Center for Strategic and International Studies

TRANSCRIPT

Event

AI for Food Security Forum

Plenary Panel II: Data Ecosystems for AI-Enabled Solutions

DATE

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FEATURING

Ruben Echeverria
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Kyriacos Koupparis
Head of Unit, Early Warning and Forecasting, World Food Programme (WFP)

Francisco Martin-Rayo
CEO and Co-Founder, Helios AI

Latha Nagarajan
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CSIS EXPERTS

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Caitlin Welsh: Thank you, Zane, and thank you, Philipp. Thanks so much for doing our first AI demonstration of this forum. If any of you have questions for Philipp, please find him at lunch or any of the coffee breaks at the reception. But, Philipp, I'm volunteering you to respond to continue the conversation with our participants.

For now, it's my distinct pleasure to welcome Rob Bertram to the stage to moderate our second plenary panel, which is on "Data Ecosystems for AI-Enabled Solutions." Rob is the newest member of the broader CSIS Global Food and Water Security team, having joined us as senior associate nonresident just a few months ago. You're welcome to take a seat. Thank you. (Laughs.) Thank you, Rob. Many of you know Rob from his prior roles, including as chief scientist for food security at USAID for over a decade. Rob is also today also chief scientist at the Food Security Leadership Council.

If you know Rob already, then you're aware that he has wide ranging scientific expertise and he's able to communicate complex scientific issues to a policymaking audience, which is why we thought he's perfectly suited to moderate the second panel of our forum today on, as I said, Data Ecosystems for AI-Enabled Solutions. We decided to host a plenary panel on this topic because throughout the discussions that we had, the research that we did leading up to this forum, we found that some of the most interesting conversations were around data.

That there are some really interesting tensions, for example, around those that thought that farmer data should be made available as a global public good, on the one hand, and then on the other hand those that said that that presents privacy concerns for farmers and also risks that this data could be manipulated by bad actors. So interesting tensions like this came out of our conversations. And also, we learned about interesting opportunities. So for example, the opportunity for interoperability among systems, that the data output, data exhaust from one system could actually be a data input for another system. So there's interesting opportunities we learned about as well, which is why we decided to host a full plenary panel on this topic.

So with that, enough from me. Look forward to hearing from you, Rob. Thank you. Floor is yours.

Robert Bertram: Thank you, Caitlin. (Applause.) And thank you for that very generous introduction. (Laughs.) Let me ask my fellow panelists to come up. Latha, please, and Ruben. So Latha, Ruben, and then we have one person on the way, and we have one person online who is coming to us from Rome. We all wish we were there. (Laughter.)

OK, so I'm very grateful that we followed Philipp, because Philipp talked about urgency and, you know, food system, food security failures. And any of you who have looked at Devex yet today saw some really upsetting news about what seems to be happening in both South Sudan, and then talking to FuseNet friends, the Somalia situation is very bad too. And I believe Ethiopia was mentioned. So we're – this is a real urgent problem right now in 2026.

I also want to run with that urgency ball to talk about the other side of undernutrition, chronic malnutrition, that's measured by child stunting. Colleagues, the latest data I could get, which I think is from WHO from 2023, it's almost 23 percent of all children in the world are stunted. That is a development failure. And those children are not going to be able to achieve their full potential. And, of course, for countries where this is rife, it also holds back the entire development pathway and economic growth.

And then finally I'll say that there's another looming crisis. And that relates to agricultural productivity. And when we talk about productivity, which can be measured in terms of dollars and cents and profitability – and we're going to be talking about that today – but it's also things like resource use efficiency, time allocation, drought tolerance, all kinds of benefits in terms of – that help millions and millions of farmers, and traders, and food system actors around the world get more from less in ways that that help increase food security for all.

So enter today's AI focus. So, gosh, 10 years ago we might have been talking about digital, right? And all the transformative ways – and I expect many of you have been part of those, that – and it seems to me that we're talking about like another quantum leap forward in that same space that spans the entire food system, farm to fork, and spans context, humanitarian context all the way to prosperous, efficient agricultural and food systems. So AI, though, as Caitlin pointed out, depends on data, and data dependency. And they're critical across that spectrum. So what we want to do with our panel today is take a look forward, looking around where we are and where we may be headed, and across that spectrum.

So I'm delighted with our first speaker – well, I'll just briefly talk about the span of our speakers. We have Kyriacos, who is with the World Food Programme dealing with emergencies. We have Latha Nagarajan from the Fertilizer Development Center, who is deeply involved in the primary production, including in low-resource contexts. We have Ruben Echeverria from the Gates Foundation, where they are looking across that production through to the food system. And then finally we have

someone on our way, and I'll just mention him now, Francisco Martin-Rayo from Helios, which is an AI company.

So we have people that are users as well as innovators. And I think that's one of the themes that I take away when I think about this, is that those of us who are users can also add to the innovation. But let me start with Kyriacos Koupparis from the World Food Programme, who I think can very much pick up on some of the themes that Philipp talked about. So, Kyriacos, over to you, please.

Kyriacos Koupparis: Thanks, Rob. Hi, everyone. Thanks so much for having me, and big thanks to CSIS for convening this very important dialogue on how AI can enable food security and support food systems overall. So I sit within the part of WFP that is mandated to provide data and evidence for informing our operational response as well as our advocacy and fundraising activities. And through this mandate we, of course, have been exploring using AI modeling in very similar ways that we've seen today, whether that's IPC forecasting that we saw from Philipp earlier, or other ways of modeling the different drivers and/or food security outcomes.

But underpinning all of this, and I know this is an obvious statement, is that we rely on a data ecosystem that WFP, and our partners, and local governments have invested in over decades. And a lot of this primary data – household surveys, food price data, for example, we collect food price data in 2,000 markets worldwide, climate data, and so forth – are what is used to build and inform these models, and what is ultimately going to drive decision making on the ground. And what we're seeing at the moment, in the last year and a half, given the, I would say, historic funding crisis that we're facing at all levels – local levels, national levels, and at the INGO level – a lot of these data ecosystems are at risk.

So to give you an example, in 2025 WFP alone collected 25 percent fewer household surveys. So from 1.1 million surveys in 2024 down to 800,000 surveys in 2025. And why this is important is because it effectively increases the blind spots that we, collectively as a humanitarian ecosystem, have. And that also means that we risk not seeing the next crisis. Now AI can definitely help augment the signals that we can extract from the data ecosystem. That does remain. But there is a risk here that there's a narrative that AI might supplant primary data collection. And that's definitely not the case. We have to ensure that these datasets remain robust. And we heard earlier from Philipp as well, that ground truthing any AI model will require primary data collection. So I do want to emphasize that this is a critical enabler to a lot of the AI work that we're seeing in the humanitarian space around food security forecasting and modeling drivers.

We're also seeing other foundations and donors taking note of this critical need. And thankfully we're starting to see some movements by the EU, by Rockefeller, by a few other key players in trying to find ways to sustain a lot of the local data ecosystems and the data collection that underpins a lot of this AI. So fundamentally, AI is a powerful tool, but it is predicated on having the data that underpins a lot of the modeling that we've seen today. And the one message I leave you is that we need to sustain those data ecosystems if we are going to really benefit from the AI capabilities that have been showcased today. Back to you, Rob.

Dr. Bertram: Thanks very much, Kyriacos. So basically, the message is we can't take data for granted. It's critical. And so I think other speakers can pick up on that.

So I want to turn to Dr. Nagarajan from the International Fertilizer Development Center. Latha, your organization has worked a lot at the coal face, let's call it, where smallholders – and smallholder farmers in places like sub-Saharan Africa can produce up to 80 percent of the food that's consumed. So this is essential for food security. How do you see AI stepping in and integrating into your work? And what do you see as some of the challenges going forward?

Latha Nagarajan: Thank you. Thank you, Rob. And it's great to be a part of this great panel.

And in IFDC, as International Fertilizer Development Center, we sit at the intersection of two different data streams. One, we do generate agronomic data from our extensive crop trials and crop responses, and also validating the data across all the ecological zones for decades, I would say. But this we do already within partnership with the national and also – national governments and also the farmers, precisely, and in some extent, the private sector also. The private sector plays a crucial role, especially in building our database, especially for the fertilizer market. You know, we do provide the market data, especially the prices, supply chains, consumption patterns, and everything, which is very crucial especially when Kyriacos talk about the crisis, the food crisis. At the downstream to project the food security outcomes the upstream data on fertilizer crisis, which we project a long time, you know, even before the food crisis hits. It is very important for those data so that, you know, the affordability and accessibility issues can be easily worked out. So it's not only generating the data but, again, converting the data into policy actions. It's also another critical area where we work.

In all these three areas, definitely I would say that AI can – AI-enabled solutions can really help us. One is the speed at which we can use the –

you know, we can put together the agronomic data for projections and hyper-localized solutions. It is possible that AI can be a very useful tool. And another one is, yes, we do have agronomic data and also the fertilizer market intelligence towards the food security, how we can use it for the food security outcomes. But we can always repurpose the data also for climate smart, carbon accounting, and many other – carbon sequestration, soil health-related issues are also there. AI can really help us in bringing together the data.

The major – one of the major issues that we find, or the concern with regard to using AI in this expansive scale, is basically at the moment data access issues are there, prevalent – still prevalent. It's siloed. For example, it would be a great idea to work with Kyriacos, especially in this crisis, because in the last crisis USAID brought us together and then we worked with – you know, with other organizations to come up with – come out of the crisis. So here, again, the data infrastructure and investment is the key. Especially for these foundational data it is very, very important.

And also to provide – AI is as good as what we give, what we provide. If you provide good data, definitely, you know, we would be able to get good predictions and the model – you know, the outputs out of it. So it is important that, you know, we have to also invest in the data integrity and also the foundational data infrastructure. And it is very important, especially the public investment always, you know, had higher returns of investment, which we came to know again and again in terms of our technology investment, and so – especially in agriculture. So.

Dr. Bertram: So we – again, this is where is that investment coming from.

Dr. Nagarajan: Coming from, yeah.

Dr. Bertram: You know, you mentioned governments and policy. And I appreciate that. You also mentioned the current fertilizer – or, the looming fertilizer crisis. And, friends, some of you have seen in our own papers worries about farmers across our Midwest in the Corn Belt who are concerned that they won't be able to afford fertilizer or the supplies are going to be affected. That is multiplied manyfold in the contexts that that we're talking about. And bear in mind already, Africa only uses 2 percent of the world's fertilizer. So a price shock is really – it was a crisis. We saw this in Ukraine. We may see it again.

So Ruben, Latha has added on to Kyriacos' start. How is the Gates Foundation looking at this as we go forward?

Ruben Echeverria: Thank you, Rob. It's a real pleasure for me to be here, because I'm not an AI expert. So thanks to my friend Rob and others I've been learning a lot in the last few days. And to prove that I'm not an expert, I prepared these notes myself. (Laughter.)

Dr. Nagarajan: Yeah, me too. (Laughs.)

Dr. Echeverria: So the first thing I want to say is that I personally bring a developing country type of perspective on this. The Gates Foundation believes, mainly because of our origin, where our funding comes from, that AI really presents – we're really excited, in the sense that it really presents a very timely – because the landscape, for example, for funding international research is not so good.

So this is very timely and very powerful tool to help reimagine this so-called transformation of food systems. We all talk about transformation of food system, even if we don't define from where to where to where we want to transform this. But there is consensus about this transformation. So for us, it's productivity top, first priority for that transformation, sustainability, and, of course, inclusion. So for us, in conclusion, it's not a solution. It's not the magic wand that will solve all issues in developing countries. For us, it's an accelerator tool. That's the way I think about it.

Picking up on notes from my colleagues in the Gates Foundation who really know about AI – remember, I'm not expert on this. So if you think about – we all look at small-scale producers in developing countries. Small-scale producers are not alone. They are part of a value chain. Some people call them the hidden middle, the missing middle of MSMEs all around. So we are also focusing on that ecosystem, not only on the small-scale producer but on the MSMEs. We think that the private sector can do a lot, small MSMEs, working input dealers, agro dealers, processors, all of that. So that's part of the – of the chain.

The other part that I'm picking up in my notes is that we are focusing much less on the algorithm – on the algorithms to develop magic too, because others are doing that so well, that we think the real gap is on the data, the quality of the data, as in the first part that was already said, and the delivery systems. So what? You can have a lot of algorithms and fantastic tools, shiny with, you know, bells and whistles. Who is going to deliver that? I don't think – and we can discuss, and I don't want to get into a discussion with the first panel – but I don't think there are all of those millions of public extension agents ready to go in developing countries.

I think the private sector producer organizations, the MSMEs in the value chain, can help. Of course, you need public extension, but at the moment they're not that strong to use all of that. So what it takes to scale? What we are funding, basically, is how to scale this accelerator tool, as we call it, right? So we are funding data ecosystems, universities. Somebody was sitting here in the first panel talking about the Gates Foundation from a university in the U.S. That's key for us. Our main partner in the developing world is, of course, the CGIAR. And they are all around this day here, so they can explain a bit better what they're doing. But for us, the data ecosystems is key.

The second big investment window for us is the digital public infrastructure. So this is digital ID, registry systems, data exchanges. And the third one is that delivery capacity. Despite what Kyriacos said at the beginning, that we need – I agree, that we need more – go and get more data. There is a lot of data out there that is not connecting to the rest. I've been around the CGIAR perhaps for too long. And the CGIAR is the best example – 40, 50, 60 years of collecting data. So that's why we keep funding the CGIAR. And perhaps Jawoo later can explain a bit better. How to connect all of these datasets will be a key.

And just to finish, Rob, I don't want to get too philosophical, but just to say –

Dr. Bertram: Please, go ahead.

Dr. Echeverria: No, no, but I just to say that AI can really drive a digital, sustainable revolution in the developing world. I have been an optimist for a long time. So I think AI is really, really – will be a huge accelerator to this agricultural revolution. But – and here comes the but – only if applied when it adds real value, and not where there are simple solutions already available. So for us, it's not – or, at least for me, it's not a universal solution that everything should be about AI. Not every problem in agriculture will require AI and not all AI investments will deliver high returns. So for us, I think there are many simple digital tools, better data governance, strengthen institutions, global and regional, and many other things that could add a lot to the AI revolution. Thank you.

Dr. Bertram: Thank you, Ruben. And I loved productivity, sustainability, inclusion. Very elegant. I want to come back on something you said. You said, well, you know, others are doing all the innovation, OK. But we're, we are, you are all, the demand side – Kyriacos, you, Latha, and when Francisco comes he will join in. So it seems to me then that questions are very important about what does that demand look like, and how do we articulate it? And so I guess I'd like to ask each of you to circle back on

that. To say a bit about how you think you can articulate your demand, and then – so that the innovators can respond to it.

And then also, the other point that I think is coming through is the need for documentation. How do we show that AI really works? Because there's an old saying, nothing succeeds like success. And I – wonderful. I'm going to break for a second here. Welcome, Francisco.

Francisco Martin-Rayo: Sorry.

Dr. Bertram: So, Francisco, we've had a great discussion and teed up a number of things. But we've talked about – Ruben said something that I think is a perfect intro for you. He said, well, at the Gates Foundation we're more focused on scaling this, you know, how to apply it. Other people are figuring out how to do it exactly. But there's a demand and supply connection there. So, you know, with our food security hat on, and sitting, as you do, in the corporate sector in Helios, an actual generator of AI and tools from it, can you jump in now?

Mr. Martin-Rayo: Yeah, absolutely. So, one, I apologize for being late. I was stuck in a SCIF.

But, to the food security, food security is now national security. And so it is a really interesting moment to be having this conversation. Very quickly, there's three things that have changed dramatically that allow kind of the technological revolution that we're seeing today. So, one, compute is cheaper than ever before. We have access to more data than ever before. And the algorithms have also gotten so much better than ever before. And so what you're seeing today is the frontier models are extraordinary and so much better than something that was published even 12 months ago.

But the things that were published 12 months ago are so much better than anything that's ever been published in the history of technology, that you can make what is relatively old school technology available at the most individual level. And so if you look across all the different industries, and artificial intelligence is touching all of them, three of them in particular I think are going to benefit immensely from artificial intelligence. Agriculture is one of the top ones.

And what is really exciting about it is you could have a farmer in Latin America that works in Honduras, in Malawi, you know, via text, via WhatsApp, if you will, accessing, you know, cutting edge frontier models that can tell you, hey, send me a picture of your crop. I can tell you what some of the problems are. Send me a picture of your soil. Here's what the likely price forecasts are. Here's what the weather forecast is, and

how you should think differently about fertilizer usage, what you should crop, et cetera, when.

That's extraordinary intelligence that, you know, because of how fast technology is advancing, you can have that custom, personalized intelligence at scale in a way that was impossible even a couple of years ago.

Dr. Bertram: Well, great. Well, I'm going to – I'm going to try to pick up on this by this question of how do we articulate what we need the users? And so, Kyriacos, can I turn it back to you? You flagged some issues when you first spoke. Can you – is there – are there some points where you think we could do better? And now that we have Francisco with us as someone who's on the innovation side of this, I think it would be great if each of us could say a little bit about where we think those gaps are and how we – what we would need to fill them. You're on you're on mute.

Dr. Koupparis: How about now?

Dr. Bertram: Good.

Dr. Koupparis: Well, great. Well, I'm going to – I'm going to try to pick up on this by this question of how do we articulate what we need the users? And so, Kyriacos, can I turn it back to you? You flagged some issues when you first spoke. Can you – is there – are there some points where you think we could do better? And now that we have Francisco with us as someone who's on the innovation side of this, I think it would be great if each of us could say a little bit about where we think those gaps are and how we – what we would need to fill them. You're on you're on mute.

Dr. Bertram: Yeah. Thanks, Kyriacos. And, as somebody who traveled in Japan with Google Translate, right here – (laughter) – you pointed out something that wouldn't it be wonderful if somebody could do that, not just in Swahili but in more minor languages. If that – you know, that would open those doors.

So I want to – Latha, over to you, but picking up on one thing Kyriacos said, this public-private partnership. Private goods, public goods. How do we bridge that? And are there – are there gaps there?

Dr. Nagarajan: Of course, yes. Especially, you know, when we work with the fertilizer markets, and then getting the information from commercial entities, it's always the proprietary information dominates. And it's very difficult for us to even do a simple forecasting, and then in terms of the consumption patterns or, you know, how to build that gap. But at the moment, I would say, at least in the sub-Saharan African context, the

private sector, with the help of all the, you know, African Union Initiatives and other major initiatives, they are showing interest because they also want to improve their market and their incentives too. There are some information private sector may not have, which we all have – the national ag systems or other publicly funded research institutions have. Even the weather data. They do not correlate the weather with the fertilizer availability or accessibility or any of those things.

So in the whole picture, we do need all those variables also, the layers also. So it is important that we need to have this public-private consortium kind of an approach. And that really helps in many, many ways. Even in biotechnology and others, you know, we always promoted the technology absorption gets higher with the public-private partnership, because the incentives also are equitably distributed at the end of the day. As I said, who is demanding such innovations, you asked? I would say that even, you know, at the level of the farmers and the fertilizer recommendations, yes, AI, that's what, you know, we are excited, on one hand, about generating. OK, we do have satellite maps and then the soil maps and then soil diagnostics on one hand. And we always want to bridge this gap and then make it affordable to the smallholders to providing hyper-localized recommendations.

And we are excited by AI in one way that, you know, it is possible to do that. But, again, there are a lot of data access issues and operability issues are already there. And how are we going to solve that? So there is a demand at the moment, the AI-enabled solutions. All we need is a very solid example that you validate it using a good data set, and then you're able to generate certain outcomes. And that would go a long way, even – it's a trust, you know, how better that we can use the AI as a tool.

Dr. Betram: Go back to this issue of documenting.

Dr. Nagarajan: Documenting, yeah.

Dr. Bertram: So Ruben, just building on – going across the food system now, say, within a minute, and then a minute for Francisco, and then we'll go to Q&A. Can I turn it to you, and then Francsico, and then –

Dr. Echeverria: Sure. No, thank you very much. Let me pick up on the trust part. Because no research – you know, we just said with Kyriacos, yeah, there is a need to collect more data, and then there is a huge dataset someplace that should be connected. Well, that connection won't happen if you don't trust at the research level who produced that data. But at the farmer level it's even worse in the sense, where this is data coming from? So on the trust, I'm fully aligned on that one.

So the four demands that we are getting, Rob, big time in the last few years – and remember that the Gates Foundation is very geographically focused in a few places in Africa and a couple of states in India; so it's not that global, although the results are global public goods anyway – is advisory at scale, as we just discussed before. So extension partners, MSMEs, lots of huge demands. And we are funding some of that. Climate and risk. One of the major, what we call big bets, is on better weather. We call it better weather, climate. Early warning, yield, price forecasting, targeted safety nets, all of that AI is helping a lot on the ground as we speak.

The third one is finance. There is a lot of – think of insurance, how cost of insurance will go down having much better information, lower cost credits, insurance systems, consented data, verified data. Yeah. And the fourth one is on the supply chains, to reduce loss, to do better at traceability, nothing better than to pick up on some of the agents and others in AI and the information, and provide market transparency. So just one example in part of the minute that you gave me is that on the AI advisories, generative AI can accelerate impact to all of these, personalized advice, and all of that.

So the point I wanted to make is that all of this advice is based on results from research that some organizations funded for the last 10, 20, because of time lags. So when we do all of these my plea to all of you is to keep funding research, because without that pipeline being well funded, AI cannot do it.

Dr. Bertram: Yeah, again, where is the data coming from?

So, Francisco, we heard public-private from Latha. We heard scale, climate risk, finance, and insurance, risk-reducing advances, and supply chains. Can you wrap us up and then we'll go to Q&A?

Mr. Martin-Rayo: Yeah. So quickly, on the trust thing, I think more and more trust doesn't come from institutions. And it comes from results. So one of the things that we kept – we work with a lot of procurement teams that are buying billions of dollars of agricultural commodities all over the world. And they'll often say, well, how can we trust that your predictions are good? How can we trust the results are good? And so typically what we would say is give us a number of disruptions or price dislocations that you've experienced. And we'll go back and back test them and see if that's the case. And we did that for the first couple of years of the company's lifetime.

What's interesting is we've recently said, well, why don't we look at all of the – we ingest 250,000 news sources every 15 minutes globally. We

said, why don't we look at the last 10 years of that data, identify the thousands and thousands and thousands of price dislocations and disruptions that have occurred, and then go back and automatically back test using kind of our platform to see what we caught, what we didn't catch. And so instead of having to go one by one, we now have thousands and thousands and thousands of these case studies. The point I'm trying to make is, independent of our company, is you have the ability today to say, what does the data look like? What does the information you're giving people look like? You can show the historical results at a level of depth that is extraordinary, right, to use that word again, in a way that wasn't possible before. And I think more and more people are requiring that level of results before they start trusting it.

The last point is – what I get most excited about is we are entering a world where if you look at it from a SaaS perspective, software as a service, the balance was always how much information can I put on the dashboard or on the mobile phone that the human being then has to ingest? If you put too much information it's very difficult to work through it. If it's not enough information, it's not very helpful. We are now at the age of what we call hyper-personalized intelligence, where the dashboard, the textual information, the questions are going to be individualized for each individual anywhere in the world in any language that you want who is asking those questions, who is looking for that insight. And that's a totally different way of engaging with that intelligence. It's something that was impossible before. I think the level of productivity, the unlock that that will create globally, is really exciting.

Dr. Bertram: I love that. It gives a new meaning to the phrase, context matters. OK, how about some – I see one there, please. And please introduce yourself.

Audience member: Good to see you again. Andrew Mack. I was for five years the founder and CEO of an ag tech called Agromovil, which was designed to connect small farmers and their production with large supply chains, right?

So one of the things that I'm curious about, till we run out of – basically ran out of money. One of the things that I'm really curious about, we've talked an awful lot about production, right? And about weather, and about fertilizer. But you've really not talk very much about distribution or sale. In the end you've got, what, a 30 percent, 25 percent, depending on who you ask, of the products that are – all that are already being pulled out of the ground that aren't sold, right? How can we take AI as a new generation engine to push it into that direction, where it's really a sales engine and part of the sales process? So many people I know don't have access to – even if they knew what fertilizer they needed, for example, wouldn't have a way of getting it. There's no way for the

market to signal the fertilizer companies. There's no – so how can AI be the solution to distribution and sale at the last mile level? Thank you.

Dr. Bertram: Yeah. Ruben, are you – would you like to take a stab at that?

Dr. Echeverria: That's a very tough one. Can I pass on this one, or? (Laughter.)

Dr. Bertram: You may, but I think you did talk about the supply and demand and putting markets – making markets work. But I'll – Francisco, would you like to comment on it?

Mr. Martin-Rayo: I can try. It's a really hard problem to solve. So I remember one of the things that we had thought about was creating a supplier database, right? So you say, all right, all of the companies in the world that are selling apples or tomatoes or durum wheat, what if we made that available? So if you're Nestle or Unilever or something, and the supply – you're not going to get the supply you expected from your supplier or the country you expect, can you look at other places?

And the feedback we got was, actually, well, that's not very helpful. And we said, well, why isn't it helpful at all? They said, because we have to develop a lot of trust with that particular supplier. We have to make sure that they're going to give us the quality that we need, that they're, you know, following all the regulations that are in place, that they're going to be able to give us the quantity that we need. We have to go visit the site. And so there is a ton of friction in this space, where you'll have a lot of growers that have that excess capacity you talk about but there's a lot of different barriers they have to go through before you're able to actually put it into the distribution channels and sell it to somebody.

Dr. Bertram: So still getting that demand side and the supply side in sync matters. So we're going to take two more questions, and then I'll take questions first – Eugenia, please, and introduce yourself, and then Dina Esposito.

Audience member: Well, thank you so much for this panel. And thank you to CSIS as well for organizing this space for dialogue.

So I want to come back to Latha, when she mentioned about articulate – how we articulate. And this is very important. I was trying to work on capturing data to improve animal traceability and animal identification at the end of the '90s. And it was really hard. And then I learned that I need to work with partners in order to get the data, but also I need to understand which is the data that I need. We cannot work with all kind of data. So I want to come back to FONTAGRO, the original fund of agriculture that I represent, and also to IICA, the Inter-American Institute for Cooperation on Agriculture, that we work in partnerships.

We started in 2021 to create these consortia of scientists that they are exchanging data and they are trying to close the gap in how to use AI, and decided which data is the data that they need to capture, because data has a cost. It's very costly to capture the data, to keep the data. And also, we need to learn how to use it. So I think this come to what Latha was saying, how we can articulate. And we sure we need to articulate in FONTAGRO with our – I mean, we are articulating with U.S. universities and other Latin American organizations in order to do that. So happy to talk with you, Latha, later. Thank you.

Dr. Bertram: Great. Great question, Eugenia. Now I'd like to get Dina's question, and then the panel can briefly comment. Over here, Emma. Oh, here we go. Thank you, Rose.

Audience member: Hi. Thanks, Rob. Dina Esposito, formerly with USAID. I currently have the privilege of chairing the Women20 Ag and Food Security Working Group. And the Women20 is an advisory body to the G-20. And, of course, we know that women have lagged behind men as producers, despite many, many intentional efforts to level the playing field. And I'm just wondering, and across the food system not just as producers. I'm just wondering if AI simply replicates the systemic issues that women face in the system, or if there's some way that AI can sort of break through a lot of these log jams to create particular benefits? And what would be the intentional steps governments, private sector, nonprofits, foundations would need to think about to really use AI to help level the playing field for women in agriculture?

Dr. Bertram: Great. Dina, thanks so much for introducing that. So we've got two questions here, around the data and around gender. So where – who would like to start? And, Kyriacos, I'm including you in this. So, Latha, why don't you start?

Dr. Nagarajan: The gender. (Laughs.) Thank you, Dina. Thank you so much for that question. Because in most of the outputs from the AI, I'm sorry, Francisco, I think, you know, the disaggregation is not – it's not obvious. OK, even the farm-level data, or the agronomic data, or any data that we generate, or even in the AI models, the predictive models, it's not very obvious how the gender or the youth contribution – or the disaggregation is not to be shown. And so that's another major concern for us also, because in most of the systems where we work women are the major providers, and they are the – they are the highest, you know, percentage who are occupying the farming. So I think that's a very relevant question. I would ask Francisco to throw some light on that, how you would integrate, yeah.

Mr. Martin-Rayo: Yeah. I think it's – the two things we get really excited about, right, is how can we push this idea of democratizing access to artificial intelligence? If you look at the microfinance community, right, I think the loans that are given to women, the microloans that are given to women, are far more successful. And I think there's organizations that exclusively give microloans to women because the default rates are lower, there's greater level of responsibility, the ROI is better, et cetera, et cetera. What we see is if you can continue to push down access to this technology to the lower level, you should see – be able to see some of those benefits, hopefully, right, either be equally distributed or over – help in a greater way, I guess, women over men.

The closest analogy I have, right, when we're going through these big technological changes – I'm old enough that I remember doing the research where people said, well, Africa is never going to be able to develop because they don't have access to landlines and it's going to cost trillions of dollars and, you know, dozens of years for them to get it. So they're just always going to be behind. And then cellphone technology came along, right, and they become extraordinarily connected. My hope is, if we're able to get through some of the more infrastructure and regulatory issues that you see in some of these countries in Latin America and Africa, and you are able to push that democratization of artificial intelligence – again, it can be in a smartphone; it can be in a non-smartphone, right? The way you're – give access to it is pretty extraordinary now.

That should be able to try and level the playing field somewhat. But hopefully, right. you see in artificial intelligence what happened in microfinance, where, hopefully, it uplifts women rather than continues to hold them back.

Dr. Bertram: Kyriacos, how did – gender must play a huge role for WFP, I'm just guessing, given the outcomes you are seeking. But also, there is the question that Eugenia raised about where is the data coming from. Maybe it wouldn't be scientists in your case. It might be governments. But can you – any comments you'd like to share with us here?

Dr. Koupparis: Yeah. No, let me tackle the gender question first, and then I'll talk about data. And it's a very good one that Dina poses. I think there's many ways to look at this. First, I would look at some of the enabling factors that would significantly enhance a woman farmer's ability to participate in AI-driven tools or resources. So, for example, we know that in many countries access to mobile phones is lower among women than men. So if we are rolling out an AI-enabled extension service, and it's phone-based, then this is something that would need to be addressed to ensure that women farmers can equally participate. I mentioned earlier

literacy, again, another area where, unfortunately, we see lower literacy rates among women in certain countries. So if the app or the application is meant to be read then, again, that is something that should be addressed. So could a voice-to-voice app be more suitable?

I think the content as well. I know that there's a lot of companies and foundations and NGOs that are building apps for smallholder farmers. For example, AgriLLM is one initiative that I'm aware of that I believe the Gates Foundation is supporting. Is the content actually tailored to women farmers? And linked to that, a lot of the datasets that exist in the world are biased. We know that. So, for example, if you are building an app to help, you know, expedite the approval of loans or credit to farmers, it will most likely have a biased dataset that skews more heavily towards men who are successful recipients of loans. So, again, addressing the biases that – or, at least acknowledging them in the first place, and then addressing them. So all of those issues need to be addressed. I don't think it guarantees equal participation, but definitely they need to be addressed if we are going to succeed on that front.

In terms of access to data, I think – I mentioned this earlier – the private sector has a huge role to play here. We know this, that they do control – collect and control huge amounts of data. But we also work very much, very closely with local partners. And so we work through and with local implementing partners across the world. I believe WFP has approximately 1,000 cooperating partners. And these are our critical eyes and ears who are collecting information on the ground. I also mentioned we collect price data in 2.000 markets worldwide. Again, these are through partners who go market to market to actually collect these prices, that we then make publicly available to anyone to use. And these are the types of networks and ecosystems that we need to continue to support and fund, because they are in the most hard to reach places across the globe. And if we stop collecting data in these places, then we won't have any idea what's happening. Thank you, Rob.

Dr. Bertram: Thank you, Kyriacos. Now, we're out of time, but I just want to say we've heard the gender issue, we've heard the research issue, we've heard the public-private partnership. All of these are things – and scale. Sorry, scale also. All of these are areas that the foundation invests in. So I'm hoping, Ruben, that I'll give you a chance to say something, but I hope also you can take some messages back. You obviously collected a lot, and we appreciate that.

Dr. Echeverria: I will. I will go back to my colleagues with my non-AI notes and say this is what I learned today. (Laughter.) No, really, thank you again. There are two things that I think are super, super important. One, is that if data is the fuel for AI, we should keep investing on those data ecosystems,

including DPI, or all the systems around to make it available, open, inclusive, and connected to all the datasets. And we have examples. There is no time now. For example, we are working in a new facility, with the UAE. We are working with the CGIAR AgPile, a federated system to collect all the data. Perhaps in other panels, there will be some conversations later in the day.

So I repeat my earlier point – that I learned in communications you have to repeat at the end what you said at the beginning – in the sense that it's just an accelerator tool. A great time to do it, huge potential for transformation, but it's not the solution for everything. There are many other solutions for many things that we face in developing countries. AI could help a lot, could accelerate a lot. One of the big gaps is the institutional strengthening and funding for international research.

Dr. Bertram: Well said. Thank you all very much. Colleagues, can you join me in thanking the panel? (Applause.)

(END.)