – please send food. Your readers will laugh." As

you all know, historically, U.S. food aid must be in the form of American-grown food. There is very little cash food aid. So rather than buy the Ethiopian grain that we see there, the U.S. sends over its own. Since the pledges of “Never again!” in 1984, did the U.S. give its food aid policy the flexibility so it could play its role in fulfilling that pledge?

These two gentlemen are wheat and lentil farmers. They are standing beside the same Jabudi-Antis road, watching the international wheat and lentil shipments roll past their fields. I show this to point out another irony that we uncovered back then. In the middle of the famine, a group of Ethiopia farmers and grain traders wrote a letter to their prime minister’s office, urging the government to buy local grain for food aid distribution before bringing in more from the outside. They warned domestic prices would continue to be under pressure as long as their warehouses remained full. Furthermore, using international aid, cash, to buy local production would create a market incentive for Ethiopian farmers.

At the same time, at the very same time, a coalition of U.S. farming groups was sending a letter to the White House. In that letter they urged more food aid exports, especially in the face of American surpluses. They wrote, “We believe the U.S. government should keep the ‘food’ in ‘food aid.’”

This man is Teskahum Valiju, who stands as witness to international policies gone awry. He’s a farmer near Lake Tana, a very, very bumpy ten-hour drive north of Addis. If any of you have taken that drive, you know what I mean. He’s standing near the Rib River, the water behind him, which flows into Lake Tana, which feeds the mighty Blue Nile. His crop died in the drought. He and his family had been receiving international food aid for several months by the time I caught up with him. All the while, the waters of the Rib River, which starts up in the highlands where they had been getting some rain, flowed past his land. “Why didn’t you use the water to irrigate?” I asked. “It’s not allowed,” he said. “The water is right here, but we can’t get it out.”

Decades of international water policy, stretching back to Africa’s colonial times, dictated that Ethiopia could do nothing to hinder the flow of water from the Blue Nile on its way to Sudan and Egypt – no dams, particularly no irrigation projects. Rivers originating in Ethiopia’s highlands, like the Rib, contribute 85% of the Nile water flowing through Egypt. While Egypt has millions of acres of land irrigated by thousands of miles of Nile canals, Ethiopia has less than 500,000 acres of irrigated land. This results in one of Africa’s cruelest ironies – The land that feeds the Nile is unable to feed itself.

Had the international community changed its water policy to help fulfill the 1984 “Never Again!” pledge? The Ethiopia as 2003, as we saw it, was the bridge between the Green Revolutions. The surpluses of 2001-2002 proved what is possible. The hunger and starvation of 2003 showed the challenges ahead.

The response since then, the many forces moving to make sure a second Green Revolution takes root in Africa, shows the promise that maybe “Never Again!” may really mean “Never Again!” Thank you.

Sir Gordon Conway

Chief Scientific Advisor, UK Department for International Development
President (retired), Rockefeller Foundation

Thank you, Roger. I think you all now can see the power of a good communicator, taking a story like the Ethiopian famine of 2003 and telling it in a way that makes it accessible to us all and in a way that diagrams and graphs can't do, and makes us all think. Thank you very much.

If we could have the lights up now in the auditorium, Ambassador Quinn isn't here to witness this, but we've actually finished on time. This remarkable group, we've finished... We started five minutes late, and we finished right on time at 10 o'clock, so we've got 15 minutes for questions and answers. Can we get the lights up in the hall as a whole so we can all see each other? Anybody out there, please? Thank you. I can see movement.

Question & Answer

If you want to ask a question or make a comment, you must do three things. One is you must walk up to one of the microphones that are in the middle here. I don't think there's any at the edge; I think they're in the middle. And secondly, you must say who you are, what's your affiliation. And thirdly, make a brief comment or question. It's not the time for anecdotes, much as I love them. Okay, so who's going to be first? You can make a general comment, or you can direct it to individuals? I can just about see you out there. I think we're going to get the lights up in awhile, but I can see there's somebody there. Go ahead.

Q Hello? Yes. I'm not affiliated with anyone. I'm just a fairly well-read amateur scientist. And you're talking about the four horsemen of the Apocalypse – pestilence, disease, famine, but no one is mentioning war or civil unrest or anything like that. And agriculture doesn't happen in a vacuum. If there isn't... you know, all the countries you were talking about where food production is flat, they don't have a government. A government is someone who has a monopoly on violence. And if there's civil war going on, you can't have good agriculture...

Thurow It's a good point you raised, and I kind of meant to point out, and I was actually hoping that someone would raise this question. In the background of some of those pictures I showed, particularly on the road from Addis and certainly as you take the road up to Lake Tana, you see numerous bombed-out and burnt-out tanks, other military equipment and hardware, that shows that in that time, obviously, in that 20-year period between '84 and 2003, between the two famines, Ethiopia had been in turmoil a number of times, had a very damaging war, which I think at one stage was eating up a million dollars a day. Obviously, that money could be far, far better used in agricultural and rural development. And that's also one thing very much that needs to be straightened out. The wars need to end, the corruption needs to stop, and the African governments also need to take responsibility and join the partnership with their international partners.

Conway Yeah, I think it's important to recognize that internal conflict has actually died down in the last ten years in Africa, despite what you read in the press. It is also important to realize there are many countries where there isn't civil war or war outside. Malawi is a good example, Zimbabwe is another, that have got enormous problems with food security – which have nothing to do with conflict but to do with the inadequacies of government getting the policies right. And that's true of Ethiopia, too. Please, sir.

Q Thank you. My name is Dean Kleckner. I chair a group now called, “Truth About Trade and Technology” here in Des Moines. I'm a retired farmer. I have served on the World Food Prize Council of Advisors in the past. Sir Gordon, to you, I guess: One of your earlier slides, one of the statements was – not all the poor benefited? Do you recall that one? I'm wondering – you know, that's a negative way to put it because some of the poor did benefit. I can't remember the exact context – that's been a long time ago this morning. But were you inferring that it was wrong because not all the poor benefited? It seems to me that many of the poor did, I repeat, and in fact probably nothing we can do that all the poor will benefit. Maybe I haven't made any sense, but just your response to “not all the poor benefited.”

Conway Well, the point I was trying to make is that it wasn't a hundred percent successful, and we still have 800 million people who are hungry. That's an awful lot of people. And that's even true in India, and M. S. Swaminathan maybe would like to say something here. The Green Revolution was a great success in India, and many poor people benefited because of cheap food and because of employment on the prosperous farms in places like the Punjab. But not all did. M. S., do you want to say something about this point? Swaminathan, would you like to say something there about why did not all the poor benefit from the Green Revolution in India?

M.S. Well, I think the poor, very poor... have no assets. The big problem, most of the people are hungry – what they call landless labor. And many of them live only by unskilled work, one dollar per day, two dollars per day. Unless we have a comprehensive asset reform— land, livestock, fishpond, or some productive asset including paradigm shift from unskilled to skilled work, so long as people are doing unskilled work, they will just yearn. As regards the benefit from the Green Revolution between the small farmer, the large farmer. In cases where there is irrigation, the case is not one of small and large but where they have water, then they're all taking to new seeds and technology. Purely rainfed areas, the risk is very high and usually farmers adopt what we call “risk aversion agronomy,” not production-maximizing and profit-maximizing. There have been whole series of government programs to try to see that the small farmers have access to credit. The most important requirement is credit and affordable inputs and an assured market. All these three are important. They are in place in some places, but I will say in a real context the real poor are those who have no assets at all. And so the government policy is to see what kind of assets, including livestock can be given.

Conway Thank you. You sir.

Q Yes. Terry Wallen with HEIFER International, NGO working around the world in many countries. And the comment that I would like to make is to raise the level of awareness of livestock and perhaps get a few comments from the panel. We've had tremendous and power-packed presentation this morning as well as yesterday and only a few comments about the role of livestock and the benefits to poverty reduction and provision of food and income to people around the world. And certainly in that cycle of productivity that animals have in terms of consuming the crop residues that poor people often are left with but at the same time producing meat, milk and eggs on a marginal scale for those people, how that plays into markets, small markets, when people have animals that they can benefit from the consumption as well as take to the local markets. And then the other piece of that that seems to me that's very important is the role of women in producing livestock as well as having a say in the communities. And so I'd like to hear a few comments about the role of livestock in food production.

Conway Ismail?

Ismail Yes, I think that's very important that livestock in relation to the complex ecology of the smallholder farmer is very important. They also provide not only milk or eggs in the case of chicken, but they also provide labor, power, engine. So, it's all extremely well integrated. Manure is reused, etc. There is a separate sort of issues associated with livestock, however. And that is that, as for example, in areas like China, with rising income. The diet is changing, and the impacts of that diet will be more meat input; and the more meat input therefore will require feed. Because China is already feeding over 22% of the world's population on 7% of the arable land. And that now raises a question about what happens to alternative uses. The conversion rates of grain being used by people directly or as feed with animals plays out differently in cases where it's generating pressure, as in, for example, China.

A different sort of question, which is also relevant is that in India, where for a variety of cultural reasons, there is not as much increase in animal meat consumption in relation to rising incomes, nevertheless, there's a question that about 400 million tons of crop residues are used to feed the 20% of the world's livestock, which is in India, on only 1½% of the world's rangeland. Now, that is crop residue has a high lignin content, because to prevent the lodging that we were talking about at the beginning. And that makes the stability of that not very high.

Now, finding techniques of breaking down the lignin cellulose layer, making that crop residue more digestible, could release part of the plant biomass, maybe as much as... For example, if you were to feed the same amount of livestock with 200 million instead of 400 million tons, that would release 200 million tons of the biomass that could go to greater production for humans.

So the level of livestock, depending on different levels, niches, combinations, looking at the macro, the cultural side, the country or globally, that is enormous. And it's a very important question, and I think it deserves a separate discussion.

Conway It's a very important point. I'm trying to remember how many World Food Prize winners got it for something to do with livestock. I think it's only three. It's Walter Plowright for the vaccine of rinderpest, Kurien for the dairy cooperatives, and Dr. Gupta for issues of fish and livestock, which we must, for agriculture. Is that right, or have I forgotten somebody? Only three. World Food Prize Committee – note that.

Q Yes. I'm Marshall Matz, the chairman of the board of Friends of the World Food Program here in the U.S. I guess my question is for Roger. Your comments about world food aid – you left me a little confused. Are we, in your opinion, at that point where we should be phasing out shipments of grain and just confining our food aid in the form of cash assistance? Or how do you see that?

Kilman We're like Penn & Teller—I'm the quiet one. We've written a couple stories about the food aid debate, and I think the question that intrigues us is – What gives you more bang for your buck? And if there's a famine in Africa, it takes several months to even a year to actually mobilize grain and get it to that spot in Africa. And I think one of the things that we've wondered about was, with the limits on financing for food aid programs, how do you find... What would be a better way to spend your money? Is it better to take the expense of sourcing the United States, paying for the shipping and the time to get it there? Or is it better to try to U.S. funds to source locally in Africa, which is something that Europe has done, to mixed reviews. That's a political debate that's been going on. And USAID has brought that up, and it's been resisted in Congress, primarily by the agricultural groups who are shipping the grain to Africa would benefit from it.

Q But do you have an opinion as to what you recommend—you know, what are you saying?

Kilman Oh, you want a recommendation?

Q Yes.

Thurrow Go ahead. We'll both, we have the same recommendations.

Kilman What we've written about is that there's been a proposal in Congress to try, what is it, 10% of the 20... There was 10, 15 and 25%. I think those different ideas have been floated, but it's never really caught on, right?

Q Right.

Kilman So, you know, in our articles for *The Wall Street Journal*, we don't take a position about, you know, we're not on the editorial page. But what we've written about, and clearly what we think is interesting, is there's this idea out there that really hasn't been allowed to take root. Read the book, and we'll tell you more about it.

Q Thank you.

- Conway It does seem to me that you do have to make a distinction between food aid at times of major famine and disaster. That's one kind of food aid. The other food aid is in situations of chronic hunger in which there are effectively bad policies within countries. And it's in that latter circumstance that you've got to try to reduce the dependency and find policies that get people off that dependency. Please, sir.
- Q My name is Noel Kingsbury. I'm a freelance writer currently researching a history of plant breeding. I'd like to raise an issue that I see only very rarely raised in the world food movement, and that is – which relates to what a previous speaker was asking about – livestock. So much of the world's food production goes to feeding animals, which we then eat. It's incredibly inefficient. A vegetarian who eats only chicken can leave on something like square meters. A meat eater, especially somebody with the diet of the United States or Western Europe, needs three or four times that. Haven't we got a responsibility to promote a diet that's not necessarily vegetarian but which substantially reduces the amount of meat that's eaten?
- Conway Who wants to walk into that one? Ismail.
- Ismail Yes, and that's not the only kind of changes in the diet that are required. Obesity is on the rise everywhere in the rich and poor countries, as you well know, with all sorts of concomitant health problems. We also need to diversify away from the five crops that account for almost 95% of human consumption to what Swaminathan also refers to as not the coarse grains but the nutritious grains. And so there's a lot of things that have to be done on diet and I think for the health of the individuals as well as the health of the planet. A major problem.
- Q Yes, hi. I'm Ray Cesca from the World Agricultural Forum out of St. Louis, and I have a question for Roger and Scott. Fantastic presentation this morning and very inspiring. My question to you both has to do with the results of the report after you came back. And if nothing has changed since the time, what do you recommend that we do to make change that you see we need to do?
- Kilman Well, that's the issue that we're going to try to grapple with... next year. We're going to be taking a leave from the paper and report next year for a book that really tries to get to the heart of the issue of what needs to be done to change thing and how do you mobilize people – what's necessary to mobilize people to make a change. Because it's intriguing to us that, the time that I spend in Washington, that there's really not a political constituency for fighting hunger and famine for the sake of fighting hunger and famine. There are coalitions that are built up that tackle hunger and famine, but they do it because of their own self-interest – which is not a bad thing. You know, America is the most generous country in the world, and they've saved clearly millions and millions of people, maybe billions. But it's intriguing to us that to finally make that leap that Dr. Borlaug talked about in his speech when he won the Nobel Peace Prize, it seems to me there has to be a political evolution in our thinking of how we attack hunger and famine. And, you know, sitting here today I really don't have the answer. That's part of what we're going to explore. But I see indications of it. And it's intriguing to me that so many different people now are becoming interested in

issues of hunger in Africa, from Bill Gates to the mega churches in Houston. And that's part of what we hoped would happen.

Conway If I can just add to that, I worked in Ethiopia after the '84 famine. There's no technological issue. Ethiopians know how to produce big yields. They can do it. The issue is around markets, it's around input markets and output markets and government policies to do with pricing and so on and so forth and infrastructure with roads. It's getting the policies right in the government that's the critical issue. And that's what many donors are trying to do. For example, DFID, we give the Ethiopian government a hundred million dollars a year to try to help them get their policies right. It's not a technological issue. Madam, you've been very patient. I'll come to you next.

Q My name is Jocelyn Zuckerman. I'm from Gourmet Magazine and I had a question about – I think it was one of the commandments was to embrace biotechnology. And I know a couple of people have said that there's no scientific basis for the attacks on it. But I think the bigger concern for a lot of people is the issue of intellectual property. And I was wondering if someone could address – If these farmers are no longer allowed to trade freely seeds, the way they've done for years, won't that be a loss of food sovereignty? And if somebody could give me a scenario where that would work out, where that farmers weren't sort of losing power in that.

Conway Ismail.

Ismail Yes, well, I'm glad you raised that. I've had discussions with my friends who were in the environment movements who are scaring people with Frankenfoods and biotechnology is going to do this and that. And when I discussed the science with them, they said to me, "But do you really want to see three or four companies control 95% of the seeds of the world?" I said, "That's a different issue." The U.S. government and the European community have taken Microsoft to court for monopoly powers or economic concentration. They did not go about telling people – "Software is dangerous for you." And I think one shouldn't confuse the issues. We should really look at the issue of the concentration of intellectual property, whether licensing and other things can be done. The emergence of national seed companies in the developing countries will play a big role. And I'm happy to note that Mr. Barwale was one of the honorees here for having done just that in India. And thus the more that that will happen, the less likelihood of intellectual property being so closely held that it would not be accessible to the poor farmers.

Conway One of the answers is my acronym PPPs, public/private partnerships, which enable the plant breeders in countries like those in Africa and the continents like Africa to access the technologies. And the African Agricultural Technology Foundation, which was mentioned there and one of its leaders is here in the audience, is exactly that kind of operation that will allow these technologies to get into the hands of breeders.

Q My name is Richard Hall, a former member of the Council of Advisors. We heard some excellent presentations this morning, very thoughtful, and some wonderful

takeaway lines – like one liter of water is equal to a calorie or produces a calorie. But I would have like to have heard a little more emphasis on reducing post-harvest losses, which in some cases can run as high as 50%, sometimes a little more. Food lost after production is lost water, lost seed, lost effort, and a total loss. And that’s an important aspect of the fight on hunger.

Ismail Just very briefly – yes, it’s one of the items that should be looked at, and it’s also one of the areas at the beginning when I mentioned that we want fair markets from the world but also recognize that the bad roads, the poor conditions in the rural areas, the urban bias that exist in many developing countries are also contributing to that lack of access to markets with appropriate losses, sad losses in the post-harvest situations.

Conway One of the things we found in Kenya is that, when you create these cereal banks and farmers start to get good prices for their maize, then they really do look after the maize better and make sure their losses are less. Those banks, for example, those cooperative banks, will fumigate. In other words, once the incentive is there, you can get the post-harvest losses down.

Ismail One more thing. There’s also, I think, very important, two important factors, especially for Africa but for all the developing world. We are now witnessing also a very rapid urbanization, and that means that the impact in terms of food production will not only have to be in terms of lower prices, because most of the urban poor buy their food and therefore lower prices will translate into benefits for the urban poor, but the storability and transportability of the food production becomes much more important as more and more of it will be shipped rather than consumed in the local area.

Secondly, there will be a very basic need in Africa to think in terms of leapfrogging a lot of the technologies and in fact addressing a lot of these issues through some sort of innovation fund. And again I’m very happy that my colleague, Dr. Calestous Juma, is here, because he probably will speak to that, as he and I have the privilege to work together on the African Biotechnology Panel.

Conway My friend.

Q Yes, thank you very much. My name is Bob Hurt. I’m at Cornell University. A number of questions have been raised about food aid, its effectiveness, its cost and so forth. I want to recommend to those people who are serious, who are seeking answers on food aid, an excellent book by Chris Barrett and Dan Maxwell on the subject. One point they make in that, among a number of others, is that the quantity of food purchased for food aid in the United States is so small that it makes only a very negligible effect on the market; it has no impact on prices that farmers receive. And if that food were purchased, as we suggested in the recipient countries, it would have a major impact there, and there would be benefits there. They analyze a number of other issues, including the impact on the maritime industry, so I recommend it to those people who are interested in the whole issue of food aid. Thank you.

Conway I'm going to take one more. (I'm having a signal which I'm trying to read. She says, "That." I'm sorry. It's a sort of straight cut off. I'm sorry. We can't take your question. My apologies. It's got to stop right now, because the Secretary of Agriculture has come. But I would like to thank my fellow panelists. I think it's been a very lively, informative morning and above all a tribute to Dr. Norman Borlaug. Thank you all.