Operational Implications of Integrating Climate Smart Agriculture into Feed the Future Activities

Audio Transcript

February 18, 2016
Presenters
Zachary Baquet, USAID (Moderator)
Rob Bertram, USAID

Contributors
Mark Visocky, USAID
Tatiana Pulido, USAID
Laura Schreeg, USAID
Moffatt Ngugi, USAID
**Presentation Transcript**

**Zachary Baquet:** Welcome, everyone. And thank you for joining us for today’s talk on climate-smart agriculture with Feed the Future activities. Today’s speaker is going to be Rob Bertram, our chief scientist for the Bureau for Food Security. Joining us also and acting as our experts on various areas within climate-smart agriculture and answering questions as well is Moffatt Ngugi, Mark Visocky, Tatiana Pulido, and Laura Schreeg. So they’ll be jumping in and answering questions after Rob gives his presentation. As you have questions, please enter them into the chat box and we will be tracking those and trying to answer as many as possible during this session, and so please use the chat box whenever you have a question. We’re going to pass it over to Rob.

**Rob Bertram:** Okay. Good morning, everyone – or, whatever time of day it is – greetings. And I’m delighted to be here with our whole – many parts of our climate-smart agriculture team from the Bureau for Food Security. I’m going to be talking today about climate-smart agriculture in Feed the Future and I thought it would be useful to start with a little overview to set the context for our approach to climate-smart agriculture. Having said that, I think that many of the things that we’ll be talking about this morning are relevant in many instances and situations and contexts beyond Feed the Future as well. So, I hope it will be widely useful. Finally, I hope that by the end of the discussion we will have conveyed that climate-smart agriculture is fully consistent and aligned with our goals in food security.

I’m going to start with a slide from Marc Sadler at the World Bank drawing on some work from the Climate Change Agriculture and Food Security program – so, CCAFS of the CGIAR. And this is just to help us all recall that the larger challenge when we look ahead to feeding the world and where we’re going to be at mid-century with nine or 10 billion people. So, this of course is going to require things you’ve heard before: a 70% increase in production of food. At the same time, we’re looking at major climate challenges as well as challenges around competition for land resources, water resources, and other factors.

But when we look ahead to meeting that kind of challenge, I think we have to remember something. It made me remember the line in *The Wizard of Oz* when the Scarecrow says to Dorothy, "It's always best to start at the beginning." And that's what we have to do: We have to start with the situation we have now. And frankly, the money that we get from the Congress to invest in food security is predicated on making progress in the near term: impacts on hunger, poverty, and child stunting. So, I'd like you to try to hold onto these two ideas: on the one hand, trying to make impacts
now in the near term, but also putting us in the right trajectory to meet the challenges facing the world in the long term.

Now, a little bit about how we work in Feed the Future. You can see the key points here, the fact that we follow the lead of our partner countries. The part that we very much focus on integrating nutrition and agriculture, on gender, on accountability. And I'm delighted that Tatiana Pulido is here with us today because she is a leader in our effort to demonstrate to the investors – Congress in particular, but to the American people more broadly – that these investments are really paying off. And I also want to focus on the fact that we use a smallholder approach, where we're looking to transform agricultural systems where hundreds of millions of smallholders live across the developing world.

Now, a little bit on what we do. You can see here the important elements of Feed the Future. What I'd like to add to this slide is that we have what we call three cross-cutting issues. One is gender. The second is environment sustainability. And the third is climate change. And in terms of climate change, if we go back to original guide of Feed the Future in 2010, we can see that there's a very good discussion of both adaptation and mitigation. But I must tell you that in the early years it was really an adaptation focus that I think predominated. And I think that you're going to see as we go along why that would be the case.

Also, very important to remind us all what our metrics are at the end of the day. In other words, what looks – what does success look like? It looks like reductions in poverty and reductions in stunting. So, this is – these are very important focusing objectives for the entire initiative.

And then, in terms of poverty, I just want to remind you all that we have continuing evidence of agricultural growth being more than twice as effective as other kinds of economic growth in reducing poverty. And the poorer a country is, the more effective and important agricultural growth is to meeting our poverty reduction objectives.

Now, the second main goal that I mentioned was child stunting, and this is a – I wanted to give you a little bit more on that because it's – frankly, as an agriculturalist it's very daunting. It's a high bar, so we need to kind of break it down. And what we see here is that food accounts for about a third of what we need to address the stunting problem. In addition, water and sanitation play a critical role. And then, very importantly, women's education and status. So, it's all three of these things have to come together to meet that objective.

The other thing I'd like you to notice is that within the food section there's two things: There's the dietary energy supply; there's also the amount of
energy from non-staples. So, this has major implications for our approach in terms of driving diet quality improvement.

A little bit more on sustainable intensification. You can see here the main elements, and as I said, we have this focus on smallholder productivity gains and smallholder-led agricultural transformation. So, when I think about sustainable intensification, I think about reducing risk, increasing productivity, fostering investment because of those two things, and investment everywhere – on farm, off farm, in the government sector, and very importantly, in the private sector. We think about the natural resource management context, the policy and human capital context. And I think while we see sustainable intensification as being critical at the micro level, at the farm and community level, it’s also, I would argue, critical at a global macro level as well.

And the next slide gives you a little bit more on why I say this. We have two different development pathways that have been followed in Sub-Saharan Africa and South Asia. And globally speaking, these are the two hotspots of food and security and child stunting and poverty. Not to say there aren’t other pockets, but these are the largest sections. What you can see here is that in South Asia we have seen the intensification of agriculture via productivity growth that has driven incomes increase, productivity increase, and poverty reduction for hundreds of millions – if not billions – of people. In Sub-Saharan Africa, it’s been a different trajectory that has included more – it’s more growth and production has resulted from an extensification. And this means bringing more land under the plow, and it has not led to the kinds of gains in terms of poverty reduction that we are seeking and what we have seen in other parts of the world.

So, we really very much want to help drive this, in particular, as I mentioned before, by reducing risk so that there is greater incentive to invest. And this includes climate risk, so we can think about things like information as credibly important to sustainable intensification. And that information could be about weather and climate and other things that help farmers adapt.

Now, climate-smart agriculture has introduced the mitigation concept – in other words, the reduction of greenhouse gases. And this has been developing for a number of years. As I said, it was anticipated in 2010, but it got a formal launch at the UN General Assembly in 2014. Many countries joined together with international organizations, and I think many of you have heard by now of the triple win concept, which is the idea that we have three pillars: the productivity and income and food security dimensions in a classical sense; increased adaptation to climate change, the ability to withstand it; and then, very importantly, the third pillar, which is reducing
the greenhouse gas footprint. FAO says where possible. Other groups like USAID have concluded where appropriate. I frankly think that it's – that that's less of an issue in terms of the terminology. Because what we want to do – and I think you're going to see this over the course of the discussion – we want to try to reduce greenhouse gas from business as usual. In other words, we want to try to bend the curve so that the intensity of emissions per unit productivity is reduced. There are other instances where we can even go beyond that, and we'll talk about some of those.

In terms of the implications, in the developed countries a lot of the attention to climate-smart agriculture has been on the mitigation side. In the less-developed countries where farmers tend not to benefit from as many things that help increase their resilience to weather shocks, adaptation has probably predominated. But I think you're going to see that, really, the two can very nicely go together.

Now, this week I think we have – hopefully, you have access to the framework paper. This is something that has been under development for over a year. It's about how we are seeing climate-smart agriculture in Feed the Future, and as I said, it's very aligned with Feed the Future's goals. And you can see we've broken down five areas. I want to also just mention how much review this paper got from inside AID, from our missions, and then across the US government, and then, very importantly, from our external stakeholder community. And I want to say a little bit about the feedback we got from all of you.

One was that we keep poverty and nutrition uppermost in our objective, and that's frankly right in the middle of the Feed the Future money that is appropriated by the Congress. But that was a message from all of you as well. Also, the very important point about being farmer-centric and smallholder inclusiveness, and very much the – highlighting the importance of enabling smallholder decision making. And I think the third piece that then follows right from that is that we focus our efforts on providing information, better information to farmers, and also more in the way of choice. And finally, a fourth point that I think I read across a wide range of commenters was that we have to think of this as an enhancement of current practice, not a replacement. In other words, this is something that's evolving. And again, what we're seeing is that, indeed, many dimensions that we would now call climate-smart were being adopted and extended well before we actually used that terminology.

So, we want to then focus on – to move from the framework paper, which I hope you'll all read and we continue to welcome your ideas about it, to how do we strengthen climate-smart agriculture in Feed the Future across Feed the Future? And I want to say a little bit about something we call global
learning and evidence exchange – the GLEE. And we are going to have several of these; these are focused – they’re designed to help support our missions in terms of giving them additional information, tools, and understanding of how to best approach climate-smart agriculture in their food security portfolios. But don’t despair if you're not going to be part of these GLEEs as we develop them because we are going to also develop a climate-smart agriculture course that reflects on the GLEE, what goes into the GLEE. And then, we'll find other ways to share the kinds of learning and approaches that we think are appropriate.

So, I wanted to run with you today a little bit about what the GLEE is going to include, because I think it basically will signal to you what we think are the important considerations for any of us as we contemplate investments in agriculture and food security. One is this policy context, which is very important. And there's a regional one very prominent in Africa and other parts of the world, but there's also global contexts, the Global Alliance for Climate-Smart Agriculture.

There’s also the issue of: What is the climate science telling us? And that, we are going to work with some of the best expertise available to try to discern what information we know about trends in weather that have changed over time, about what we look forward to, about increasing uncertainty of things like rainfall and seasonality, increased extreme events – storms and such along coastal areas, saltwater intrusion. So, these kinds of things we'll be learning together.

Then, I think, fundamentally also to introduce the idea that we think of climate-smart agriculture as an approach. It's not a checklist. It's not a – you know, "This technology is climate-smart; this is not" – that kind of thing. It's more an approach, and it needs to be integrated across the whole portfolio. And we need to think about it, just as we do really think about, say, gender in everything we do. And then, how to work with and integrate climate services. There's a lot of investment going on, including from our colleagues in the Global Climate Change Initiative in USAID and other government agencies and many other partners on climate services, on weather information, on other kinds of things that can help farmers anticipate and adapt.

Vulnerability assessments. Again, lots of investment. A range of focus on them. How to use them. We're not going to try to duplicate the kinds of training that go on in the climate change community, but we want to help food security practitioners and agriculturalists and nutritionists be smart consumers of these resources. And then, lower emissions development. And we're going to look – and I'll have some examples for you of opportunities for absolute reduction, the triple win in terms of the – in one way, in some
instances. And in other instances, the triple win looking really more like bending the curve, as even though overall emissions are going up, the emissions per unit production are going down. And we'll say more about that as well.

Also, I want to just mention that the E3 Bureau and the Africa Bureau are active partners in the design and implementation of the GLEE, and we really appreciate all the assistance they have provided, because many of the things we need are coming from our colleagues in the climate change area of USAID and elsewhere.

And then, a little bit more – we have done working with CCAFS – the CGIAR program I mentioned – portfolio assessments. We're going to be looking for shared lessons that machines can share with each other and learn from each other's experience. We recognize that some of our missions work in similar environments and situations; others are in very different situations. So, there's a lot of opportunity there. We're going to be thinking about the technical considerations, the systems perspective and natural resource management. And it's great that Moffatt Ngugi is here this morning because Moffatt is really our thought leader in that area.

We have component technologies and the whole issue of scaling – and Laura Schreig is here and she'll be speaking to those. She's very active in that area. And expanding farmer choice, the – this issue of giving farmers more options, one of the points I made – that I said came from our stakeholder group in the review of the paper.

Partnerships: a very important issue. Very much with trying to incentivize the private sector and the public sector – the NGOs – but especially the private sector. Those private goods, how to incentivize them to adopt climate-smart approaches. And I think the really exciting thing we see there is how congruent climate-smart approaches are to profitability for the private sector. So, that's very exciting.

And then, we want to support our missions in helping them operationalize climate-smart agriculture approaches, how to access and use the knowledge and tools and resources that are available across AID and beyond.

And then, finally, we'll be discussing this issue of accountability. As we spoke about it earlier, that's one of the hallmarks of Feed the Future. And Tatiana has been leading the charge here in terms of determining how we can use our monitoring system, which has been in place for a number of years now and which, in a sense, has to evolve slowly because projects are designed and certain metrics are built in. But we're trying to think about, well, what are the ways we can use the information we have? In addition,
what other opportunities for new kinds of information can give us insights about the adoption and results from climate-smart agriculture?

So, very importantly, I think one of the things I really want to drive home today is that a lot of what we see in CSA and in sustainable intensification more broadly is information-intensive. And there are things we can use and provide farmers to allow them to gain in terms of the climate-smartness of their system: increase their adaptation, potentially also increase the sequestration of carbon and soil organic matter or other kinds of biomass. And we have – what we also see is that this is wholly consistent with diversification. You can see some examples here on the slide. It does require better information. It also is very critical. It's also aligned with the risk reduction effort and a resource use efficiency approach, which is one of the hallmarks, both of sustainable intensification but also climate-smart agriculture.

And then, I think what we really see so often is coadaptation: mitigation and adaptation coming together. And you can see that in the slide where we're increasing the organic matter, we're increasing the soil moisture holding capacity, the water use efficiency, the nutrient use efficiency. And importantly, we're integrating things like livestock and fish and poultry that help increase our food security objectives in terms of income, diet quality, et cetera. Well, there's lots of opportunities there as well. Our colleagues working on lower emissions development have told us that just by improving feed quality for ruminants we can greatly reduce the greenhouse gas – we can really bend that curve in terms of both increasing their productivity, but also reduce the amount of greenhouse gas emissions per unit of production – which at this point, for example, in Africa is extremely high. But that – we can change that.

Now, I want to take this down to the level of real people and real situations. And some of this work predates what we call climate-smart agriculture, but the concepts are there, and we can still learn from them, and they're very, very relevant in a climate-smart context.

So, this is a woman named Rhoda in Malawi. She only had a hectare or so of land, and her yields some 20 years ago were almost – I mean, almost starvation: a couple bags of maize from her land. And what she did was – this is now a picture of now, and it's a very different picture, as you can see. She's got a nice maize crop and she's got trees. At the beginning, she had bare land. And what she did was she used a system of doubled up ground nut and pigeon pea production, which added nitrogen to the soil. It's a very climate-smart approach to increasing soil fertility. It also – because of the organic matter that was being added, it made her fertilizer much more
effective when she added fertilizer for the nutrients that were not there from just the biological nitrogen fixation alone. And so, soil organic matter went up. She integrated fertilizer trees, different species of leguminous trees which added a lot of biomass into her production system. And she went from two bags of maize to 50 bags of maize.

So, what does that mean? Well, it means that calorie-wise her family was much better off. But it also allowed her to diversify, and she started growing pigs and feeding them from her corn – her excess corn – but also from the biomass from the trees and other fodder. And it's really been transformative. And so, we have a system in which much more carbon is being sequestered. She's got a much higher income. Her children are – have school fees and she has much more in the way – she built a house even. It's really a terrific story. And very importantly, she's much more resilient to shocks. This is – you know, so she's increased her adaptive capacity as well to – especially to climate shocks.

And so, what we're doing with all of this kind of experience is we're working hard in the main agro-ecosystems in which we work to apply the science here in a range of systems, recognizing that farmers are going to make very different decisions based on where they are. And we call – we have a program called Africa Rising, and that's research in sustainable intensification for the next generation. And it is, I would say, wholly consistent with a climate-smart approach, and it looks at all the things I talked about. But this is the kind of thing that we're learning from, and trying to understand that process so that more people like Rhoda can benefit.

Now, having said that, there's still some great challenges out there that we face. Smallholder agriculture, especially in Sub-Saharan Africa, is undercapitalized. And we need to think about – remember, we talked about reducing risk? We also want to reduce drudgery and the hard labor, especially for women who have so many burdens in terms of the family needs and the children. But we need to do this kind of thing, bringing in irrigation and mechanization, through a smallholder lens. And so, we're looking at innovative approaches to service provision, to things that can help aggregate supply and demand for smallholders so that markets are more attractive – both to them, but very importantly to private investors, linking them to value chains. The role of farmer organizations – there's ways to spread the risk around capitalization. And the role of the private sector and the public sector.

So, now, in Asia it's a bit of a different story. This is a picture from Asia, as you can see. But in Sub-Saharan Africa we're very much focused on trying to get this next stage of transformation, which may increase overall
emissions but it will – from what we know, it will greatly reduce emissions' intensity – in other words, emissions of greenhouse gas per unit productivity.

So, let's take a look, though, at another system in South Asia in the Indo-Gangetic Plains. We have a program that we co-fund with the Gates Foundation: it's the Cereal Systems Initiative for South Asia. And when we first designed this more than 10 years ago the whole focus was on climate resilience. But it also had as a big part of it soil and water conservation. It brought in heat-tolerant crops. Early onset of heat is a huge problem in South Asia. We integrated things like fish ponds. There was a tremendous amount of farmer experimentation and things like – and then, new approaches like deep placement urea that made fertilizer – not only could you use less; what you used was much more effective.

And of course, what we've gotten here, as you can see, is productivity increases, big savings in energy by reducing the amount of irrigation water pumped, by reducing – to moving to a no-till or a reduced-till system. And then, big increases in profitability. So, it's a beautiful example of a triple win that is really around absolute reduction. So, this is already an intensified system that we – that supports, you know, a billion people or so. But through science and technology and sound policy, we can bring in approaches that really make it a lot more climate-smart than maybe it would have been otherwise.

Now, a little bit about science in these smallholder systems. So, I wanted to talk about, for example, we can think about nitrogen use efficiency. This is – these are things we're working on in Feed the Future that have big implications for greenhouse gas emissions and fertilizer – reduced fertilizer use and higher effectiveness. We can look at the issue of water use efficiency and the ability of the system to store more water. But we can actually do the biology that helps drive that as well, so it's a combination of agronomy and good information and on pests and weather and other things, combined with new science opportunities. Opportunities for reduced tillage that further increase the water penetration from rainfall and the water use efficiency, also increase the organic matter in the soil. Nutritional quality is another possibility. And then, tolerance to higher temperatures that I've already talked about. And improved photosynthetic efficiency.

And I wanted to give you an example of one of the things that has been such a challenge all along but is becoming more so in – as climate change. And we've seen this in Southern Africa. We're seeing it now with El Niño – that's a different discussion. But in Southern Africa last year we saw the effects of midseason drought, and this has a terrible impact. And it also – if the maize crop is threatened, it makes people more and more risk-averse and less
willing to invest and less willing to diversify, because they want to make sure they have enough maize to eat.

So, we've developed with – working with CIMMYT – the stress-tolerant maize. And this has been going on for many years and we have really – you can see the example there of this drought-tolerant on the left versus the drought-susceptible, normal varieties grown on the right. So, there's huge impacts coming from that. But then, with the new science we are also getting – making progress – really unbelievable progress, in my opinion, on heat tolerance. And you can see here – this is from a partnership, public-private, and developed country partners on developing heat-tolerant maize for Asia. And you can see it's just dazzling progress, and it was made in about three years. In other words, they're outperforming the best local materials in just a short time. So, the high temperature threat is very real, as we know, in climate change. And so, here's a good example of adaptation, but it can be adopted in systems that are very much focused on mitigation as well. So, that's – it's a very nice example.

One other thing is this issue of scale. And coming back to the stress-tolerant maize in Africa, we put a lot of effort in Feed the Future towards transformation of scale. You know, we don't just measure our success by how our projects look. We have population-based indicators, and so we really have to move the needle for everybody.

And so, here's an example where we now have about five million households, but the goal is much higher. And Laura Schreeg is very actively involved with this. Some of you know John McMurdy. He has left USAID, but he was – deserves a lot of credit. And Mark Huisinga from our Markets Partnerships and Information office, very – and Innovation office – very involved with that. So, again, we want to reduce risk, increase productivity, and help potentiate and drive diversification among smallholders.

Now, very importantly, this doesn't happen without a seed system being in place. And this is, I think, very central to where we can go in terms of giving farmers choices. We know with climate change that both abiotic – things like drought and heat and, you know, temperature, that sort of thing – that kind of stress is going to change more rapidly than ever before. But we also expect that pests and diseases will change more rapidly than ever before. So, we've got to be able to develop, but also deploy diversity and give farmers choices, whether it's in the same crop – for example, the stress-tolerant or heat-tolerant maize – or a new crop. Maybe they'll shift to sorghum. Maybe they move from bean to ground nut. Maybe the other direction. But those seed systems are generally not there, and the average age of varieties in places like Sub-Saharan Africa is 20 to 25 years. We've got to change that. And I hope USAID is going to be the vanguard of a
global partnership with African partners – the private sector, the public sector – and traditional seed systems. It's not all – I mean, we really can be very strategic, and there's a lot of people thinking about this. But I really feel that it's an absolute essential thing for us to try to deliver in the context of climate-smart agriculture.

Now, wrapping up here, I want to make clear – we've been talking a lot about what happens on farm. It's not only what happens on farm; it's also what happens after the farm. And we very much – you know, we take what we call a value chain approach in Feed the Future. Missions invest in ways that help connect smallholders to markets and that incentivize investment all along that value chain from farm to fork. So, we're thinking about what we can do to strengthen the climate smartness of these value chains. So, we can think about input markets, many opportunities around water use efficiency and small-scale irrigation. We can reduce post-harvest losses – this has huge ramifications for both mitigation and adaptation, because it also reduces the need for additional production and adds value.

Market efficiency. Getting farmers better information. That can help – that can make markets much more effective and help reduce losses, help farmers increase their incomes. Drying and processing innovations: This is just one example of an energy-intensive part of the agricultural value chain. We can look for ways to be more innovative: solar dryers, other kinds of approaches that enhance how a product is stored or processed.

And also, policy around things like trade. How much time do trucks spend at borders full of food with the food wasting or spoiling and their trucks running and burning food? So, we – you know, there's lots of ways that we can think climate-smart, and we're really trying to be quite holistic in looking for all those opportunities.

And I really want to thank my colleagues in the Market Partnership and Innovations office. Curt Reintsma's not here this week; otherwise he'd be with us this morning. Many of you know Curt. He has led an effort with Mark Seifert and others on using an approach called a broad agency announcement that was focused on engaging the private sector in climate-smart agriculture. And basically, we're looking to try to incentivize the private sector to understand the motivations that private sector would have in making investments that are more or less climate-smart, more or less climate-friendly. And then, really looking to incentivize additional investments because of that private investment that can be part of a positive feedback loop around climate-smart approaches on farm.
Now, finally, looking forward, we have got the framework paper out. I commend it to you all and will continue to welcome your comments. If you want, you can send them to rbertram@usaid.gov. But we – and I’ll be responding to those who already did. We are working to integrate climate-smart agriculture across the portfolio. It’s not like, “Well, this is our climate-smart activity and this isn’t.” We really don’t. We want to think about this holistically across the entire portfolio. It’s – we need to think about the change – the policy approaches with respect to the context of the executive order on resilience, resilient development, climate-resilient development – CRD there. I mentioned to you already the GLEE and the climate-smart courses. We will work with KDAD and other partners like Agrilinks to share information as we continue to learn. There’s a whole lot going on. We will integrate with other investments, and I’m especially excited around understanding climate services and how to really benefit from the investments our climate colleagues are making and the – providing farmers with better information. We’ll take an active role on the global stage because we think we’re learning a lot. We want to share it, but we also want to learn from the experience of others. And as I think we want to do across everywhere across Feed the Future, is we want to continue that learning.

So, thanks to all of you for paying attention. I want to say this is the global year of the pulse, the legume crops. We love legumes for many reasons, including the fact that they fix nitrogen and add to soil fertility and make what fertilizer we do use far more efficient. They also of course provide great income and nutrition for smallholders and low-income consumers.

So, thanks to everyone and I look forward now to the – a rich discussion.

[End of Audio]
There has been quite an active discussion in the chat box, and thank you everyone for participating in it and providing your comments and questions as we go through this participation. So, now we're going to move on to our Q&A. And with that, we'll be – we've collected a number of your questions and we'll be answering them now.

So, with that, the first question we have came from Kenneth, which – I don't know if there's anyone particular in the group that would like to answer it – it's: "In commercial and competitive agricultural markets, how can climate-smart agriculture be attractive to the value chain actors in order to better integrate CSA practices into the value chain? Is it attractive to the private sectors? What could be a good strategy to bring value chain actors into CSA products in general?"

Mark Visocky: This is Mark Visocky. Since Kirk isn't here, I'll answer the question. I'm not an expert on the private sector per se, but there is a lot of great examples where companies and organizations have integrated climate-smart practices within their value chains. For example, shade-grown coffee is a prime example of how the private sector rewards farmers for producing coffee in a sustainable manner. Cacao is moving more and more towards that.

But I think there's ways to integrate it into a lot of different value chains, and it's a long-term investment for whether it be a beer company sourcing grains or a pulse company sourcing seeds for their business as well. There are ways to integrate CSS – CSA into their practices and get rewards back through better management of land, more long-term sustainability of their systems.

Zachary Baquet: Thank you, Mark. Going on to an earlier question from Michael Davidson: "Most CSA interventions are disadopted. Will we discuss implementation in failures to sustainability implementation methodologies and tools to implement this?"

Rob Bertram: Thanks, Zachary. It's a great question, Michael. I think – I guess I'm not sure exactly that I agree with the premise that most are disadopted. We know that there are situations in which complex systems are disadopted, and there's – I think our mission in Zambia is actually looking at some questions around evergreen agriculture, the integration of leguminous trees into a maize-based system, and I suspect it's issues of things like labor and profitability. But the point you make about "How can we learn from this?" – absolutely. That's a case in point that I just mentioned. We need to understand that. But I would say overall we think there's – for every
example of where it might not be working, there are examples like some of the ones I mentioned where it's – for example, in the Indo-Gangetic Plains, that no-till has spread across the region very rapidly. So, it's – you know, it's very important that we stay tuned in on this and try to learn as we go.

Moffatt Ngugi:

Hi, everybody. This is Moffatt Ngugi. Yeah, I would mention that, yeah, there are sort of a lot of good lessons to be learned. And I think, as Rob mentioned: Where it has worked, why did it work? And where it's not working, why?

I think there is actually a study ongoing at the moment from the African Bureau at USAID that is actually trying to sort of unpack this very question so that we can better learn how we incorporate those lessons in terms of people adopting and kind of moving with whatever they – innovations are for climate-smart agriculture.

Zachary Baquet:

Okay, thank you. Moving on to the next question – so, we had a number of questions around the maize hybrids that were talked – that Rob talked about during the presentation. There was a number of discussions and questions around whether the hybrids represented GMOs. And then, are they bounded by commercial binding restrictions? And there were several questions around that and how farmers can actually be able to afford some of those technologies.

Rob Bertram:

Great. Glad to – that this point was raised. They're not GMOs in the one – the examples I mentioned. There are of course attractive biotech technologies that may come down the pike fairly soon around things like drought tolerance and heat tolerance. But what we are using is modern technology in terms of genetic – using genomics and all to more rapidly be able to select for increased tolerance to heat or drought. In the case of Africa, there are both hybrids, which are being marketed via small and medium enterprises in the private sector to farmers who want hybrids. And then, there are what we call open-pollinated varieties available as well.

And that same approach would be true in the Asian context. I believe we have materials that are both open-pollinated and hybrid types. The hybrids, though, are generally preferred, unless you have a very low-risk – a high-risk aversion approach, because the potential returns to hybrids are so great in terms of productivity. So – but that's something that can change over time as people become more familiar and as they – as their risk profile changes based on the fact that the technologies are reducing both – reducing the risks and increasing their income.

In terms of availability, the OPVs would be widely available. Hybrids – I mean, normally, one has to pay for hybrid seed. But the idea here is that the actual innovation be publicly available. Things that we support with public
funds, we always make sure that that technology is widely shared. So, it's a bit of a balancing act: you know, on the one hand partners that want to take the ball and run with it, but also recognizing that that ball has to be available to other partners as well.

**Mark Visocky:** I would just add to that, that on the – legumes is a particular challenge for us because it's not as attractive to the private sector to market the legumes. And many countries do experience shortages or difficulty obtaining some legume seeds. So, that's something I think we need to put our heads together and really think about how we can better make this system more efficient and more available to the smallholder farmer.

**Zachary Baquet:** Okay, thank you. We have another question from Christie Cook: "Experience shows cross-cutting themes such as gender do not gain any traction without staff, budget, and incentives. What does USAID propose to ensure there is dedicated attention to integrating CSA into agricultural investments?"

**Laura Schreeg:** So, I can start. This is Laura Schreeg. So, I'll say this is a great question and it's really important to always think about people's motivations and incentives – so, both the smallholder farmers but also the implementing partners who are carrying out the work. As we talk with folks it's always, you know, what you do in the field and how you design your program oftentimes – it goes back to what you're being evaluated on.

So, I think Feed the Future does a good job on this with the gender because we have gender as a disaggregate and as part of our metric system and something that we think about regularly because it is a cross-cutting theme and we do account for it. And so, we always have to have that in our mind. And then, talking with people as we're trying to better understand climate-smart agriculture and Feed the Future, it's really apparent that climate and weather have to be addressed in order to meet the topline goals of reducing poverty and improving nutrition. And so, you know, we've noticed that there are a lot of programs and a lot of projects that are already quite climate-smart, even though they're not calling it that. And so, there are huge opportunities for how can support climate-smart agriculture. But there's a lot going on there because the climate and weather is already part of what people are being evaluated on in the goals that they're trying to address. And we do have work going on now with our M&E team to better incorporate the climate-smart ag into the attribution metrics that we collect every year, and there will be more coming out on that soon – unless – okay.

So, I'll just leave it at that for now so I don't talk too long. But thank you for that great question.
Rob Bertram: I'd like to add something to that, Laura. This is Rob again. It's a very important point, and I neglected in my talk to mention that Mark Visocky, who is one of our most experienced foreign service agriculturalists who has led Feed the Future portfolios in each of our three main regions, is – has come into Washington to lead our climate-smart team in the Bureau of Food Security. And that he has a core group with him in CSI, but also, we have people in the Research & Policy office like Laura. We have Tatiana in the Metrics office. We have Curt and others in the Markets office.

So, we are trying to make this as – very – you know, really build it in the way we do other things. I would say the additional resource we have is we have strong links to expertise and other bureaus that are making investments that very much are critical to the kinds of outcomes we're working towards.

So, we are attentive to it, and we do have people who have this as their job. So, in that respect it is similar to the – what Christie mentioned on, for example, gender.

Zachary Baquet: Okay, thank you. As kind of a follow-up question, we have one from Hosea Yakubu – pardon for the mispronunciation. "How can CSA be properly captured in M&E systems?"

Tatiana Pulido: Hi, Hosea. This is Tatiana Pulido from the Metrics office. So, that's a – that's the million dollar question that we're all grappling with right now. But in terms of what we are currently – what we're thinking and what we're working towards is being able to, as Rob mentioned, not create a new system but enhance and build off what we currently have – also, within our monitoring and evaluating and learning component within Feed the Future.

And so, it's about really thinking through what our short-term successes look like, which is more around the adaptation and mitigation uptake of technologies that are climate-smart and appropriate. But then, also looking at what your long-term goal is, which is really currently making sure your yields are at least stable or increasing, despite the climate variability that you might see. And so, it's really grappling around what is it that we're looking at in terms of short-term successes, what is it that we're looking in terms of long-term successes, and as well as looking in evaluations and learning around, as we mentioned earlier, failures, successes within, you know, the context of the example we gave about Zambia, and trying to understand a little bit more of the nuance around what are the impediments, what are the biggest challenges, and how are we actually overcoming these challenges and seeing if there's anything that can be scaled up.
So, there's a lot of moving components, but I think critically right now what we're looking at is enhancing the system that we have as opposed to trying to build something completely different, which would just be onerous, especially to all of us who are within government who already have a lot of stakeholders interested in what we do. [Laughter]

*Laura Schreeg:* And – this is Laura again. I just wanted to add in – Tatiana, that was a great explanation. I wanted to add in that it's tricky – right? – because climate-smart ag isn't just a list of practices or technologies; it's very context-specific. And so, you know, before you can figure out if you're doing something that's climate-smart, you first have to identify: What problem are you addressing? And that differs depending on the time frame that you're interested in and the – and where you are, if you're – what that climate variability will be like. So, it's not an easy process but we're working on it.

*Zachary Baquet:* Thank you, Laura and Tatiana. We have another question from MacDonald Homer on advancing the discussion and thinking around climate-smart agriculture within non-Feed the Future countries and what we might be doing about that.

*Rob Bertram:* Thanks, Zachary. Well, it's a great question, Mac. And I – at the outset, you know, I mentioned that we feel that what we're learning and what we're doing is relevant, of course, beyond just Feed the Future. That's especially true in – I think with respect to USAID. You know, we are working with technologies in South Central Asia in our focus countries that are wholly relevant and connected to the interests of the programs in important missions like Islamabad or Kabul or others in Central Asia.

So, we want to try to work as an agency in this regard, and we don't draw a line between FTF and agriculture across the agency. And we are – for example, I think as you know we're working with your mission now to think about how to leverage some of the learning. And I really welcome anybody in any of our missions, but particularly those outside the focus countries to share their ideas for how we can be most effective in sharing the kind of learning knowledge that we're working here with Agrilinks and KDAD on to missions more broadly. And so, we welcome your thoughts on that, but it's certainly a priority for us.

*Zachary Baquet:* So, another question is talking about risk, and how do we, you know, help farmers to overcome their more risk-averse inclinations when it comes to these new technologies, and how to help them adopt those new technologies that are part of this new approach. And how do you deal with those kind of expenses?

*Rob Bertram:* Zachary, on this –
Zachary Baquet: Sure.

Rob Bertram: – this is a real important point that Mark makes here. At the outset I think I commented about how much of the response to the paper we got were people citing just this, you know, that it was really farmers who were the ultimate decision makers. And I hope that – I tried to convey the fact that, you know, we are not prescriptive. We do not decide what farmers do, and especially on these complex things. And we saw this already with respect to the disadoption issue. It's – farmers make decisions, whatever is best for them for many reasons. But I think what we are trying to do, Mark, is provide better information or more information and better – more choices. So, those things we can do. What we want to learn is how to use that. So, that – I mean, part of – farmer experimentation is hugely important in terms of what to do or not to do, and we've seen that in the South Asian context and we're seeing it in the Sub-Saharan African context and in Latin America.

So, I guess – I hope we are approaching this in a way that respects the fact that it's farmers who ultimately decide. Some of these things, the jury is still out. On the other hand, as I mentioned, there are some of these things that have been widely adopted by millions of smallholders. So, it's an ongoing process, and in this respect it doesn't really differ from other kinds of agricultural innovation and transformation, except with the fact that, to some degree, if we're trying to anticipate situations, I think that becomes very challenging. Because farmers are going to – they're going to make decisions based on their ultimate reality that they deal with on the ground. We – what we can try to do is build in approaches that serve their needs now but also position them to be more resilient in the future. But you're absolutely right: It's they that decide what they are going to do.

Mark Visocky: And I would add to that that dealing – you know, my experience across Asia and Africa and Latin America with smallholders is they're all very, very similar, and they actually have a lot more in common than they do not in common. So, I think that finding a solution – and here's the challenge to all of you, is we need to find solutions that work for farmers. Credit systems, the way they're set up, many of them are not really, really all that advantageous for a farmer because they have this – they borrow the money to buy seeds or fertilizer and they're expected to start paying it back right away. Well, how is that possible when you have to wait four or five months for a crop to mature and harvest and sell it?

There are innovative models out there that are – that are people trying. The One Acre Fund in particular visited us last week, and they talked about when they give out a loan to a farmer, they can pay back that loan when they choose to at any time from the planting to post harvest. And that gave
them a little more flexibility. Now, that wasn't very convenient for the One Acre Fund because they said it's very nerve-wracking because we don't know when the people are going to pay it. But they're still getting repayments of 98%.

So, you know, I challenge you guys to think of ways to make this adoptable by smallholders. And a lot of times, that means sitting down with the smallholder and really looking at their situation, understanding their situation, and getting their feedback on how things work, and then going back to the private sector, then going back to other donors and really trying to come up with a product that is most applicable to them.

Zachary Baquet:

Thank you, Mark and Rob. So, the next question we have revolves around fisheries and fishing. So, Luis Ramos had asked a couple of questions along this line, and it's: "How is fishing seen by Feed the Future as practices to increase food ability and nutrition as climate-adapted practices?"

Rob Bertram:

I can take – make a comment about that, but I invited colleagues to as well. We do have several Feed the Future missions working with small-scale artisanal fisheries. And of course they're – these are located in coastal zones where climate issues are very important, environmental issues generally are important. And my sense is that the focus there is trying to sustainably manage the resource in ways that preserve its productivity, preserve the biodiversity, but also enhance the livelihoods of those communities and individual fisher families. We do have a lot of work at the same time on aquaculture. I think that's not the focus of the question, but there is a certain connectedness between aquaculture and fisheries because together they satisfy the market demand for fish.

We are also taking steps to really generate, I think, climate-smart and biodiversity-smart fish feeds by trying to shift from fish meal products that are based on often unsustainable practices of wild fish stocks being harvested to other sources of protein – in particular, soy, which of course is – can be a very climate-friendly crop in terms of its nitrogen fixation and generation of protein that can, as we talked about earlier, increase the feed efficiency and hence the climate smartness of animal-based systems.

So, what I will tell you also, though, is that we are talking with our colleagues in the E3 Bureau, in the biodiversity group, about fisheries and thinking more about what opportunities there are there for science, the kind of investments that we tend to make in the central bureau to link together with their objectives around preserving fish biodiversity in ways that will perhaps, Luis, increase our engagement in fisheries going forward. But we'll continue to welcome ideas and suggestions in that regard.
Moffatt Ngugi: I would just like to comment as well: So, as Rob mentioned, yeah, so, look forward to an Agrilinks event. We've been talking about this for a while on exactly how we are sort of incorporating fisheries into our Feed the Future and Food Security efforts. I would like to mention too that the question particularly on provision of protein and micronutrients is very, very important. And one of our key goals in Feed the Future is, of course, addressing malnutrition and poverty in general, but I think the idea of both collecting evidence for how that supports our key goal, but also the implementation side are critical. So, in Senegal, in Ghana, in Cambodia, these are places where we are actually working to think about how both artisanal fishing but also fisheries in general can contribute to our sort of topline goals. And the work we are doing here with sort of our central efforts in Washington within the Bureau for Food Security on nutritionists as well as folks working in the Forest and Biodiversity Office, the Forest and Biodiversity Office in E3, is actually critical to the -- to sort of the outcomes we might see on these. So, please watch for that one Agrilinks event coming up.

Zachary Baquet: Next question, coming from Thomas Hurley: "How can USAID get missions in line with this mixed farming approach combining crops, animals, and aquaculture?" He's noting that USAID Bangladesh had just issued an EFA that prohibits including agriculture in the project plan.

Rob Bertram: So, thanks. I'm going to take a stab at this, but I'm sure maybe Mark will add a perspective too, having had more experience being in a mission that Washington tries to have in line. Anyway -- I'm joking. We really don't look at that relationship that way. But we do look at it as an opportunity for active dialogue. I'm going to make a guess here that the example from Bangladesh reflects the fact that the mission has separate major fish aquaculture-oriented activities, some of which are in the same systems. So, I suspect that's an artifact of how their budget is made up.

There's a larger issue, though, and your question gets at it, Tom. And that is that the value chain approach, which has been very -- it's very, very helpful in terms of building in that market linkage for smallholders to help achieve the -- everything, I mean, but particularly the economic sustainability of our investments. Having said that, we know that these value chains don't exist in isolation, and we're trying to think about how -- what kinds of opportunities farmers have looking at their entire system. And so, hence, our -- some of our scaling work offers a focus on legumes to complement a value chain in cereals, where there's a rotation. Other opportunities around bringing in horticulture in a system that might be legume-focused in terms of the value chain. So, there are approaches on that. I think missions are trying to balance this issue of focus on the one hand -- which has been always a top
priority in Feed the Future – with, you know, a holistic approach that looks at the farming household and the various decisions they make.

So, I think there's always going to be a bit of attention there, but hopefully we can continue to learn and try to get it right and, again, enable new possibilities for bottom-up decision making by farmers that allows them to access the kinds of information or technologies that they wish. But Mark, do you want to add anything to that, having been on the mission side?

Moffatt Ngugi:

Yeah, Thomas, I would just – I know Bangladesh is on the line today because I've seen people on the line from Bangladesh. And maybe because it is a procurement question, I would get in touch with them directly.

But having designed the original FTF strategy in Bangladesh and in a couple other places as well, it's that we always leave enough flexibility into the design so that things can be added later on. I mean, I don't think we're arrogant to say we know – have all the answers when we write these things. And things change on the ground; things don't work out the way we thought they'd work out, so the flexibility has to be built into that. And maybe they now have enough aquaculture type of activities going on that they would rather concentrate on a few things. And Rob is perfectly right; it's that we may have in the beginning concentrated on single value chains and didn't think about the offseason value chains that those farmers are integrated in. And I know in Guatemala we are very focused on exports of nontraditional horticulture crops to the US. But that market is only open for four months out of the year. You know? So, what do you do with the land for the rest of the year? And growing more horticulture crops was not the answer because there was no market for them on the offseason.

So, there was a perfect opportunity to integrate maize and beans and work on those crops that were very important to them as well and didn't detract at all from our value chain work. So, I think that there are ways to incorporate a lot of CSA into your design that actually really will enhance what you're really trying to accomplish with the value chains.

Zachary Baquet:

Thanks, Mark and Rob. We've got a question from Amanda Davey asking for what is an example of a practice, a CSA practice that has been adopted by millions of smallholder farmers?

Rob Bertram:

Well, I think especially the use of the word "millions" points us towards the Indo-Gangetic Plain, where we have literally millions and millions of smallholder farmers. And what we do see is this shift towards reduced tillage or no-till being widely adopted across that region. And it's – as I talked about in the slide set, it's really a very climate-smart but also profit-increasing approach because you're using less energy, you're using less
water, but you're getting even higher levels of productivity and considerable increases in terms of things like soil organic matter.

The other thing that I would say that is less of a practice than a technology – I mean, less of a technology than a practice, excuse me, is this practice of climate-resilient seeds. And we have, for example, the flood-tolerant rices being adopted in parts of South Asia. I'm not sure we're in the millions yet but we're aiming in that direction.

The – as I pointed out, the drought-tolerant maize has been widely adopted. There's still a long way to go, but I think as these materials get better and better relative to the farmer varieties, hopefully that pace will accelerate. But, you know, this is something that, again, it's – the information piece, we hope, will be really useful in this: things like cell phone penetration to communities. There's lots of ways now we can be more efficient in getting information to smallholders.

I think Moffatt –

_Moffatt Ngugi:_ I can give another example quick. I don't know whether we're into millions of farmers or pastoralists, but looking at the farmer-managed natural regeneration, we are talking about millions of acres and hectares in Niger all across the Sahel. And I think – as I've seen, I think Torsten, it's on the chat box, he mentions a lot about sort of incorporation of agroforestry practices. That is something that is really widespread across Eastern Southern Africa, and also in West Africa. So, this is an approach, sort of, that incorporates sort of perennial plants or tree species that support both sort of some food needs but also some other environmental benefits that we can talk about. So, that's also another example: farmer-managed natural regeneration.

_Zachary Baquet:_ Okay. Thank you, Moffatt and Rob. So, we've got a question from David Rohrbach: "Given the lack of good data on adoption and disadoption for many technologies, especially in Africa, is there not a need to (a) invest more in M&E and (b) do this differently than we have in the past; i.e., less justification of past investment and more efforts to better understand partial success and failure?"

_Tatiana Pulido:_ Sure. Hi, David. This is Tatiana again. I'm never going to say no to more money for monitoring and evaluation and learning, so I'm with you right there. [Laughter] In Feed the Future we have made a commitment to spend at least 10% of funding that is received – well, actually, as an agency, really – 10% of all funding received, either at an operating unit at a mission or at a central bureau, on monitoring and evaluation. And so, here that means that we have a rather robust emphasis on monitoring and evaluation, and we utilize that to not only, as you say, just kind of be the bean counters but also
really think about improving the quality and the frequency of the data we are collecting.

So, in addition to getting information on adoption or disadoption of many technologies, we're also looking at learning, as you say, from our past investments. And to that end, we also spend about 3% of our budget on both impact and performance evaluations to basically get at this whole question of: "Why did we succeed? Why did we fail? Is there any commonality, some lessons that we learned here that we can apply going forward and really build and improve our future designs to ensure that adoptions or, I guess, dissemination of new technologies are achieving the success that they should be?"

I don't know if anybody else wanted to add a little bit more about that?

*Laura Schreeg:*

I can – this is Laura again – I can speak from the scaling team perspective. And there are a number of case studies going on right now through MSI, and so they're looking at this idea of adoption. But not just through direct beneficiaries – in Feed the Future we're very interested in indirect beneficiaries. And I saw a comment from Farzana on here as well, so that's great – in Bangladesh.

So, you know, if we're going to have population-level impacts, we need things to scale and not just reach the people that we're doing incremental programming for and counting as actually working with on a one-on-one basis through implementing partners, but how we're setting up systems so the indirect beneficiaries are – can also be impacted. So, we have – there are some case studies going on right now and those should soon be available.

*Tatiana Pulido:*

And I'll use this opportunity too to plug three things that we've also done, because it's also a question, as I said and as David mentioned, about the quality of data that we receive. And so, we have – meaning the metrics team in the Bureau for Food Security – have developed more information that you probably care to know about on how to field surveys – beneficiary-based surveys that just recently came out. We have also done a synthesis report on the – I think it's over 100-and-some-odd – 194 evaluations in just food security to try to get some of these bigger lessons learned as we've mentioned. And then, we've also done specifically a guide for our missions – that's all available in Agrilinks. But it's on how to collect data on adoption, counting hectares, all of these questions that you – that implementers or people who are trying to use these indicators might have about, you know, measuring the quality and just getting these data points that sometimes can be very difficult when you're talking about a very small area, be it a hectare or a district that you're working with, or a small population of people.
And I'll take also an opportunity to follow up – there was a question by Z. Rahim around plans for upcoming FTF projects to require CSA indicators. We are as an agency really going through an indicator redesign process – so, not just within the initiative but also within USAID itself – to really take a hard look at the indicators that we are using to collect this information. And so, there are some changes underway that will probably be finalized and made publicly available sometime in the summer of 2016. And those would be applied basically – start the planification in 2016, and then we would have initial results probably a year from now, since it takes a while for systems to come into play.

But in terms of requiring CSA-specific indicators, like Rob and others have mentioned, it's not about stovepiping – also within monitoring and evaluation. And so, there are indicators currently that we would consider required if applicable about adoption, about productivity and production, that missions are already using. And so, it is about, again, enhancing what it is that we do have and what we currently collect as well as getting a better awareness of how climate and climate information is really being built into the project design of activities. And so, it's a process. So, it wouldn't be new indicators; it would be using what we already have and maybe getting a little more information about what about that uptake was really influenced by a lot of this new information around climate-smart agriculture.

**Zachary Baquet:** Thank you, Tatiana. Next question, from Naomi Sakane: "Climate-smart agriculture builds on the use of sound climate data and science. Unfortunately, data availability and quality on the ground remain questionable. How do you plan to address this great challenge?" Thoughts?

**Rob Bertram:** That's a very important question. I – as I said, we very much want to draw the best of what climate science and information we have to understand vulnerability assessments – their utility but also their limitations – and to enhance information opportunities for farmers such that they can – their decisions can be in their better interests and towards their being able to withstand unexpected variability or unpredictable kinds of events.

But having said that, we do recognize the limitations, the fact that we don't have good data in a lot of situations. But progress is being made. There is a lot of investment going on in terms of things like forecasting and so forth. But we do recognize – for example, we can look at trends. So, we know, for example, in a lot of situations that we work in that temperatures are higher than they used to be, that rainfall is less predictable, less seasonal in terms of its reliability. So, there are things that even if we lack perfect information we can start to take steps that help anticipate at least, you know, the climate farmers have now, which is frankly what the farmers will be most interested in addressing. As I said, we – there's other ways we can try to build in that
long-term resistance in ways that are fully consistent with meeting their near-term needs.

But it's a gap; I absolutely agree. And – but there's a lot of bright people in USAID and elsewhere on the climate side of the agency that are really thinking about how to enhance that level of information in a developing country context.

Laura Schreeg: I'll just chime in and say the Global Climate Change Initiative does a lot of work with climate information and climate databases, and we then try to tap into those projects and to those efforts. And I think the point about, you know, "there isn't that much data or good quality data" is really important too because we try to then convey a message about people having to be smart consumers of the information. So, just because it's available, you know, where is it in sort of this pipeline of doing research? And, then rolling it out and being ready to scale up.

So, those investments are totally needed, but we always have to think about where they are as far as needing more money for the research side and the development side, versus being ready to really be super impactful and useful for the smallholder farmers.

Moffatt Ngugi: And I'll quickly – this is Moffatt. I will quickly mention sort of the use of just special tools as well as a sort of key agency priority – and really, a whole government effort – in terms of thinking about using remotely-sensed data and crowdsourcing all kinds of information from really remote places as another key source of important information.

Zachary Baquet: Yep, thank you. We're getting close to the end of time, so I'll wrap up with final kind of combined question. This is coming from Alhassan Tampuri, and also kind of combined with Faustine Wabwire. "What is Feed the Future doing to integrate CSA into policy development in countries, regions, and communities – government investments in agriculture and agribusiness?" And sort of tied to this is part of Faustine 's question, is: "How does the – how are we using or leveraging the Paris agreement to provide momentum for CSA-related operations and policies?"

Rob Bertram: Well, I'll take a crack at it but I welcome my colleagues to come in as well. You know, we have this – not a dilemma, but it's a challenge, an interesting one. We want to be country-led, as I said. In other words, we'd like to follow the lead of our country partners, in part because if they don't prioritize something, it's probably not worth our trying to do it either. So, on one hand it's – there's an aspect of following and supporting. On the other hand, we engage in the dialogue and all kinds of global and regional organizations in which partner countries are present. A lot of the international organizations like FAO, like IFAD, and others are working
with government in ways that raise awareness around climate-smart agriculture. We have the Global Alliance for Climate-Smart Agriculture.

So, there's – I don't think there's one prescriptive approach here. But hopefully, as part of a holistic discussion of food security and agriculture, we will find ways to certainly share the degree to which climate adaptation and mitigation potential is affecting our thinking, partners will do the same, and of course there's many advocates within our partner countries and in regional organizations like ECOWAS or COMESA, other regional organizations in other parts of the world that are thinking about these.

So, I think it's a gradual process, not something that, you know, we flip the switch on. But I believe this issue is here to stay, and as – going forward, it will be mainstreamed in ways that really include that policy dimension. Because obviously, you know, development assistance is a shrinking piece of the overall investment in agriculture. The biggest parts of it are investments from our partner countries themselves and investments from the private sector. They really dwarf the kinds of investments that we make.

So, that policy piece that the questioner mentions is critical. I mean, that's where you go beyond what you do with your own money, but you're trying to be part of a dialogue that influences other investors, public and private as well.

Mark Visocky: Yeah, I would just add that I think we'll be having a lot of these conversations in our missions coming up, because I think the INDCs will be brought into this whole discussion forum in your respective companies, as well as – it is a big – it's a big item on the CAADP and NEPAD African agenda as well. So, I think a – we will have to integrate with the countries' priorities in order for this to work as well.

Rob Bertram: Just so everybody knows, INDCs, which I think are now NDCs – nationally determined contributions – as a result of the Paris COP. So, yeah, great point, Mark.

Zachary Baquet: Well, thank you, everyone, for joining us for this webinar today and for all your comments and discussions and questions. We really appreciate it. We hope you have found this useful. With that, I say thank you and see you in the future. Thank you.

[End of Audio]