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SDG 2 Transcript

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GF: hello everyone welcome Cheltenham Science Festival at home in association with EDF energy and this the first in our series of videos exploring the United Nations Sustainable Development Goals. Seventeen targets to transform the world, from responsible consumption to quality education. My name is Greg Foot. I'm a science broadcaster on BBC TV and radio also a podcaster, YouTuber and science communication trainer. And I'm really looking forward to hosting this, this series of six short conversations, supported by UK Research and Innovation. Each video is a brief introduction to one particular Sustainable Development Goal, one SDG. I'm going to be chatting with two new guests in each video. They may be scientists, engineers, activists, thought leaders, and they're going to guide us through the SDG and what we can do to achieve its targets. These videos are pre-recorded, but there will be a live conversation down in the YouTube comments, so feel free to put your comments in there. My guests will be in that chat as well, hopefully answering as many questions as possible. If you're watching this back later do carry on that conversation in the YouTube comments and also on Twitter as well. We use #cheltscifestathome. Today we are looking at SDG number two, zero hunger, which, as you expect is about ending hunger. But it's also its targets to achieve food security to ensure that food is nutritious and also wider than that to promote sustainable agriculture. Joining me to discuss what the current challenges are and what we can do to help, I've got director of the London International Development Centre, Claire Heffernan, and I've got professor of clinical and health psychology at University College London, professor Lorraine Sherr. Hello, both. Thank you for joining me. Claire let's start with you. I know your work is across a lot of different big challenges from climate change to antimicrobial resistance, to child stunting, which I think we'll get onto. We're, of course, focusing on food sustainability and availability today as well. Could you start off please, by sketching out the context, give us a sense of the current levels of hunger of malnutrition and what their impacts are. How big a problem is this worldwide?

CH: Great, thank you. Yeah, it's really difficult. One of the areas that we work on is child stunting. And there's 144 million children today that don't get enough or sufficient nutrition. It's an enormous global problem, when we're in this is so we have to look at these things is broader than just the number of hungry

people. We know that hunger is driven by conflict. There's a large amount of conflicts going around the world at the moment, so I think that when we think about SDG two, the other thing is the third portion of this is about sustainable production. So you know, there's a lot of in that, that we need to kind of get right. And I think by all accounts, it's very likely that we're going to meet the stunting target.

GF: I think I read that hunger is the leading cause of death in the world. Is that right?

CH: I think hunger could be, certainly when you take very vulnerable people, infectious diseases are one of the leading causes of death, certainly in the global south, and that changes, but yeah, hunger is part and parcel of this whole that makes people vulnerable. Inability to be food secure, makes people very vulnerable. Inability to feed your children has huge impacts on children, as they grow up, you know, stunting, we tend to think of it as just short stature. Well, it's absolutely not that. These children who are stunted have cognitive deficits. They have the inability to go to school and attend school and to flourish in school. They know that stunted children don't do well later on in their lives. So the implications of SDG two are very far reaching over the life course of these very vulnerable populations.

GF: Right, thank you, Lorraine, you're the co-director of the Global Challenges Research Fund. Thank you, Lorraine, you're the co-director of the Global Challenges Research Fund Hub that's working with adolescents in Africa, I believe. Can you paint a picture of what the situation is like there with hunger and access to nutritious food?

LS: Well, our Hub is trying to look at something quite complicated, which is accelerators. We're trying to look at how you add on or combine or boost interventions. Very often, government says, well, we can afford this, but we can't afford that. Or, oh, you've got this lovely cash transfer, should we give up our feeding program. And we're saying no, no, no, it's fine, these combinations. So we find that hunger and food security, access to food. Just measuring did you go to bed without a meal last night, plays a role in very many of the emotional, physical and developmental and fun, enjoying life elements, for adolescents across Africa where we study. So we find that hunger is a real driver. Things like violence, things like cognitive development, and as Claire mentioned, things like simple elements of hunger, like feeding, breast feeding, breast milk. These are all complex components of life. And it's a vital prerequisite. And you need to find very clever interventions. It's not simply one of rolling out food. That's step one, it's much more complex. And remember that food is not just food, per se, but it's the social elements of preparing food, growing food, being in a home environment. And so the SDG allows us to look very much more thriving at quality, not just simple survival.

GF: It's interesting you say quality because it is worth stressing that people can have access to food people can eat a lot of food, but they can still be malnourished. It's much more about just the food. It's about the quality food. Is that right Claire?

CH: Yeah, absolutely. I mean, now we talk about the triple burden of malnutrition, before it was the double burden of malnutrition, where a child might be stunted and might have a micronutrient deficit. Now, it's a triple burden, you might have a stunted child, might have a micronutrient deficit and also might be obese. I mean, it's this is from eating very, very low-quality diet. And as food chains and food supply chains get more global, the quality of food that reaches these communities isn't necessarily enhanced.

GF: So I'm going to try to unpack what could be the cause of some of the causes, contributors to this malnutrition and this hunger. I suppose there, you know, there are three times more people on the planet than there were 70 years ago. So, so could we argue that it's a case of there are just too many mouths to feed? What do you think Lorraine?

LS: I think that's not very helpful. We've got the mouths we've got, let's feed them would be my approach. Our thing is to say, let's try and find strategies that will allow us to maximize what we can do and do it well. So paying attention to the components of the food, to the skills behind provision of food, and we have to kick start cycles. So for example, if you put cash into an economy, very small cash transfers, and you put good parenting, you do find very much better nutritional outcomes. And that's a strange relationship. What's going on there? Well, it's about the function of food and family. So I think we have to look at a much more sophisticated model than just a food delivery truck.

GF: Yes, because I think I'm right in saying that, I remember reading that globally, we produce enough food to feed everyone is something that, you know, people often say it's just that it doesn't get to the people that need it. Is that being that your experience, Claire?

GF: I think that we have to, if you look at the global food system, it's extremely unbalanced. You know, 80% of the trade in agriculture is by G20 countries. So food is produced in the global north. It's consumed in the global south, and we're going to have these disparities going forward. We know that when we have 11 billion people on this planet in 2100, and by the way we're beyond peak human, the rate of growth of the human population is now on the decline. But at that 11 billion point at 2100, we know that that 90% will be in Africa and Asia, a huge amount of people. So we know the geography of where food is going to need to be. So it's this disconnect, and we're seeing it already between production and consumption. So for example, like if you looked at milk production, globally, I think 45% of the milk is produced in the US 5% of the milk is produced in Africa, if you look. So what you have is you have these big food gaps, and we know

how fragile the food system is from the 2008 food crisis. And so we've had a warning, and here we are in COVID, with the same fragility of our food system, so it is very, very worrying.

GF: Yeah, I was going to mention coming COVID. I mean, you know, we're in a obviously very privileged position here, based in the UK and oh gosh, you know, we didn't have supplies of flour for a little bit and the price of eggs went up and you know, it was everyone was talking about it, but you've really sketched out the exact problem that it's, it's the flow of food and the imbalance between the location of production versus the worldwide consumption. So what steps do we take then to try to improve this situation Claire?

CH: I think, you know, there's an awful lot of work done looking at resilience, right, and trying to make small scale farmers more resilient. And I think that needs to be joined up. We also look at resilience at the national level. And researchers tend to look at well, you know, what are the grain stores look like? And at the global level, we look at, well, how does food move around? I think we need to link this up this notion of resilience and we need to have a better understanding of how the different pieces of the food system fit together. How far they can oscillate during a shock, and what are the things that are going to tip them over? And I think that we can start predicting that. So we can have a much more stable system versus what we have now.

GF: How do we change this system? I mean, what I'm interested to know, is it? Is it something that comes from the individual producers, the farmers say? Is it the level up? Does it come from industry? Is it government? Is it international kind of regulation and trade? And what do you think Lorraine on this whole kind of puzzle?

LS: Well, you know, we've learned from our Hub is we also very good standing on our soap boxes and directing the traffic. But actually, there's an enormous amount of adolescent agency. And I wondered if stopped and paused for a minute and actually looked at the creativity and the positive sides rather than ringing our hands, that Africa's adolescence, you know, aren't doing this, and can't have this, and that kind of negative scenario. We found enormous energy and vibration coming. So we should, let's ask them. And I imagine that if we could corral their energy, it would be an amazing tool that we could bring to bear on solving the crisis. We've got the crisis; we can see with COVID-19. As we're all sitting here. Nobody knows answers. We're trying solutions. But what do you do? Well, the first thing the African adolescents did was they jumped up, they started decorating face masks, selling them on the corner, and they've got just such good ideas and energy. Why don't we stop listening to the craziness of stupid responses, like selling commercial mantras, like wash your hands? We know to wash our hands, talk to them, just talk to them. Let's give them some agency. I think we'd be surprised.

GF: Yeah, I mean, I agree agency, local power, you know, supportive communities. Giving voice and you know, but it will get you further than you currently are, but is it going to solve this bigger problem? If it's a more international, a more global or governmental issue? Where do you think it sits on that hierarchy class?

CH: I think we need more investment. We need more investment into nutrition. If we're going to meet SDG two, we need more investment across the scale, to understand what resilience looks like, to understand what resilience looks like in a joined-up manner. You know, food are systems global now, we have to understand that. So I think I mean, I very much agree with Lorraine. Yes, there's a huge amount of untapped energy and potential, people know their own problems on the ground. But when you're bringing it up across scale, then we have different actors that we need to deal with. And this whole notion of building back better, I think that's a great thing. But like, let's build back stability into our food systems. Let's build back nutrition in our food systems. Let's start to, you know, get back on track with this SDG. And I mean, they've done studies, they know that I mean 65 million children over the next decade would not be stunted if we invested 7 billion each year of the decade into nutritional research programs. So we sometimes we know the answer, but we need the political will to get to the solution. And I think that that is a problem. And as Lorraine mentioned, sometimes the grassroots can really foster that and help that and push that forward. But I think we all have a part to play.

GF: Thanks, Claire. I want to get on to how we can improve the nutrition and what potentially the problems are for that. But first, I've been asked to tell you that Cheltenham festivals is a not for profit charity that works year-round to inspire the next generation of doctors, of scientists, of researchers. If you'd like to support this work and myself, the speakers and the other performers would of course appreciate it if you did. You can make a donation here: crowdfunder.co.uk/cheltscifestathome, thanks. Okay. So let's look at what the issues could be, I guess in relation to why the food is not necessarily nutritious enough to stave off some of these problems. Does it come down to soil quality? Does it come down to the actual food that's being grown? I'd like to touch on that, I'd like to touch on monocultures. Where do we start, Lorraine, what do you think the root cause of the non-nutritious foods is?

LS: Okay, so this is a psychologist speaking to you, so in a way, I think Claire is really the expert on things like soil quality and what we grow. And what I can contribute really is to try and look at the human factor in all of this. The decisions we make, the choices, we endorse, how we select, what we impose. And I think that there's a lot of decision pathways that lead to inadequate or incompetent food choices that perpetuate, and whose decisions are they? Well, you know, there's lots of liabilities from the government, from the investors, from the global markets, which perhaps we don't really understand it fully. But I think, from our Hub's point of view, where we've tried to look at, how do you add things together to get a better

effect, it would be a lovely model. And the model just shows that sometimes you just don't put one on one together. Sometimes you could put one, two and three together and get additions, get some extra boost. And I wonder if that model might really work in the food planning and the food rollout? Claire would be a global expert on much more of the nitty gritty of those challenges.

GF: All right. Well, Claire, let's dive in then. You know, as you say, Lorraine, personal choice, the psychology of it all, of course, is a factor. But what if the actual product isn't there in the first place? Is it the case that the food that is being grown in the food that is available to people all around the world in different areas, is not nutritious enough?

CH: I think that's a really complex kind of question to unpack in the amount of time we have. But I mean, I would say that I think there's a huge lack of diversity in diets. And we know that this lack of diversity plays out in very many different ways on children and adults, in particular, pregnant women. And this lack of diversity of a diet is one of the really critical problems. And we tend to all the way across the policy level, all the way from the farmer on up promotes specific crops. We promote specific types of livestock. And this has played out over the last 50 years. And what we have is we have crops that can be sold on the global marketplace. But we often have farmers who no longer plant indigenous crops, who no longer eating indigenous crops, the biodiversity of our systems has so shrunk that is a huge problem. And what that does is it makes our food system extremely vulnerable to pathogens and parasites.

GF: Yeah, that is indeed one of one of the explicit targets of SDG two isn't it, to increase and maintain genetic diversity? And so you're just getting into what the danger of that is, and how do we actually maintain that and spread it around the world?

CH: I think it's really complicated. Because like, for example, if we take the livestock sector. The vast majority livestock, live animals, are in the global south. The vast majority of production is in the global north. So, in terms of like livestock, what you have is for the last sort of 50 to 70 years we've managed in livestock development to take high producing animals from the north, and plant that genetics in the global south. And the long and short of that is, is we're not really prepared for climate change. These are temperate grown breeds that have been sort of cross bred and everything else to reside now in the global south. So different countries like India have tried to make policies around this. So you don't have these very high water consuming, high food producing, you know, the Rolls Royce cow that can produce lots of milk, but the systems, the systems in country, the system globally, is geared toward milk production and to maximize milk production, and to do that, you get breeds that will maximize milk production, it is not to have sustainable animals that can survive a drought. So production and sustainability, certainly with the livestock sector are anathema. They don't mix. And this is the bridge that we need to cross. We need to

create systems that can feed the world, that are much more sustainable. And these are, quote unquote, wicked problems. I think we need to do more than think outside the box. You know, we really need to change the way that we're dealing with them.

GF: Yeah, you sketch it out really wonderfully, actually with it with the cattle example production, verse sustainability. And then is there also the issue that, you know, locally, farmers, that you know, they are the experts in what they are producing what they are growing, but if somebody turned around and said, actually, we'd like you to take these new seeds, because of x, y, and z, or we'd like you to actually replace your cattle with this, this livestock? How would that go down?

CH: I think farmers under pressure the world over are very risk averse. You have to be if you could lose everything, particularly under the conditions of COVID. I mean, if you look at the UK farming sector, this is a, I think from, was it 2000 to 2013, we lost 20,000 farmers? The average income of UK farmers around 33,000 pounds. The average age of a UK farmer is about 55 and could be higher now. So the farming, these farming sectors globally are under stress. And then you're asking people that are under stress, to adopt new ways. And this goes from all the way to a small-scale subsistence farmer, say, in Kenya, all the way up to a UK farmer. No, you're asking people under extreme stress to adopt something new, to take a chance to take a risk, and sometimes they just can't do that. So we can't necessarily leave the responsibility of resilience to the farmer. You know, I think that there's a global need here, and that we need to play collectively.

GF: Because I mean, you know, the argument, the rationale could be, you mentioned climate change, continued continue climate change, we're going to have to have crops and cattle and food supply chains that are going to be able to deal with floods, droughts, all the issues that we're going to continue to face more of. And so that could be an argument to kind of put to these farmers but, Lorraine, in terms of from the psychology side of this, do you think that we could make local changes through global not just targets, but new rules, new ways of working? Do you think it would be accepted?

LS: Well, I think we're going to have to be very clever. So take, for example, we are living in COVID, and we've had the history of this virus, and you could see the avian flu epidemic. That brought up the whole issue of farmers needing to cull entire flocks. And if they had to cull the stock, that's a human decision, do they report, they risk losing their entire livelihood? And it's an interesting literature on how do you get people to buy in to the rules and regulations that you need in order to not be open to great immediate dangers, and we have to take that into account. People are risk averse, and people are sometimes altruistic, the benefits to the community, the kinds of benefits to their family, the financial incentives, the lifestyle incentives, these are all considerations that we have to understand. You do have to understand the human

economy. So in a way we have to start again and approach this from a very different way. Global is not about global profit. It's about global living, the global community. And that's a very different approach from global growth, global profit, which is a big driver at the moment.

GF: So if Claire I was to say, what would be your top three tips for, I guess, the UN and wider, all of us, for how we can achieve some of these wide reaching targets of SDG two, what would that be? I guess, essentially, I'm asking what does sustainable farming look like? And what's our role within it?

CH: I guess if I had to make a recommendation, I would say invest, invest, invest, invest, and then invest more. Because the more we invest in the space, the better and more sustainable our food systems will be. We know a lot of the problems going into this are our solutions. These are complex, interwoven, wicked problems that require interdisciplinary research for sure. But I think that there's solutions out there, it's not all technical solutions. There's a lot of behavioural solutions. There's just a new way of thinking about it. I really agree with Lorraine there. It's not, you know, food is a human right. I mean, we have to look at it in a completely different way than we have. So yeah, my recommendation would be, it's not too late, we can do something, we need more investment. And we need that investment now.

GF: I've had the opportunity, actually, with some programs I've made before just to see some of the technological scientific next steps, I guess, towards helping us make more resilient crops. So for example, rice that is more tolerant to drought and you know, adding more micronutrients into staple crops. And there's definitely some very exciting cutting-edge science that is being done right now, both in the UK and around the world. But I absolutely agree as well that, you know, as Lorraine says, it's going to be good to have the behavioural side. Think about human economy at the same time. What about then Claire, for us, as individuals, is there anything that we could or should be doing?

CH: Oh, I think that we should be aware of these populations out there. And I think that, you know, the SDGs are a great global platform. And now as these global platforms are starting to come under stress and criticism, I think we need to support them. I think we need to realize that this, you know, there's no political sort of big global agreement, that's perfect. But the SDGs really help. These specific populations are very targeted. There's a whole variety of indicators, and every single one of us can join in to support them. And I think that that would be in this particular political environment that we're in that would be standing up for us, standing up for global unity in a crisis rather than fractured nationalism.

GF: Beautifully put. Okay. And before I give you my last question, which is going to be about hope and optimism for the future, what I'd like to do with all these conversations for the SDGs this week is to give my guests an opportunity to ask each other a question, one last message. A big thank you to UKRI for their

support in this series of conversations all around the SDGs, the Sustainable Development Goals. UK Research and Innovation works in partnership with universities and research organizations and businesses and charities and governments to create the best possible environment for research and innovation to flourish. Through its investments for International Development UKRI is proud to support and contribute towards global efforts in achieving the SDGs. Okay, I gave you a second to ponder. Who has a question, Claire, do you have a question for Lorraine, perhaps?

CH: Sure. Lorraine, we know a lot about your Hub because I'm the PI of the Action Against Stunting Hub, and our Hubs are quite allied. But if you had to, what element of the work that you're doing in adolescence could tie into our work? How can we join forces?

LS: Well, there's something very common between what we're doing, which to me is about the quality of human life. And I think that's a thread that runs through what we're doing. And it resonates with not just this one SDG. The Millennium Development Goals were much about surviving, but the SDGs because they're so complicated, there's 17 and 169 targets, what it's really trying to say is there's more to life than surviving. And it's about going into the depths of the detail and bringing science and analysis to just make sure that we are looking at quality, not just quantity.

GF: Beautifully put. Thank you. Lorraine, do you have a question back for Claire?

LS: Will I do, it almost takes the conversation slightly further on. Because we always throw around this whole idea of stunting very glibly. And I'm just really in all of the work that the group is doing. My question is, are we being naive about how we measure stunting? And is this something more, more accurate, more clear, which could really give us a greater depth of understanding on what you're doing, because standing sounds to me a terribly narrow the word and a concept for the totality of what I believe you're doing.

GF: And also Claire, maybe just outline I mean, I naively assume it is, you said child stunting., so it's children who are shorter than expected height, I assume?

CH: Yeah, there's a very strict definition of stunting based on height. But we know and one of the things that the stunting Hub is working on is creating a functional definition of child stunting, not a height-based definition. And to do that we're using the whole child approach. So we're looking at the deep biology of these children, from the microbiome to, you know, the epigenetics, to the next kind of layer of the home environment and the risks that they face in the home environment, to the next layer out the institutions, cognition. How can we support? What does early childhood develop look like, to the social values, to the kind of environmental foods, the risks of all the way out to the marketplace. And from that, we are trying to

develop a functional definition of child stunting. And we're looking at our argument is, that all of this kind of work that came before us, there's been absolutely brilliant work, but there is no one silver bullet, and that we need to be able to understand different children have different components of stunting. So it's looking at creating a topology and looking at differences between children to work out how we can help them. Can we prevent and ameliorate stunting? And that's something that is very controversial. People will say, no, no, you can't, you absolutely can't. So we hope that this UKRI investment will enable us to do that and we can change the frame, change the way we look at it. It's not rocket science what we're doing, we're just using a much wider lens to look at these children and their lives, and to see if we can support and help them.

GF: Thank you both. So let's end then with just a couple of thoughts from each of you about your optimism for the future on achieving these targets of SDG two and what doing so, will enable. So, Lorraine, what are your positive thoughts about this?

LS: You know, I'm a real old optimist. If anyone had said to us three months ago, that something could happen that could totally freeze the world and generate everyone's attention and get the undoable done, you would have laughed. But look in the COVID response. That's what's happened. The world has stopped, paused, woken up, and it might be so good learning in that. So I think in terms of our interventions, that tells me that, you know, we can focus. We can get global attention and if we come up with something that really resonates, it can be done.

GF: Brilliant. Claire?

Yeah, I mean, I would absolutely agree with Lorraine on that. I think there is a solution space. And I think that we all need to get to that solution space. And we often try, in research certainly, we try to unpack and we unpack and we describe, but there is a point where we need to look at the problem, what the solution looks like, and work backwards to how we're going to get there. So I'm entirely confident, I think we could do it with child stunting, I think there is, you know, we're up against it. But like a lot of the SDGs I think COVID gives us a real shock to the system to think about how we want to move forward.

GF: Brilliant, thank you so much both. As you said earlier, Claire this is something that we could really get our teeth into for a very long period of time, but we want these to be short conversations this week. And it's been an absolute pleasure for you both to join me and kind of sketch it out and give different sides of this picture, so I thank you both for your time.

CH: Thank you very much.

LS: It's been a real pleasure, thank you.

GF: So there we go, what will I take from this? Gosh, really interesting to hear about that discrepancy almost between growing and production and processing of food and what how it happens global north global south, and how we need to have a more global conversation to look at those supply chains but also the importance of going from ground up as we heard about power of people, about the power of giving power, to listening to what those people say in their own solutions, how we need to build this resilience into the system in so many different ways on so many different levels, how it's about the quality of our food, how it's not just about surviving. It's also about wellbeing and enjoyment beyond that as well if we can get to that point. And that really, it's about being aware. It's about having these conversations. And as we heard at the end there from Lorraine, the belief and the optimism that it can be done. So I've really enjoyed this. I hope you have. Thank you so much for joining us. And thanks to the UKRI for supporting this, this whole series of six short daily conversations around the SDGs. There are loads of brilliant events happening as part of the I part of Cheltenham Science Festival at home to do check out the website. Check out the social media to see what's on and dive into another one of those events. today. You heard from director of the London International Development Centre, Claire Heffernan, and Professor of clinical and health psychology at University College London, Professor Lorraine Sherr. I'm Greg Foot. I am back tomorrow at 2pm and every day at 2pm during Cheltenham Science Festival at home. Tomorrow is SDG 14 life below water. So hopefully see you then. Thanks. Bye.

