

HEALTH AND GLOBAL CHANGE

Dr. Yogesh Shah

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Ambassador Kenneth Quinn

President - World Food Prize Foundation

So now it's my pleasure to introduce Dr. Yogesh Shah from Des Moines University. Yogi is just - You know when somebody's important. I was talking to him, and he said, "Oh, yeah, I've just been invited to the White House. They're interested in my initiative." And, you know, I said, "Oh, that's cool." Wow! But I'm so proud. I'm so proud of him and what he's done. You know, he's doing things in Rwanda. He's started... And I'm really so glad that you founded the memory clinic, Dr., uh, uh, Shah, Shah, yes - I need that. So the old adage from Hippocrates, *Let Food be your medicine*. Here's a man who's taking that to heart. Dr. Yogesh Shah.

Yogesh Shah

Associate Dean of Global Health, Des Moines University

Thank you, Ambassador Quinn. Thank you, all. Thank you for coming. Let me ask you this question. For how many of you, is this your first Hunger Summit? Wow! Welcome, welcome. And for how many of you have been here more than five times for the Hunger Summit? Thank you for your support. Thank you, thank you, all.

So what I'd like to do is share in a few minutes my views about the health effects of global change, specifically the health effects of climate change. How many of you believe that our health is affected, directly or indirectly, due to climate change? Some of you, most of you now. Hopefully, in 15 minutes, at the end of 15 minutes, some of you will at least start thinking about how there is a relation between increased kidney stones to increased numbers of asthmas in our Iowa children, to water borne illnesses all around the world, due to climate change.

One more personal question, and then I'll stop asking you questions. So how many of you had your coffee before coming here. How many of you had to have your coffee before coming? So I've got good news and bad news. So the bad news is that by 2050 or by 2080, if we don't change anything about the way we handle our climate, we might not get to drink our cup of coffee. So the good news is, instead of killing each other, most of us would not be alive to see that day.

Each century has its own public health challenge. Climate health is ours. This was mentioned by Dr. Margaret Chan, the Director General of World Health Organization in Geneva, and that statement was in 2009. It's more true now than ever before, based on multiple international and national reports; this one is through the fifth IPCC report, the Intergovernmental Panel on

Climate Change, all the way through our own reports within the U.S. that health is directly affected due to changing climate.

And what I'd like to do is to share with you how that affects us. It's not all of us who believe in that, and that's fine. As a physician, as a geriatrician, my job is to educate and not get into the controversy: whether it's true or not, whether it's human made or not. I'm here to share with you that it does affect our health and show you some results of that.

Let me share this slide. This is through our CDC, which is the Center for Disease Control and Prevention, based out of Atlanta. This slide is showing that how, due to the basic changes of increased temperature, increase in the water levels in our oceans and increased temperature in our oceans, how it affects our health. All the way from increased days of pollen count in Iowa, by studies after studies have shown we have 19 increased days of pollen count, increased asthma in our children, and increased water borne illnesses around the world.

And out of that comes the conditions which we are not even prepared for. So if you'd ask Iowa physicians and healthcare providers two years ago – have you heard of a condition called, “chikungunya”? – most have not even heard of that. And now in our own state we have conditions which we never thought would happen, conditions like dengue and chikungunya.

Due to time, let me focus on the water issue today and give you some thoughts to take with you and hopefully throughout these next few days you'll be able to connect how the water issue and health and the food issue connects. The reason I feel that's important for us is – like most things in our society, whether it's health or other issues, the most vulnerable are the poor, the elderly, the children, who are the most affected, even because of water issues. And I strongly feel that water is life. It's an equalizer, meaning that we all can live without food for a few days to even a few weeks, but when it comes to water, whether it's in a developed country like ours here or developing countries, not anybody can survive more than a few days without water, some just for a few hours.

And the amount of water we waste in things like our golf courses and other places is just mind boggling, the millions of gallons of water getting wasted in maintaining our golf courses. The water is in food that grows from our agriculture, as some of you might know. And 60 to 70 percent of our water consumption goes into our agriculture, our food production. And as we know, in the next few years, to support 9 billion people, we'll have to have more production, especially coming from Africa. We have to have almost a hundred percent production increase in African countries for our agriculture, and we'll need more and more water coming out of that.

As you might know and have heard, whether it's California or South Carolina or in some parts of Iowa, it's in danger, our water is in danger. To get fresh, clean water, it's very difficult. Just to give you an example, if I was thirsty, and if I was to drink this glass of water, it's very convenient for me to pick up a glass of water in Iowa and in Des Moines and just drink it. But in most of the world, one-sixth glass of water is non-drinkable. Every sixth cup of water – which if you travel to countries which are developing – it's either dirty or has a lot of germs or bacteria; it's non-drinkable. But still people do drink it, and lots of people, 10 to 12 percent of our population around the world does not get clear drinking water. It's inequality.

Numbers would vary, so don't quote me on each number, but even for American standard, each of us probably spends about 176 gallons of water, while in most developing countries, in most countries in Africa, everyone has about 5 gallons. And this 176, if you come to my house, you'll know why it is. Showers in my house by my teenage daughter run more than 15 minutes, even in spite of telling her how expensive the showers can be. If you consider the other bigger picture – use of water for managing our coffee, in a cup of coffee or burger, how much water it takes for the rest of the things that we consume, it can go as high as 2,000 gallons per American. Compared to the rest of the world, compared to European countries and Africans, we take almost two times more.

So the reason I feel strongly about the issue of water and health and the global chain is, and especially going and focusing on the issue of girls in STEM for our Borlaug Dialogue this time, that in Africa on an average, a woman or girl who ends up going to school, has to walk three miles, almost five kilometers, to fetch water for the family, about 30 to 40 pounds of water, which will last for that family for that day. The five kilometers we all do for cure of the cancer to happen, and they have to do it every day, just to get water to survive.

And I feel strongly – and I've seen it in India and in many parts of Africa – kids die because of not having proper, clean water. Even now, even today, the causes of death from unclean water and diarrhea related deaths in the world are more than people who have died during World War II. Numbers are so mind boggling; we can't even imagine that more than 2,000 children die every day. By the time we finish our hunger day today, more than 2,000 children will die around the world just because of diarrhea or water related illnesses. 2,000 – if you consider that in the number of planes crashing every day... So if you take a jumbo jet, jumbo has about 300 passengers on average, so that's anywhere between six to seven jumbo jets crashing every day, just because of the issues we've taken for granted.

So with that, I just want to stop here and take any questions if you have time for questions and share with you the importance of knowing the simple things about whether it's a water issue, whether it's a health issue related to climate change, and the food and the hunger, which are all for us taken for granted, and it becomes an academic issue, but they are a real issue around the world. So I'll stop here and take any question from you that you have. And thank you.

Q&A

Q [inaudible]

A So the question is – Since it's an issue, what can the average citizen, do? I feel... between trying to reduce shower time at my home. So I've got four different systems in my teenage daughter, Mia's, bathroom, where they're all the way from sound system to a simple timer, which has not worked yet, but hopefully someday. So if you reduce the amount of shower even by a minute, we all in this room, that can be a significant impact in the amount of water saved. So that, all the way from there to, as we know now in California and other states, the requirement for mowing and for watering our backyards, just being a little bit mindful will make an impact.

So I had a couple of students from Uganda, from Makerere University, they come to DMU every year for rotation. And they were here; they were just driving on Merle Hay near Merle Hay Road. And in Earl May, as you know, they were just watering their plants during a hot summer day, and the water was running on the road, which is normal for us – we don't even think about it. And those two, Peter and Charles, they were shocked. They said, "Dr. Shah, can you stop the car?" I said, "Okay." "So why are they watering the plants and water is all running on the road?" I said, "That, yeah, it makes sense." So it's simple - just being mindful of our water consumption can change, I think would change the way. Good point. Yeah.

Q [inaudible]

A So the question is – How would it help us to, by, if we save, water here in Des Moines today, how would it help people in California or people in Uganda? Great question. I don't know the direct food change effect or water change effect, but I think it's the concept. It's the mindset. So if... Going back to my daughter – and she's not as bad as I'm portraying her here in public – so if she becomes mindful that, hey, 15 minutes of shower, which can take about 80 to a hundred gallons of water, if I can reduce by two minutes, when she's traveling to California or when she's traveling to Africa, hopefully that will go down. And my students, as an educator, when I talk to them, they'll convey the message to their patients. So when they're traveling to those states in this country, that will get done.

So it's not a direct one gallon saving, one gallon effect – it's a long-term planning, which we all can do by just being mindful. This happened in many things, what we have done in our public health – and this is not the topic for today, but for smoking, for example. If this was 50 years ago in this room for this topic, many of us would be smoking, even including the speaker. But then slowly it changed. So I think it's a slow education change, which can happen. Good question.

Q [inaudible]

A Yeah, that's a good comment. I'm not an expert in that field, but I think the question as I understand... First, two comments, one comment was about comparing... See, most of the time what we do in medicine especially and many other fields, they make it so complicated, people don't get it. And if you don't understand, we can't do anything about it. Now if you heard that a jumbo jet can carry 300 passengers on an average, and what's the effect? That's what one of the comments was. Second is... how much do I know about having two sets of water – blue water and the regular use? I think in Iowa, some parts of Iowa we do have just for the backyard irrigation system – it's a separate system. But and even we can distribute and be mindful – I think it's a good idea.

Q [inaudible]

A So the question is, as you heard, and the numbers as I said would vary from country to country. On an average, about how far a girl, a woman, has to travel... And I'm saying a girl or woman, because it's still, that's the main source for water source and even

agriculture. Men don't play an equal part in many societies. So average is about 5 kilometers or 3 miles to carry the water.

What can be done to bring water? So I think some of the groups are here, and Floyd from Outreach Africa is here. What some of the groups have done is to have the water wells in each community, to have better source of water, and so that can be done. The rain harvesting has been done in India; there are groups which harvest water from the rain and then make it usable through the solar power. So those events have been done, but in fact it's so big we need... The need is so large compared to what resources have been done. It will take lots of resources put together. Floyd, yeah.

Q [inaudible]

A So what Floyd mentioned – I'm just rewording what he said; he's hopefully supporting what I'm saying – is that education, whether it's education here or education in Africa and some Singita region where he goes, educating people, children, would be one way to promote and do this. Thank you.

Q [inaudible]

A So the great comment from here is, those further back is – our national will about educating our children from early on, from elementary school all the way to high school, about conserving water at home and even in the school. I agree – I think it's a national will, but I think the step before that, as Floyd and others mentioned, just education. My daughter, and I'm sure many of you in this audience, if I'd asked you before this number and talk, say – What's an average consumption of water by an average American? – most of us don't know, and we don't know how much it takes to have a cup of coffee – before we drink that small cup of coffee, how much it takes to grow that plant, what does it take to have that hamburger before we take the first bite, how much water it takes. So just the awareness, hopefully, would bring the national will and do something about it. I totally agree. I think we have last, one more question, yeah.

Q It's interesting because, when I was in college in the early eighties, in science we talked about climate change. And, you know, we didn't have quite the concept of climate change that we have now, but we talked about, well, what if it gets colder, what if it gets hotter? What would happen – if it gets hotter, the poles start melting. And one of the things we never thought about was the fact that Greenland is melting and the effect that's having with all this excess water into the oceans. But at the same time, what happens is, when you add more water into the oceans, you add more water into the atmosphere, it creates more weather and, as we're seeing, dramatic weather. But at the same time, like in India, you have rain capture. I think in the United States we're going to get to a point where we're going to have to deal with all this excess water by capturing it and then being able to transport it to different areas in our country that need that water. And we're going to have to dramatically change how we deal with water and weather in this country.

A Good. Thank you. Thank you all. Thank you for your engagement and questions, and we have got a lot more speakers. Thank you.

Stephen Lauer

Thank you so much, Dr. Shah. You're educational, and entertaining, as always. He's kicked off our Hunger Summit for five, six years, always a pleasure.