

New Horizons for the Agricultural Carbon Market

September 13, 2023

Transcript

SASHA MACKLER (00:00:00):

Great. Hi everyone. Welcome. We're going to go ahead and get started here because we have a really big agenda and a full slate of terrific speakers lined up for the morning. I'm Sasha Mackler and I lead the energy program here at the Bipartisan Policy Center, and we're really pleased to partner with Agri-Pulse and bring you this dialogue this morning on the evolving opportunities in the voluntary carbon markets and in particular animal agriculture's role in creating a more sustainable future. Three years ago, I alongside my colleague, Lesley Jantarasami, who you'll hear from in a minute, launched the BPCs Farm and Forest Carbon Solutions Initiative in recognition of the tremendous economic and environmental potential of agriculture and forestry to contribute to our climate solutions. We call this natural climate solutions. And in these early days, a key thought partner in this work as we were standing up the program was Robert Bonnie, who is a public servant we really appreciate greatly, and he helped us get this initiative off the ground before going on to bigger and better things at the USDA.

And we're grateful that Robert will be with us later this morning to share some of his views in the work he's doing at the Department of Agriculture. But over the past few years, we have worked here at the BPC with a task force of experts co-chaired by former Senators Saxby Chambliss and Heidi Heitkamp, who have grappled together on the tough questions of how carbon programs and carbon markets can achieve both business and environmental goals in ways that are more accessible and can bring more farmers, ranchers and forest landowners to the table. And we're really optimistic about the potential here. We believe that the federal government really has an enormous opportunity to build on the progress from last year's bipartisan growing Climate Solutions Act as they're shaping the farm bill that is forthcoming as I think we all are aware of, additional federal leadership could really support robust carbon markets and create effective incentives for a full range of greenhouse gas reduction in carbon sequestration options while rewarding our hardworking agricultural businesses.

There's a lot of questions that need to get sorted out. Enormous opportunity here that sits in front of us. So we're excited to roll up our sleeves and get to work alongside all the organizations that are speaking here today and all of you that are in the audience to make the twin goals of agricultural sustainability

and climate aspiration and net zero a reality in the timeframe that we all know is necessary. So really, thanks again for joining us. We're looking forward to a great conversation today, and I will now turn the microphone over to Spencer Chase, who is the managing editor at Agri-Pulse, our partner in hosting this conversation to say a few words of welcome before we jump into the conversation. Thanks everybody.

SPENCER CHASE (00:03:04):

Good morning, everyone. As Sasha mentioned, my name is Spencer Chase, and I am lucky enough to be the managing editor of the Agri-Pulse communications team here in Washington. And for those who might not be familiar with Agri-Pulse, happy to have you here for this event. We are the largest ag specific media bureau covering foreign policy issues here in Washington DC and a few years back we also stood up a bureau in Sacramento, California to study the issues going on out there. That particular legislature, the old expression, "as California goes, so goes the country". And those who followed the Supreme Court issues earlier this year may recall maybe why exactly we decided to make that move into studying that state in particular. But here in Washington, we keep a close eye on USDA, EPA, FDA, Capitol Hill, all that fun stuff.

(00:03:55):

And one of the issues that we have been seeing time and time again is a conversation around carbon, be it sequestration, be it markets, be it whatever agriculture can do to work its way into the conversation. There's been that very obvious connection between agriculture and sustainability really since the beginning of time. And in the last few years, we're seeing it become more and more public, more and more vocal, that connection between agriculture and sustainability. And so I think to kind of frame up the conversation, what we like to do as reporters that cover agricultural policy is think back to what is the farmer thinking about this and what is this impact going to be on the ground? And in looking at the subject of carbon markets and the broader sales thereof, I think it was interesting. The Purdue Ag Economy barometer is something that comes out every month, first Tuesday of the month.

It's a required reading for me to see what producers are thinking on the ground. And in a recent report, they had some specific questions, not only just on how are you feeling about the farm economy is now a good time to buy new equipment or new land, but they also broke out into asking some questions about carbon markets. And what they saw was 6% of corn and soybean growers said they have engaged in discussions with companies about receiving payments to capture carbon on their farms. 2% have signed a contract, and those that opted not to sign a contract said that half of them said it was because the payment level was too low. About 47% of those who engaged in this question said they were offered between 10 and \$20 per metric ton. And so what is the right rate? What is the right way to engage with growers?

What is the right way to engage with producers of all forms? And what is the right way to engage with the private sector in determining what exactly the market is and what is the need in the private sector

for these carbon markets both in and out of agriculture? All these conversations are discussions that I'm looking forward to hearing here. These panels convene and the discussion takes place here today. So I'm going to make myself scarce and let you listen to the folks you actually came to hear. And one of those people is Lesley with the Bipartisan Policy Center.

LESLEY JANTARASAMI (00:06:14):

Hello everyone, **Lesley Jantarasami**, managing director of the Energy Program at the Bipartisan Policy Center. But first off, just wanted to give some quick logistics notes and a quick snapshot of how the morning will unfold. We have three panels set up to follow, one after the other, and there are no planned breaks in between. So the bathrooms are located next to the elevator bay, and this room has two exits on either side. And then following the event, we'll be planning to serve lunch outside of this room here. So each panel will have a few minutes at the end to take questions from the audience. So if you're participating virtually, please type your questions into the chat feature in YouTube. We have BPC staff that are monitoring the feed to get your questions, and we will put that in front of the moderator. And if you're here in the room, feel free to just raise your hand.

We have some folks that will be circulating with microphones for you to ask the questions so that the online audience can hear the question. So in order to keep things rolling throughout the morning, our moderators will not be giving full speaker bios or introductions. So we have here, if you're in the room, we've printed out a list, you can refer to that print sheet to get the information. And for those online, you can download a PDF of the speaker bios on our webpage for this event, which was bipartisanpolicy.org/events. So now I'll ask panel one to come to the stage, and then I will turn things over to **Dan Blaustien-Rejto**, director of Food and Agriculture at the Breakthrough Institute and the moderator of our first panel.

DAN BLAUSTIEN-REJTO (00:07:56):

Thank you everyone, and thank you, Lesley, for having us. Agriculture is arguably the elephant in the room when it comes to climate change in the us. Agriculture counts for some 10% of greenhouse gas emissions, and yet while emissions from energy industry and some other sectors have fallen over the past 10, 20, 30 years, emissions for agriculture have largely increased. Now, one opportunity to reduce these emissions is the voluntary carbon markets in which companies purchase carbon credits generated by various mitigation projects to address their own emissions. This has potential to drive trillions of dollars potentially into vital climate mitigation projects around the world, including in agriculture. However, as we'll get into, not all carbon credits are created equal. Many don't have the climate benefits that they're touted to leading to many high profile critiques, especially over the past year or two of the entire enterprise of the carbon markets, and even leading to a decline in some carbon credit sales.

Now, this has created a bit of a crossroads and the carbon market as companies have raised their ambitions on climate, and as new technologies have arisen to decarbonize agriculture such as additives that you can give to cows to cut methane emissions, which we'll get into this crossroads, perhaps you can describe in one way. On the one hand, there's this question of whether the carbon market can be redeemed, whether it's inherently flawed on the other, whether it can be improved to become a significant source of mitigation in agriculture. So, to get into this question, and I'm sure to resolve it once and for all.

We have a fantastic panel of experts here. On my left immediately is Michael **Boccardo**, executive director of Dairy Cares. The center is **Thomas Blackburn**, head of Business Development and Partnerships at SustainCert. On the end is Suzy Friedman, senior director of food Policy at World Wildlife Fund.

As Lesley said, full bios are available in the materials, so we'll dive right in with you, Thomas. Can you tell us what you see as the role of the voluntary carbon market generally in decarbonizing agriculture?

THOMAS BLACKBURN (00:10:31):

Thanks Dan. I think it's a big question. I like to refer to it as kind of the 250 billion question, which is the carbon market going to go from \$2 billion to 250 billion by the end of 2050, and I think that as you outlined, there's a couple of key elements of whether we're going to see that occur by 2050. Right now you have two things that are evolving in the space. One is the question on the credibility of some very specific project types. So I also want to be clear that a lot of the sort of questions around carbon markets and quantification are coming from some very specific project types in the market. So it's not necessarily an entirely across the market question, right? The other is that you do have an evolving sort of corporate decarbonization strategy framework that is also influencing how companies are thinking about using carbon offsets and what they're going to use them for.

So just to address, I think the first part of that, carbon markets have been a tool where companies can invest into projects to reduce emissions. A carbon offset represents one ton of emissions. Companies were looking at that as a tool to claim carbon neutrality so that they could go to the market, purchase an offset and purchase enough of them that were equivalent to their emissions in a specific year and claim carbon neutrality in the last couple of years that's been deemed an inefficient or insufficient, I will say decarbonization strategy for a company to take on. If that's only what they're going to focus on. They also need to reduce their own emissions and focus on how they're going to change their business fundamentally to get to what's called a science-based target now, which is how does a company align with a 1.5 degree world into the future?

What are the emissions that they're going to be allowed to emit if we're going to achieve a 1.5 or a two-degree world? And then there's also this journey of net zero, which is there will be some residual emissions, which then you'll need to compensate for. And so the evolving space is really how are carbon offsets going to play in that framework, which is along that path, companies can potentially compensate on their way towards the decarbonization that they need to implement. And then once they've achieved

that significant reduction, they can use carbon markets also to compensate towards the net zero strategy. With that sort of evolving framework, agriculture has a very significant potential role to play. There are questions around the types of projects in terms of reductions versus removals and how those will be influenced. So there is more pressure to generate removals in the carbon market these days.

(00:13:28):

For agriculture itself, I think it has not been a huge source of carbon credits in the past historically. There's a number of reasons for that, which we'll get into, but you can think about it in terms of also the popularity of agricultural carbon credits. There's some real reasons that we haven't gotten there, including science measurement capability, the efficiency and the cost of implementing some of those projects to actually have strong, rigorous monitoring reporting. But on the flip side of that, if you look at it from the buyer side, agricultural credits are actually very popular in the market, even though they are a small portion of the market thus far, it is growing and we are seeing that the projects, I know the credits sell out quite quickly. There's a personal side to that. Companies like to see the people they're investing in and agriculture provides them a real direct connection to a story, and we're seeing popularity of those credits in the market.

DAN BLAUSTIEN-REJTO (00:14:34):

Great. Thank you, Thomas. So, as I mentioned earlier, of course, and you brought up as well some of the, I guess, challenges that have arisen in some parts of the carbon market. I think you were alluding to largely forest management projects, but some other ones as well that have raised issues and concerns. But I'm curious, Suzy, World Wildlife Fund has long been a thought leader in the generation of carbon credits, and Heather used issuing various reports, which I encourage everyone to look up about how corporations can best incorporate offsets, for instance, into their decarbonization strategies. Curious from your perspective what you see as some of the biggest concerns right now for you about how credits are either generated or how they're used, especially in the agricultural space.

SUZY FRIEDMAN (00:15:24):

Well, I think it's not new. I think there are a number of really key components of what makes a quality credit. They need to be real. They need to measure real reductions in CO2 two emissions based on a real and credible baseline, be measurable based on very credible scientific data and accurate methods. Be additional, represent real reductions that wouldn't have happened absent the carbon market, be permanent, deliver real reductions that won't be reversed after the issuance of the credit. And if there are risks, have compensation really incorporated into the methodology, avoid leakage. It doesn't help and doesn't provide any benefit to the climate if the credit just moves that generation of emissions somewhere else. We have really good methods for reporting and monitoring and verifying and comply with social and environmental safeguards. And the biggest concerns and ways to address those really revolve around quantification data and very good measurement verification and monitoring. And so having really rigorous standards for that data and measurement and verification and high quality

standards are really the best ways to address and provide trust in the quality of the credits and very good transparency into how that data is being collected and the transparency into how the standards were developed, I think is really the best way to drive trust and ensure the quality of the credits.

DAN BLAUSTIEN-REJTO (00:17:10):

Okay, thank you. Now, one reason that we're here today is to talk about the incorporation of new this livestock mitigation efforts into the carbon markets. And Michael, in your work in California with dairy cares, you're working with many dairies to help them incorporate new technologies to reduce their emissions. Could you tell us a little bit about what some of those emerging technologies are and their potential to reduce emissions?

MICHAEL BOCCADORO (00:17:39):

Sure. In California, we're operating under a little different framework. We're sort of on the front lines. The state hasn't set a goal for livestock methane reductions. They've set a mandate for livestock methane reductions of 40%, and we've made tremendous progress since 2016. On the manure side of the livestock sector, it's a big issue. Livestock together between dairy and beef cattle primarily accounts for 55% of all methane in California. And so achieving a 40% reduction is very significant when you're looking at short-lived climate pollutant. So we've undertaken a number of practices on the manure side from digesters to what we call our alternative manure management practices, solid separators, converting from flush systems to vacuum or scrape systems, and tremendous, tremendous progress. Probably now approaching about 3 million metric tons of reductions from the projects that have been implemented to date. And we've got 3 million more to go to be able to achieve our share of the livestock reductions a little more than that. So enteric has become a really, really important focus for us because the state's not looking for just reductions on the manure side, they're looking for reductions overall in the livestock sector. So, we're going to have to tackle enteric.

DAN BLAUSTIEN-REJTO (00:18:58):

Can you tell us what enteric is?

MICHAEL BOCCADORO (00:18:59):

So, enteric is the front end of the cow. We like to think about enteric emissions as the cow burps that come from the natural digestion process. When I do these conversations, I talk about the backend, the manure side, and the front end. And in California, they're roughly equal in the dairy sector, but the cow burps is a real challenge. And globally, the enteric emissions are far more important than the backend of the cow because we tend to see enteric emissions primarily from beef cattle being primarily the methane emissions we have in the livestock sector. So we're anxious to find solutions on the enteric

side. Feed additives obviously are part of that, and so we're anxious to really start to focus. The nice part is we've got some of the brightest minds in the world working on enteric solutions. Every day I get an email about somebody else who's looking at a new way to approach enteric everything from genetics to the feed additives. So it's evolving area. The nice part is it'll be quick to implement once we find solutions. In most cases, it's easy for us to add something to the ration that a cow already eats, particularly in the dairy setting or in the beef feedlot setting. So, there's a lot to do, a lot to accomplish, but we're well on our way to achieving 40% reduction in California, and if we can do it, I think others can follow the lead.

DAN BLAUSTIEN-REJTO (00:20:22):

At Breakthrough, we've looked a lot into feed additives, and I think many people here perhaps have heard a little bit about them. Things like compounds or feeds derived from seaweed or in some cases or purpose developed drugs or additives or supplements that can be given to cows to reduce these enteric emissions from the front end. I'm curious though, can you tell us a little bit about how these are starting to be incorporated into the carbon market, if at all? Can producers get carbon credits or generate them?

MICHAEL BOCCADORO (00:20:54):

There are already several voluntary protocols out there for generating credits. Verra 2.0 is one of those, and that's a really important opportunity for farmers. There already is some monetization of credits for farmers who are feeding Agolin as it's an essential oil that can be added into feed that does reduce methane, a little less than 10% on the enteric side, and some farmers already generating credits from that program. So we're anxious to move forward to get more integrity into that marketplace, and we have several steps underway to help accomplish that in California.

DAN BLAUSTIEN-REJTO (00:21:33):

Suzy, you described what integrity means or what a good credit means earlier. It has to be permanent additional. These criteria so far, the way you're seeing these projects and credits and technologies rollout, how do they match with these criteria? Do they solve some of these issues or address some of these issues of permanence or additionality?

SUZY FRIEDMAN (00:21:58):

I think there are some really great opportunities for enteric emissions in the carbon market. I think one thing that is really important to keep in mind from the start is not to look at the carbon market as the only option for driving progress with enteric emissions that we should really be investing in and pursuing all opportunities with enteric emissions and looking for the variety of solutions. And sometimes that will be the carbon market and sometimes it won't, and don't try to drive everything just through the carbon market because that will just limit our ability to really pursue what we can do with enteric emissions and also compromise the carbon market itself. So don't try to fit everything into the carbon market. There's

also other incentive programs, other options with technical assistance. So, let's look at the full range of ways to advance progress on enteric emissions.

But with the carbon market, I do think that there are opportunities with the carbon market. I think the things to really keep in mind to make sure that where that is the appropriate pathway on enteric emissions, make sure that we have really good MMRV or collecting really good data. I think one of the real advantages here is on that permanence piece is that when you are implementing the solution, you have permanence on your side because when you're doing the feed management, when you're using the additives, those reductions are permanent. You're not continuing to store the enteric in the cow's stomach. You need to continue to maintain the management so that they continue going forward. But even if the management stops, you don't have stored enteric that then going to get released because you stop the management. So that's an advantage there, but need the really good data collection, good MMRV, make sure we have the good standards that go along with it.

So, I do think it's a good opportunity, but again, make sure that we're pursuing enteric emissions with a range of options. And for some dairy operations and other operations, the carbon market won't be the best option to make progress on enteric. And so we just need to keep those options open and pursue the right one.

DAN BLAUSTIEN-REJTO (00:24:14):

So, what are some of those other options?

SUZY FRIEDMAN (00:24:18):

So I think we want to look to grow opportunities through NRCS incentive programs, make sure that they're offering a good package in terms of incentive programs, look at what state-based programs can offer, make sure there's good technical assistance available, more options beyond that as well, but just make sure that carbon market isn't the only option that we're looking for, because sometimes that won't be the right option.

DAN BLAUSTIEN-REJTO (00:24:46):

And you mentioned the importance of measurements, monitor and reporting verification. I'm curious to hear from Thomas, Michael as well as you Suzy, what does good MMRV as it's often shortened to? What does that look like when it comes to enteric methane emissions and what do we need either from policymakers or in terms of scientific advances to really ensure that there is high quality MMRV that meets companies' requirements and standards?

THOMAS BLACKBURN (00:25:18):

I'm happy to take this one on the question of does it meet the criteria of carbon credits? I think another big one to think about, just going back to the last question is additionality, which is the project needs support and financing. In order to make it happen, it needs to go beyond business as usual, and that's the sort of compensation measure that you're given, right? When you make a claim from a carbon offset. So that is much more clear cut in a conversation around, did you implement this feed additive rather than would a forest still exist if I protected it? Right? And those are two very different questions, and the latter one is much harder to answer than the question around feed additives. So, I think it is a good fit with additionality.

The other question of MMRV in the voluntary carbon market, it is a voluntary space. There are standards that exist. There are four major ones. There's Verra, the Climate Action Reserve, American Carbon Registry, and Gold Standard. Those dominate the market. They do have very well established processes for establishing those standards and also looking at specific methodologies and approving them for specific project types. I can't necessarily speak to what is good monitoring for an enteric fermentation project, you need the science to really understand the actual impact of the feed additive. You need to be able to measure in place with a certain representative sample that that's actually occurring. You need to know that it was applied and given to the cows. This can be a rigorous process, and when you ask for all of this from a farmer, it becomes this question of the buyer saying, we need more rigorous MRV. And then the question is, what is the cost and time balance to make sure that we're getting to the right place to make sure that that's not appropriate amount to give us high confidence that that's occurred, but not too over the top in terms to make it completely unviable from a financial perspective as well.

When we're looking at MRV systems, a lot of that is still very manual. That goes through a process of being reviewed by ISO accredited auditors that are independent from the standards they go and onsite look at those projects. A lot of that is through significant documentation and sustain cert. The company I work for, we are one of those auditors. We go on onsite, we look at the projects, we review them and provide feedback on if they've met the standards, do they have the monitoring reporting that's required. We know that this is a process that needs to be sped up to scale the market. We also are leaning into technology and digital tools to make that better, faster, and cheaper in ways that we can, it will evolve over time, but I think with technology, we also have the ability to look much more directly in projects, get primary data and do that in a way that's much more efficient than potentially what we've been doing in the past. So I think technology will also help us to demonstrate and be more transparent in some of those projects as well. Maybe you speak to enteric fermentation monitoring.

MICHAEL BOCCADORO (00:28:47):

Certainly. And one of the things we've had in California for close to 10 years as a protocol for dairy digesters, and that's important for carbon markets, that's allowed us to generate credits in the low carbon fuel standard in California as well as the voluntary offset compliance program under the cap and trade program. So it's worked very well. It serves another very important function though, and that is, it's also the tool that the state uses CDFA and California Air Resources Board to calculate reductions for

the state's inventory. What progress are we making toward that 40% reduction that thereafter, how are we quantifying those? And so monitoring, reporting and verification is important from that standpoint. And so with that in mind, we will in the next several weeks, maybe month, and I've been saying that for several months, but in the next several weeks or month, we'll be submitting proposed protocol to the California Resources Board that's been worked on.

It's a variation of the Verra 2.0 protocol with some improvements that Dr. Cabret at UC Davis in California has put forward. We're anxious to submit that because it's going to be important for the state to have a program like that in place a calculator or protocol, not just for carbon markets and offsetting, but for insetting those reductions in our supply chain and for calculating them towards the state's inventory. They're looking for reductions in enteric, and we're going to need a method for quantifying those. So we hope to have something in place mid to late next year in California. That'll be a step having carb further review and approve that protocol that we're putting forward. I think we'll provide additional integrity to that program. I think the resources board has a great deal of experience in this area, and so we find that extremely, extremely important, and it's going to be important for one other reason in California, and that is the state legislature did provide 25 million in the budget to set up for the first time an early adopter program for farmers, dairy and livestock farmers that are willing to utilize feed additives or other enteric methane reduction strategies.

Incentives have been the basis for all of the efforts in California to date both credit markets as well as grants, and we're able to stack those in the state that's allowed us to put these projects in place and to make the progress that we've made. And we're hoping to do the same thing on the enteric side, and that'll be some combination of state incentives. Hopefully some work with some of the global food companies to inset and have compensation from those companies for those reductions. And hopefully we're going to find a way to match some of the state dollars with either private philanthropic donations or hopefully federal funding. The goal is to compensate the farmer the early adopter for the cost of putting these feed additives into the rations and to show that they can work, and then hopefully the markets will further develop and hopefully compensate for that. But I agree, it's not just about offsetting. The next panel is going to talk a lot about insetting, and that's a really, really important topic for those of us in the dairy sector. We want to see these reductions get into the supply chain. Almost all of the reductions we're achieving on the manure management side with digesters are going outside of our supply chain. And so, it's really important for us to start taking an internal focus on reducing supply chain emissions.

DAN BLAUSTIEN-REJTO (00:32:23):

Now, one critique that's been levied at the LCFS program, the digestive program, is that there's arguably some say that dairy farmers are being over credited essentially, receiving too much money through that program. And without getting into that really thorny issue, I'm curious if you see any similar concerns arising when it comes to enteric methane projects, especially with the stacking of programs. You mentioned new California program, we're talking about offsets, maybe there'll be new federal

incentives. Are there any challenges that people should be aware of upfront about how these might all interact?

MICHAEL BOCCADORO (00:33:07):

It's an interesting question. It's a pretty small but vocal group of folks that are against some of the methane crediting that we've been doing in California, but we stack credits and incentives across the renewable energy spectrum. This is not new. It happens with electric vehicles, it happens with solar power on our rooftops. It just happens. And so we really haven't taken too much concern with the challenges that have occurred. Yes, there will always be challenges. I think there are folks out there that are concerned that we're making the dairy sector more sustainable, and they're not supportive of that for various reasons. They don't support dairies, they support a vegan lifestyle. They're not supportive of animal agriculture in general. I can't solve for that problem. What I can solve for is the states need to reduce methane, and we're showing we can do that and do it very effectively, and we're doing it without putting farms out of business. And I think that's a really critical point.

DAN BLAUSTIEN-REJTO (00:34:08):

I wanted to dive into measurement and monitoring a little bit more. I think one thing that might be useful for the audience first though, is to delve a little bit into what some of these feed additive and enteric methane reduction efforts really look like. And I guess not to get too into the weeds here, but what the range of efficacy is, because these are not mechanical processes. These are live animals that we're talking about. And I imagine that some additives work better with some animals than others, and there might be quite a bit of a range of efficacy here. Michael? Thomas?

THOMAS BLACKBURN (00:34:48):

I can speak to a little bit of what I've seen with the standards and the evolution of some of the feed additives is, and I think you were highlighting carb updating the protocol, et cetera, and that's based off of science coming out of UC Davis. And I think that that's a really important and clear message about the carbon market is that a lot of it is only as good as the science that exists today. So having good science around the products and solutions that we're actually implementing are necessary to implement strong protocols and have high credibility in the carbon market. With the evolution of feed additives, we've seen them sort of pop up. It does take the carbon market a bit of time to respond to those things because if the standards are going to build these methodologies and protocols around it, the science has to be super clear on what the sort of impact of those are and the range of significance in terms of that impact.

And so that affects the overall uncertainty that you can put into a GHG calculation, a greenhouse gas calculation. So all of those things sort of feed into uncertainties, et cetera. The more certain we are from the science perspective, the more certain the carbon credit becomes as well. And then you build into that. What are the checkpoints that you need to actually say that this occurred on the ground was real

and that you can measure it? And I think from enteric methods, what are the type of things that you guys are reporting in those methodologies?

MICHAEL BOCCADORO (00:36:27):

And just to add a little bit to that, on the dairy digester side for example, it's very easy to monitor, report and verify. We know exactly how much biogas is being captured at the dairy farm. We're metering that we know exactly how much methane's being produced and injected into a pipeline because we're metering that and so is the gas company. So we have very hard data that we can use to verify some of the reductions. And monitoring is pretty much more straightforward than it is on the enteric side. But there is technologies out there that have led to a lot of the research cows. It can be monitored from individual cows. There is going to have to be some estimation. Different cow breeds react differently to different feed additives. And so we're going to have to monitor that. It's going to get more complicated. Now we're talking about stacking some of these feed additives in the animal's ration and hoping to get kind of a multiplier effect with some of those rations.

So, it's not going to be perfect when we start, but we do need to get started and we need to allow it to evolve. And there is new technology that I read about and hear about all the time that can help monitor those emissions lasers, drones that can fly over dairy barns. We've gone out and monitored the digester operations on dairies, and the data that's coming back suggests that it's even a more significant reduction than the protocol provides. And so that's a positive development. So we're going to need to do the same thing on the enteric side and evolve with it as we learn more and as the technologies evolve. But important that we do get started, these additives are going to be commercially available very soon, maybe as early as next year, and it's going to be really important for us to start implementing them.

DAN BLAUSTIEN-REJTO (00:38:12):

Suzy, I want to give you the last word before we open it up to Q and A. I'm curious. We've talked a lot about the generation of carbon credits, about the integrity and quality of carbon credits themselves, but we haven't really talked much about the other end of it of companies buying these credits. What does integrity look like when it comes to how companies make claims about their use of credits and their purchases?

SUZY FRIEDMAN (00:38:39):

So really important that the purchase of the credits have a lot of integrity as well. And there are a few key rules of the road, whether this is for enteric emissions or anything else. And the first one is that businesses need to prioritize executing a transparent science-based strategy for reducing their scope. One, two, and three emissions and purchase of carbon credits needs to be complimentary to in addition to executing that strategy. And that is first and foremost the most pressing thing to make sure that this is benefiting the climate and really has integrity. Businesses can purchase carbon credits, but they need

to be framed as supplementary to those scope one, two, and three emissions reductions and be outside of their value chain. And that needs to be really clear. Also really important that businesses purchasing carbon credits make clear that they're not subtracting those from their scope one, two, and three emissions inventories. Also, that those purchase carbon credits meet those robust quality criteria. And there's very clear communication ensuring that there isn't misrepresentation about what those carbon credits, where those fit in those scope one, two, and three emissions reductions. And as long as all of those things are met, carbon credits can be a very important part of what a business is delivering and advancing in the carbon arena and be part of delivering on ESG commitments. But they need to meet their own scope one, two, and three commitments first.

DAN BLAUSTIEN-REJTO (00:40:35):

Thank you. I want to turn it to the audience. Are there any questions in the room or online?

AUDIENCE QUESTION (00:40:55):

Hi. Janet. Peace, a new climate. I'm wondering what you think of the Integrity Council for the voluntary carbon market and their benchmark for environmental quality,

THOMAS BLACKBURN (00:41:06):

So, the Integrity Council for the voluntary carbon market has been a sort of international effort amongst civil society, the private sector and governments around what does the role of the voluntary carbon market and what does quality look like? They've set forward some core carbon principles that essentially could be used to evaluate the voluntary standards. So essentially trying to establish a baseline of environmental integrity across all of the voluntary standards. If you're thinking about price and quality, it could become a race to the bottom in voluntary markets if someone just comes out with a lesser standard and says it's just as good as somebody else's credit. So, what the ICVCM is trying to do is establish this is what quality looks like. They've done that for the standards and across the board, and now they're actually going methodology by methodology within some of those standards to actually review the strength of them against those core carbon principles.

And the standards like Vera and Gold Standard are aligning with and will sort of be evaluated against those chlorocarbon principles as well. So verification, all of those things, part of what's required in the core carbon principles, if you do have, are interested in what that looks like in an international consensus based process. The core carbon principles are a good place to start to understand what people are thinking about when it comes to quality in the voluntary carbon market. The other one to mention is the VCMI, same letters in a different order. The voluntary carbon market, I'm forgetting what the name of it is, initiative. So that one is really focused on the buyer side. What does it mean to make a claim? How should you talk about it externally as a corporation and what are best practice guidelines for

buyers and the market? And that's similarly to the ICVCM, a very broad stakeholder engaged process that's looking at where is it appropriate for companies to use this in their corporate decarbonization strategy.

AUDIENCE QUESTION (00:43:27):

Hi, I'm Harry Huntley with the Environmental Policy Innovation Center. You guys have talked a little bit about some USDA programs and obviously there's a lot of USDA climate money floating around right now. So, I was wondering if you just talk a little bit more about the interplay between these voluntary programs and the carbon market. Are there things the programs could learn from the market? Are there ways USDA programs could be doing more to support the carbon market? How do those two work together?

DAN BLAUSTIEN-REJTO (00:43:54):

Do you want to take this one, Suzy?

SUZY FRIEDMAN (00:43:57):

I actually think one of the most important recent things coming out of USDA is their investment in their new MRV strategy for ag and forestry and the new investment in monitoring and measurement and data collection and how that can help create more better measurement and data collection that can support more insight into that critical component that is going to be help farmers and ranchers and forest landowners have more data to feed into their ability to participate in, whether it's incentive-based programs or carbon markets or other kinds of markets. So I think there's a lot that we can talk about in terms of the other programs and interplays in ways that NRCS incentive-based programs can help get farmers and ranchers and forest landowners ready and able to participate in carbon markets. But I think that investment in data and measurement and monitoring is actually the biggest thing for the interplay between what USDA is doing in the carbon market right now.

MICHAEL BOCCADORO (00:45:06):

I would just add that we're a big fan of matching dollars and the state dollars that have been invested in California now are roughly approaching about \$700 million that they've invested on the manure management side that's been matched more than two to one. The total investment on the manure management side now in California's over \$2 billion. And that other equity has come in from the investment community and from the farmers themselves. And we're looking to do the same thing on the enteric side, which is to match some state dollars hopefully with some private or federal dollars, as well as investment by some of the global food companies who are anxious to get these reductions in their supply chain. So, I went on record as being very supportive of stacking, and that's the kind of front end and backend stacking that I think is going to be really important as we try to make this happen in the short term.

THOMAS BLACKBURN (00:45:58):

If we think about scale as well. I think what's talking about in terms of USDA programming, having standards for what they're looking for in those measurements. I mean, if you take soil organic carbon programs, depth, size, frequency, all those things are very different based on the program that's being implemented, and that impacts our ability to have comparable science across the entire country as well. So more standardization of that across the programming and requirements I think would support a lot more science and a better understanding of what we're achieving in those programs across the board. It's a balance though, with flexibility because a lot of those programs need flexibility too.

AUDIENCE QUESTION (00:46:48):

John Hixson, Yum! Brands. On the corporate side, there was a big push years ago for the setting of science-based targets and kind of getting that measurable impact and outcomes which fit well for coal, oil and gas going into the atmosphere, but really doesn't work that well for above ground carbon cycles. And now we're having this wave of pressure around nature, biodiversity land use. How do you see the marrying up of the carbon work with what seems like a broader movement on that kind of land use guidance kind of pressures that are, how do those two systems ultimately need to work together?

The flag is new guidance forest as land use guidance as well that's come out. That includes land use change. You also have the science-based targets for nature that's evolving. So I would say there definitely are more increased pressures. Carbon markets have always addressed co-benefits as a part of the projects and the process. So looking at what are the impacts on biodiversity and nature, et cetera. I do think land use change is probably a very, very difficult one to incentivize as well and create positive incentives there. The carbon market thus far, especially if you look in places where there is high deforestation, et cetera, the prices in the market aren't sufficient to play a role in preventing that deforestation from happening. So that's where it becomes this question of price and value. And are there additional things that we can bring into the carbon market to demonstrate impact on biodiversity, nature, water that amplifies the overall sort of impact and stacks some of those benefits like we're talking about, to make sure that that's a good investment.

I do think right now there's a lot of frameworks that are coming out. It is a challenge, making sure that those work together is something that I think everyone is focused on. It is very difficult in the context of different sectors, and I think for agriculture being a nature-based sector, it's one of the more complex ones you can do in the carbon market. People come to us and say, Hey, I want to do a soil organic carbon project. And we say, okay, you're about to embark on the most complex carbon offset project there is to date. And that's something that companies are being asked to report on an annual basis. So, it is complicated. I think there is some definite synergy, but there are trade-offs when it comes to sustainability as well. Something that may be good for carbon may not be good for water or vice versa. So those are real challenges that still remain, I think.

SUZY FRIEDMAN (00:49:47):

The one quick thing I'd love to just add to that, that I think is a real win-win win is the opportunity to keep grasslands intact. Real very significant carbon benefits, also benefits for biodiversity for water and is often overlooked. So I just flagged that one as well.

DAN BLAUSTIEN-REJTO (00:50:06):

That's a great point. Well, let's give a round of applause to our great panelists. Thank you.

JACQUI FATKA (00:52:29):

Moderate the second panel today to build on some of the great comments that were made in that first panel. We know one of the most significant obstacles when it comes to achieving sustainability goals is creating profitability on the farm. And I like to say, as a daughter of a farmer, we had some dairy discussion, we'll have some dairy discussion today too, a granddaughter of dairy farmers on both sides. This is really something that's important to me, but to so many. Because profitability on the farm is sustainability, and that is why it's important for these families in the farm families that it supports. So today there is no livestock carbon market that exists. We hear about this tremendous demand for scope three credits, but we need to start asking how do we create a market and value starting at that producer level? And so our second panel today, we're going to have leaders throughout the entire value chain discuss how this first of its kind livestock carbon market will work, what carbon credit in setting means, which we heard a little bit about that in the first panel, and then how this marketplace can actually advance sustainability efforts throughout the entire value chain.

To dig deeper into this, we have this esteemed panel of guests. I'm going to start right next to me is Darrin Montiero, who's with California Dairies. Paul Myer, who's the CEO of a new company, Athian. Jeff Simmons, who many of you may know, the president and CEO of Elanco Animal Health. And on the far left here, stage right is Daniel Peerless, who is with Nestle Company.

We're going to start with Daniel at the end. Much of the discussion on carbon markets first started with companies to offset their actions. Daniel Peerless, who is the global sustainability sourcing lead at Nestle, is here to kick off our discussion and share with us what the industry inherited with those first carbon marketplaces and what is Nestle doing to transition from a lot of that thought process around offsetting to a marketplace that really benefits all the players throughout the value chain, starting at the producer level.

DANIEL PEERLESS (00:54:43):

Before we go, I don't want to take too much credit. I'm the sustainable sourcing lead for dairy. For dairy, not the entire Nestle organization, which is so much bigger. But what we inherited from the offset market was really a loss of opportunity to find reductions in our Scope 3 emissions. So Nestle at its heart is an agricultural company. If you look at our published emissions or a footprint where more than 70% of our total Scope 1, 2, and 3 footprint is agricultural production, the farming and on lands and with cattle that we don't own. And so finding these opportunities for reductions, insets or other opportunities are

absolutely critical to us. And the offset markets recognized the opportunities where they were in forestry, in agriculture, very land-based sources of reduction. However, from our standpoint, under the carbon accounting rules, which we subscribe to, if a credit is sold outside of the value chain sold to somebody who isn't buying the milk, that reduction is gone.

We can't account for it. So, in the case of digesters and the California LCFS system, that program was set up, it really brought in investment, it benefits the farmers, but it was set up for fuel companies. And so the carbon negative fuel that is created from the dairies is an excellent source of renewable natural gas, but it's carbon negative because the reductions, the avoided emissions that would've occurred in the mineral management system are allocated to the gas and they're gone from the milk supply. And so we have to add that back in. And so what we inherited was a missed opportunity, I think, and we're trying to bring that back in so that the reductions that occur within our supply chain pass with the milk, through the processors, the customers, and to the consumer that is looking for that higher value product.

JACQUI FATKA (00:57:09):

Well, I'm going to turn to Paul with Athian and he's a sustainable livestock solutions, which many of you may not know much about Athian. It's a first of its kind cloud-based platform that provides livestock producers a place to benchmark their operation footprint, which we've talked a lot about the data and measuring that data and helping with that marketplace to monetize their reductions resulting from what they're doing on the farm. Daniel talked a little bit about that in setting, but let's do a kind of 101. What is the difference between in setting and offsetting and how does Athian play in that space to help with really being able to measure and execute that in setting profitability options for producers?

PAUL MYER (00:57:55):

It's a great question, and I think Daniel did a pretty good job of explaining the conundrum that comes with the offset marketplaces and that history. And you really have to look at that history. Carbon markets were originally designed primarily around energy companies that had to offset the carbon. They released into the atmosphere as a part of their normal operations. And so you had to have a way to quantify sources that could pull those carbon emissions into the soil or into woodlands or to forestry. And so by carving them off in that fashion, essentially what you're doing is you're balancing out the output for in setting, it's a very different formula. Instead of creating problems and then finding a way to offset those problems in the environment, what we're doing is we're driving systemic change to the operations of especially animal agriculture. How do you do that?

How do you fundamentally fund those practice changes that will systemically change the course of those emissions in the first place? So you avoid the emissions, you limit those emissions, and you really drive a much more sustainable outcome. So the challenge is that traditionally those carbon offsets get sold out of the value chain and they go towards an energy company, for example. And then a lot of those dairy digester projects were funded by energy companies. So, what we're doing on the animal agriculture

side, and what Athian really is focused on is validating and certifying on-farm practice changes that systemically drive sustainability and really leveraging third party validation and verification bodies like Sustained Cert, they were on the first panel. They do a great job of helping to identify where those issues are. Our primary role is how do we fund those practice changes and essentially by carving off and selling carbon in setting, and we built the world's first carbon in setting marketplace for animal agriculture.

JACQUI FATKA (01:00:03):

Well, I want to turn now to Darrin Montiero who serves as the vice president of sustainability and member relations at California Dairies. And you lead the sustain sustainability efforts at the second largest area cooperative in the country and its subsidiaries. You get to work with producers themselves and you get to be there as they are making these decisions. And we talk so much about sustainability, but I also talk to the beginning sustainability on a farm is not just sustainability as everyone in this room might consider it, so it's also economic sustainability. As you are working with those producers, what kinds of things do they have to consider when they are looking to adopt these types of systems, both from a sustainability, from the environment, but also an economic sustainability discussion?

DARRIN MONTEIRO (01:01:00):

Thank you. I think it's important that we have to remember that farmers are making decisions with cash every single day regarding their livelihood, right? Inputs, those expenses are going up and cash is short on farm. So sustainability interventions need to make financial sense, bar none. It starts with our CEO, Brad Anderson. He's made comments publicly around the fact that if it's not financially viable on farm, it's not on the table. And that's important as those considerations for cash are taking place. There's also different ways to measure return on investment. And those measurements could take place in kind of a few different buckets. The first one, financial, the second one, is there some regulatory compliance? Is there some additional benefit from the intervention? Is there air quality benefits, water quality benefits? And those kind of benefits could be the benefits that keep you in business, especially in a state like California. And the third is, is there some additional benefits when it comes to interventions like enteric where there's increase in weight gain, increase in milk production, and so those efficiency benefits also move the needle quite a bit, but if it's not viable, it's not on the table. And I think that's important.

JACQUI FATKA (01:02:24):

I'm going to turn to Jeff Simmons, who's the CEO of Elanco Animal Health, and obviously a leader in the livestock industry working to provide producers and veterinarians and stakeholders throughout that chain, key products and services that can prevent and treat challenges. I love you. I've known you for a

lot of years and we've heard a little bit about how this marketplace started with maybe not the right goal, and we've also talked about the unique opportunities that Athian and brings, but the whole chain. Now, how does Elanco provide some innovative tools like feed additives to improve that sustainability footprint?

JEFF SIMMONS (01:03:07):

Thanks Jacqui. I've been to Washington a lot over the years, and we've talked about things from antibiotics to one health to many things. And I would just say I don't think there's ever been probably anything bigger in animal agriculture than what's here today. We are not years away, we're months away from you opened up and said it. I think the very first livestock carbon market. And I think you see an example here of a chain of a value chain within sets that will drive back profitability to farmers. You can't have sustainability without profitability. And to me, it also is a convergence of animal health, human health, and one health. And I think that's really important as I always kind of come back to some numbers that are important. The United Nations says 50% more growth of animal protein the next decade than this decade. So, we're not going to remove animals. We got to get consumers what they want. We got seven years to cool. Well, that means methane, not carbon. It's just so much more potent, and I think it's an opportunity. And look, we still have a nation back to the human health. I came from a human health company. 60% of the people aren't getting enough. We see this glip and all this new technology on the human side where diabetes is converging with obesity because it's a problem. We're probably a bigger solution to that, and that's why animal protein is the hottest product probably out there. So I think starting with some of those realities now, how is this going to happen? I do think there's some things over the next couple months that's going to catalyze a lot of change and I think there's players here. What Paul has done and has done now created an opportunity to actually create something that aggregates, certifies and monetizes carbon.

So, companies like Nestle can buy into it. Elanco sees, I've never seen a convergence of more innovation from innovators all over the world to go after enteric methane. Enteric methane could be a \$2 billion industry in our 35 billion industry of animal health of how do we reduce, how do we inhibit and how do we make it profitable for farmers? And our number one charge as a company is make sure dairy farmers and beef farmers are profitable around the world in doing this. So I always say there's three, four things. We're spending a lot of time on dairy farms. We've got some of the largest databases working with partners around the analytics, the dairy farm, the bar raises. This is great for dairy farmers, but it also is the water level is rising if you don't have that capability. The table stakes are rising for dairy farms and bee farms, but we have a database called Uplook that right now we're adding every week dozens of dairy farms that are making them capable.

And there's other tools too. Two is we now have a new regulatory barrier. It's not just we need the FDA and the FDA has really risen to the occasion to say we've got the first environmentally approved claim with beef. And we are, I think everybody knows, what I think people are excited about is 3NOP. This technology is now with the FDA, we're looking for an authorization next year. This can reduce methane

30 to 50%. This can do more than what maybe we've done in the last three decades and that could be in this marketplace in months, not years. And that catalyzes immediately to the dairy farms, as Michael earlier, this can move it, but we also need to stay, the integrity has to stay high, so we need that third party protocol approved and then that allows Paul's organization to start to offer carbon to people like Nestle. So this chain is coming together. Technologies are in the pipeline and it's created an innovation revolution from New Zealand to California on opportunities which we're excited as a company to do. So, we've got products that we're already using now, feed additives. We're looking at getting protocols to this new technology 3NOP that we're really excited about to bring to the market.

JACQUI FATKA (01:07:16):

When I open up a dual question to building on that, we started a discussion about sustainability. Sustainability has a bit of a buzzword to it. But it also is different, but it's driving the business decision. So I'm going to turn to Daniel and you, Jeff, each of you talk about how sustainability impacts your business decisions and what's driving your decisions when it comes to how do you effectively execute your sustainability goals.

DANIEL PEERLESS (01:07:46):

So, I'm very much upstream focused. I look towards the suppliers and the farms, so I'll talk about that rather than the overall Nestle strategy, which is much bigger than me, but how it's driving art, it is becoming as important as cost and climate, particularly carbon sustainability is very broad. It's hard to bundle that all into a single credit or opportunity or measurement. So I'll mostly be speaking about carbon right now, but we have very clear goals, targets that we have set and we are working very hard to meet those through any tools that are available without a carbon inset market. We spend a lot of time trying to find opportunities to connect to farmers who aren't connected to us directly. Otherwise they're in our supply chain, but I don't know who they are and talk to them. I talked to a lot of people like Darren looking for those opportunities.

And I think that a market for inset credits isn't mandatory, but I think it's on a case-by-case basis. But I think in terms of scaling this opportunity to connect individual farmers, and you said something where Athian is providing the credits. No, it's the farmers providing the credits through Athian. That's who we are as Nestle talking to. It's facilitated, scaled and accelerated through an Athian or another provider. Otherwise identifying the opportunities, speaking to farmers, verification that falls to me or a third party that we arrange on a case by case basis. So, I'm very excited about the ability to scale and facilitate these transactions.

JEFF SIMMONS (01:09:46):

My answer, Jacqui would be really in twofold. I think being a public company, ESG is essential. We have a lot of investors. I just came from New York and a major investor conference and that's a big for companies to actually invest in us. You hear about BlackRock and Wellington and others is get your

house in order. We put out an ESG report, we've got a leadership team, it's on my scorecard. And we've got goals as Nestle and other major companies do. You can't now step into this dairy market or beef market and do these things and even be an innovator without making sure every building you build or whatever is lead certified. And so understand it, know it, do it well, and I think it was mentioned on the last panel is this is a new era of transparency and integrity and the validation and the independence is absolutely essential to me.

So, I think that's important. We though are channeled also to say that's table stakes and we've got to do that. Well, where we're spending our energy now is leaning into scope three, leaning into value across this value chain to create a bigger impact. And I believe climate neutral farming will happen this decade. There are farms today that are close to that and I believe we can enable that and that's not only the right thing to do, but it also creates good economic value. I think there's a couple things though that I do think that the more can keep this regulated from an innovation standpoint, the more that the center of veterinary medicine, which I compliment, they're leaning in and looking at this through a lens of how do we do this? If we have regulated products, that's another way to take up the level of complexity and need and prevent greenwashing or claims from people that maybe are against that. I think that's important and I think all this independent verification is key. I do think the third we can talk about it later is the policy. I do think we're going to need incentives, private public government to get this flywheel moving. This thing is happening fast. We need that. So those are some of the things that I think are key.

JACQUI FATKA (01:11:52):

Darrin, I'm going to circle back to what you were talking about with economic sustainability and Jeff, Elanca's goal of finding those economic solutions for the farm. You have a lot of focus on how do you take this to the farmer level that they can also be profitable, but within the carbon marketplace, we also have to make sure that we can offset, not instead offset, but offset the cost of innovation, making sure that it works for them. Share how we make sure that within this carbon marketplace that we do have that return on investment needed to keep that flywheel spinning.

DARRIN MONTEIRO (01:12:25):

I think it starts with making sure there's abundant opportunity for good research and good research happens. There's some very credible universities around the country that are really founders of this research. And as they continue to look for new opportunities, whether it's, like Michael said in the last panel, stacking enteric opportunities, that research has got to be abundant. It's got to be accepted by everyone, the entire supply chain. It's got to be accepted by the companies like Nestle that are looking to buy that credit. It's got to be accepted and viable from the farmer perspective. And then I think a second pivotal part is you cannot punish early adopters. These early adopters, especially on farm, they're taking all the risk and they can't be punished for taking that risk if you're an early adopter on a digester.

Before the LCFS market was created, there were 12 digesters, roughly 11 or 12 digesters. There was no LCFS market. They did it because they saw the vision, the opportunity in the digesters and they failed. There's I think one still operational from that time period. It really took the LCFS market to stand up that product, create financial viability from the banking institutions, and as soon as that stood up, now you have 80 to almost a hundred in development in some stage of development. So you cannot punish early adopters. That's pivotal, especially from the farm side. And those early adopters need to be probably overcompensated a little bit because there's going to be some errors, there's going to be some improvements that need to be made and that's got to be factored in.

PAUL MYER (01:14:13):

That's a really good point.

JACQUI FATKA (01:14:16):

I want to pose this to all of you because you are part of a chain, right? There is a role for each of you to play and when all of you work together, there's a greater opportunity for success and wider adoption. What do you see as the short-term and long-term opportunities in this livestock carbon marketplace and how do you see these partnerships that you all have with each other but also others to help expand the success of the livestock carbon marketplace?

PAUL MYER (01:14:51):

If I might jump in. I think you have to keep in mind the long-term goal here, which is to move the needle on climate change and for animal agriculture to really make that contribution. It's an incredibly diverse set of producers that make up that entire value chain. There are literally hundreds of thousands of farmers that play a role in that supply chain. And so you've got to have solutions that work for them economically, but more importantly, that scale down to even the small producers. It's not enough to solve this problem with a large producers. And I think that's why it requires no single company is going to solve this problem on its own. It really requires each step in the value chain to play their part. And there's a role for the Nestle's of the world to help fund these through carbon insets. There's a role for government to play to stack the incentives and if you think about those early adopters that Darren alluded to on the dairy digester side, there's been this huge influx of capital into the dairy digester market that has been the result of that early investment and now you've got private enterprise coming in and actually funding those projects on an ongoing basis. It's a huge success story in the state of California that really could be duplicated throughout the country. If we can align those incentives throughout the supply chain.

JACQUI FATKA (01:16:14):

That's good. Anybody else want to jump in on that?

DARRIN MONTEIRO (01:16:17):

I'll just add that on the short term, I think that the supply chain has to accept that not everything is going to be buttoned up tight. Regulations are kind of always changing, they're always evolving. I think the initial set of regulations really set the parameters around petroleum and those rules don't necessarily correlate directly with agriculture. So as we try to change some of those rules and regulations, accept that it's not going to be perfect. And then in the long term, I think the entire supply chain needs to step up. And that includes consumers. If consumers want and expect a low carbon food supply, they need to pay for it. And that includes from the dairy farm to the consumer. Everyone has to be involved and everyone has to play a part.

JEFF SIMMONS (01:17:10):

I would say too, Jaqui, if for any major change to happen in history, the why has to be right. I think Daniel said it well, this is about everyone's going to be talking the next year about the one and a half degrees Celsius at COP and the Paris Accord is how do we keep that down? We can be in the top 10 list, if not the top five of an impact on that. That's why we want to do this. This is making a better world. So that's number one. That's I think the environmental health and agriculture has fought for a long time to say, we want to be relevant, we're relevant. When you're relevant, you got to be responsible as well. I think the second thing is, look, if you look at the consumer data, even though our protein continues to grow, this next generation under 30, the number one reason that they are not consuming is not nutrition. It's the impact on the environment. We see surveys 25 to 40% of consumers under 25 won't consume because of this. We've got to bring this along. So I think doing this in a responsible way, we're relevant why we're doing it, we're making a better world from a climate. We got to step up and right now we've been on defense. I think over the next year, especially American animal agriculture can go on offense.

JACQUI FATKA (01:18:23):

You want to add something in there too, Daniel?

DANIEL PEERLESS (01:18:24):

This is a short and long-term benefit, but we are finally talking about aligning the carbon activity with the primary production. The reason that activity has happened, which is in the cases that we're talking about, is milk production. And instead of disaggregating them sending one value stream, one direction and the other one another direction, we quantify, we accreditize, we sell the carbon, but it's going to the dairy customer and that's building the value or the stability of the farming activity over time. It makes the milk more valuable, a better product, a better product in terms of the carbon accounting instead of, it's not that they've changed anything necessarily, but they are getting full credit for it in

what's being sold as a material good as well as the carbon value. I think that I saw a question pop up about small farms and justice. This brings equity to the process, particularly for things like a feed additive, which can be deployed on a small or big farm in once approved extremely quick. And if the farmer gets the value that they need for that activity, they can continue. So, that's what I see.

JACQUI FATKA (01:19:51):

Well, we are starting to get some online questions to come in, but we do want to open it up to those here in the room as well. So yeah, raise your hand, stand up and somebody with a mic will come find you. Daniel talked about a little bit on how incenting benefits or supports those small family farms in particular and in EJ communities. Anyone else want to add to what Daniel said about how this can benefit small family farmers and not just large companies or large producers?

JEFF SIMMONS (01:20:19):

I would say on the innovation side, things that we will offer will be very size agnostic. I mean, there's not going to be any determination between, actually, I think it can actually create another income stream and actually make smaller farms even more sustainable with adoption. And sometimes the smaller farms can be some of the early adopters as well because they're more able to do that.

DARRIN MONTEIRO (01:20:39):

I'll add that some of the early interventions that happen, especially on the manure side, happen with large scale farms because it made financial sense. The infrastructure is expensive. The more cows you can spread that over, the more financial sense it made. Right now, interventions are really focused on some small farms and the enteric benefits can be attributed regardless of farm size. And I think that's an amazing aspect of the enteric side.

PAUL MYER (01:21:05):

And that's a big piece of what we're working to build for those small farms. We're essentially automating a lot of these processes that were once only available to the large players we're automating to the point that a very small farmer can make these interventions and be paid for it, be compensated for it exactly the same way a large producer is.

JACQUI FATKA (01:21:26):

All right. We'll take a question from here in the room.

AUDIENCE QUESTION (01:21:30):

Lars Dyrud, EarthOptics. This is to the point of maybe about folks under 30 being anti animal. And I think a lot of people don't know that we have fewer large-toothed animals on the continent than we did when Europeans first arrived. How do we go on offense and tell the full story, if we pull all these large

hoofed animals off of our country, we'd have probably a worst climate problem and significantly less biodiversity. And I think we're just not getting in front of that story. I'd love you guys' comment on that.

JEFF SIMMONS (01:21:58):

It's not an easy one, right? I mean I think that it's one, everything we've talked about in terms of transparency and really doing this right is really important because this could turn on us, and I think it was said earlier by Michael on the last panel. There's some agendas there's no need to get involved in because it's a bigger and a different agenda. We're about creating more protein, more affordable and more accessible to the global population, giving consumers what they want, animals what they need, and using less environment. I think that's agriculture's agenda, but I think there's just a couple stats that people need to realize. One protein continues to grow if you remove animals and did what maybe a Holland is doing or whatever. 86% of all that grazable land where animals are globally is unusable. They can't put any other, so we're creating protein out of unusable.

If you pull the animals off, you're going to have a bigger environmental challenge, which I think is what you're saying. So, I think it's going to take time; it's going to take education. But this new frontier of getting people to see what we can do with methane and what that can do to the environment, I think allows people to see, hey, this is some greater here if we do this. So I think we have a new platform of influence with environmental health and what we can do. It's got to be done and I think it's got to be done by the whole value chain over time.

AUDIENCE QUESTION (01:23:19):

There are ongoing international organizations doing negotiations around carbon pricing initiatives, especially at OECD. So, I was wondering what is your position around if it's a challenge or an opportunity for private markets for voluntary carbon markets, and if so, what will be your policy requests on those international negotiations?

DANIEL PEERLESS (01:23:43):

I don't really have a good answer for that yet because we haven't delved deeply into this yet. So I think some of those issues, not some of those possible issues or if there are issues we'll shake out once we really get into the price and the availability. For right now, I'm just excited that it's becoming an option.

PAUL MYER (01:24:07):

I think just to chime in, these carbon incenting marketplaces are not well developed yet, and we think it'll be at least 18 to 24 months until you have an effective marketplace like you do with traditional carbon offsets. So in the meantime, it's going to require I think an alignment between offtake partners and producers connecting all those dots and building out essentially bespoke contracts for those voluntary carbon credits in the early going. And to Daniel's point, it'll shake out as we get a lot more buyers and a lot more sellers in the marketplace and to become more accepted, the overarching goal for

us is to make sure that we have the same level of rigor for the insetting marketplaces that has been applied historically to carbon offset markets. And in some ways we're going well beyond what some of those traditional carbon markets have done. And part of it in animal agriculture is that the gas that we're looking to limit is methane. And methane has it's 80 times more powerful than carbon over a 20 year period. So it has an outsized impact on the climate. So if we can make an impact in the short term, it will really move the needle quickly and that's going to require I think, the entire industry to pull together to solve that problem.

JACQUI FATKA (01:25:27):

That's good. I want to go quick to an online question, and it's not up there right now, but it was just there on California, made some decisions this week on requiring the reporting of scope three emissions. We've heard a lot about the SEC's proposed rule on reporting of emissions and how that goes back to a farmer and whether they're held accountable. How do you see that impacting what you're doing throughout your role in the supply chain?

DARRIN MONTEIRO (01:25:58):

Well, I think that there's a little bit of murky water here and we'll work through that murky water and as it kind of alludes to one of the statements I made earlier and that's, look, things aren't going to be perfect right away and as long as everyone kind of accepts that we will get better at reporting, get better at validating some of those metrics that are used to kind of quantify what our emissions are, but it's not going to be perfect and we'll work through that. But as we do, I think it's really beneficial to kind of protect the farmer, the farm level, and at CDI, we'll aggregate we'll report, but we're going to do everything we can to protect the scrutiny on the farmer.

PAUL MYER (01:26:43):

And I think from our perspective, we think transparency is a good thing and ultimately it helps the credibility of our industry if we're full disclosure. So that's the basis upon which we've built our platform. It has to be transparent so that everybody can see where the real numbers are.

JEFF SIMMONS (01:27:04):

I would just say from a public company, we will of course do everything that's required and believe strongly in the transparency. This is evolving though we know so much more than we knew 12 months ago and we will again. So, to Darrin's point, we just need to be careful that we start mandating things that we still don't have full definition on. So, I think a lot of public company CEOs right now are saying, Hey, this ESG and SEC requirement, let's let it evolve. We'll do we'll absolutely do everything we have, but we're going to be in a whole different position in 12 months too. So we just need to be cognizant of that.

DANIEL PEERLESS (01:27:40):

And I can only speak with a limited perspective on the Nestle point of view, but we do already report our scope three emissions, how that translates, what sort of granularities necessary for California reporting. That's somebody else's responsibility. But I think I'm quite proud of the level of reporting that we already engage in and have for a number of years. And this is why, I mean among the reasons that we're engaged in these activities is we are bringing down our scope three, we're doing it through our farms and farmers and supply chains, and I think people deserve to know how and to what degree.

AUDIENCE QUESTION (01:28:28):

Hello, I'm Betty Resnick with the American Farm Bureau. There's been a lot of improvements on rural broadband issues over the past several years. We're still not quite there yet where a lot of rural Americans and farmers don't have access to quality internet. Paul, is that an issue you've run into as you build Athian as a cloud-based solution or anticipate?

PAUL MYER (01:28:47):

So, that's a good question and we are dependent on the on-farm data for us to function. And so the short answer is yes, we do have to deal with that, but we're building into platform the ability to do stored forward so that if they don't have access in real time, at a minimum they have access when they do get back to the office or at some point. So we can pull that data without problem.

AUDIENCE QUESTION (01:29:21):

Hi, Miguel Gonzalez, BCarbon. My question is, as part of the incident solutions, are your organizations looking at the emerging research on lower methane emitting dairy genetics? And are you guys involved in any commercial or research projects on that?

JEFF SIMMONS (01:29:37):

The answer is yes, and whether it's even us or it's other players. What I would say back to the, this has probably been one of the bigger innovation revolutions I've seen over the last 24 months from genetics to the data, the whole data area and the data collection, nutrition, animal health, there's mentioned about seaweed and other things and it's brought new capital. I think one of the things that animal agriculture struggled with is between land grant universities, outside capital and new models, it's really opened up a lot more interest in that. So there's funds being raised, there's a lot more interest. So I can go down through, there's a list I've seen at the last conference I was at, there was like 20 new areas. We spun out a company on microbiome because we felt like we weren't giving it the attention that it needed because we think the microbiome is going to be both on the mount gastric side and the Roman side. So, I think this is going to be a great opportunity for more innovation in startup companies, more economics globally.

DANIEL PEERLESS (01:30:41):

I'll say from the Nestle point of view, everything that is safe and effective and permitted is on the table. We have a robust r and d function, we have our own agricultural institute. All of these options and opportunities are being assessed because we've committed to net zero and we have to target every part of the emissions throughout the supply chain, the bulk of it being at the production level, the farming level for dairy, but it's not going to be possible to leave a viable tool off the table. We're also agnostic as to how the farms themselves achieve these reductions. So if we want the farmers and the suppliers to work together to choose what specifically happens on the farms to bring these reductions in, it'll be a whole lot easier than me trying to or Nestle trying to influence is to really just support the decision-making. Something that I also wanted to bring up is when we're talking genetics, we're talking breeding efficiency, not anything that one of these terms depending on the audience, we're not talking GMO or anything like that. So the council on dairy cattle breeding, other US organizations have been trying to identify markers of enteric and efficiency and other genetic markers. So that can be emphasized in the current cattle population.

DARRIN MONTEIRO (01:32:12):

I'll just add that CDI isn't involved in any research right now, but we are watching the research and it's important that research doesn't compromise productivity, doesn't compromise weight gain, doesn't compromise the business attributes that the current cattle have today. Additionally, genetic research could take two or three years for a cow to kind of really materialize some of that research. But I think there's going to be much more interventions that come within the next three years. They're going to be attributed to farms right away. And so over the next three years, as you're waiting for genetic research, some of those other interventions are going to happen right away.

AUDIENCE QUESTION (01:33:03):

Michael Dykes, international Dairy Foods Association, Daniel, on the inciting and meeting your commitments, to me, you're going to have to be able to verify what the carbon is. You're going to have to know what the value is. And to Darren's comments, you're going to have to make sure the farmers are getting paid if the carbon credit is flow with the milk, similar to what they would get paid elsewhere. So to me, that whole system is going to require payments back through to the farm and measurement and verification. Just curious, do you foresee this as Nestle as becoming a condition of sale? If you're going to buy milk from someone, the carbon credits have to flow through with the milk?

DANIEL PEERLESS (01:33:43):

Not a strict condition sale, but I would say it's a condition for the credit that the milk is touching our supply chain. Of course, we don't have a segregated supply chain with most or any of our suppliers that I know of, but it's not an inset if the farm or the activity is entirely unrelated to our sourcing. And so, working with Athian or other providers, we can share to the degree possible or through our suppliers

that include California dairies, what farms and activities are relevant are related to Nestle sourcing activity. So that's what makes it an inset. If I bought from a dairy farm that has nothing to do with us, then it's an offset, even though Nestle is the biggest dairy customer in the world. And so that's the most important thing and we're still working through that process. I think a lot of it probably early on is going to be hands-on. I will or somebody will verify that that is a Nestle affiliated farm in a way.

PAUL MYER (01:34:50):

I can attest to that. I mean, you just summarized our value proposition perfectly. Our job is to be that third party to facilitate the flow of capital and to make sure that it sits in the supply shed so that it can be counted as an incent.

JACQUI FATKA (01:35:04):

Real quick question before I do our final, anyone want to talk about, one of the online questions said the role of product labeling, which actually would include an emissions intensity score. Jeff, you talked about how more people want to know is that part of the future?

JEFF SIMMONS (01:35:20):

Probably Nestle ought to speak more to the labeling, but I would say we've learned as an industry labeling can cause some confusion. I think our number one job is to take a value chain like this and optimize it and make it work, make sure the producer captures the value, that's what's going to be sustainable and make sure we have insets not offsets. And all that starts to set up a system. How we start to differentiate product and label product. Once you start, you start to create complexity. And I would say I'll leave that to the consumer good companies, but for us, I think it's to do everything we just said first and do that well, and then it becomes truly sustainable.

DANIEL PEERLESS (01:36:02):

I've been very careful to say that I am upstream focused, farm focused. Nestle is a big company with many brands and units and some have looked towards on packaged claims and some have not. And there's a mixture of regulatory requirements around the world. As a global corporate policy, I will not speak to labeling. I would love to see the consumer more engaged, but our targets are our targets and we are working towards them regardless of that engagement. And so I think right now I can't think of a product that has a climate or score that we sell on it, but that's not slowing us down. If it comes to the point where it becomes a differentiator, that would be fine, but I also worry about what we see as absence claims. This product has a label that one doesn't, so this one is better and that can limits or provide challenges for the overall dairy industry, which I really would not want to see.

JACQUI FATKA (01:37:14):

All right. Well, five words or less. What do you want everybody to leave this room remembering from your discussion today? We'll start right here, five words.

DARRIN MONTEIRO (01:37:25):

I might use six, but dairy and agriculture, they are the solution.

PAUL MYER (01:37:30):

Carbon insetting is real and it's here today.

JEFF SIMMONS (01:37:33):

This is the first livestock carbon market creation right here for US livestock.

DANIEL PEERLESS (01:37:41):

I want to keep it simple. I want to say that intrinsically offsetting is not bad, but this is the evolution that we need to achieve real corporate progress.

JACQUI FATKA (01:37:52):

Very good. All right, well let's give them a round of applause.

LESLEY JANTARASAMI (01:39:25):

Alright, I think we're getting set now. Thank you for your patience. Thanks again everyone. Welcome to the last panel. I'm Lesley Jantarasami again from the Bipartisan Policy Center. Thrilled to have these three speakers today. Such a deep knowledge represented here of the ag sector, of the way USDA works of the way, maybe they'd like USDA to work. And then of the ways in which federal government can best support climate and sustainability solutions. And as a reminder, you can find their full bios on our website. But here next to me is Robert Bonnie, Under Secretary of Agriculture for Farm Production and Conservation, also known as FPAC at the USDA. Next to him, Chuck Conner, former Deputy Secretary of Agriculture and Acting Secretary under President George Bush. He's the current president and CEO of the National Council of Farmer Cooperatives. Dan Glickman here at the end, former Secretary of Agriculture under President Bill Clinton, and a member of BPC's Farm and Forest Carbon Solutions Task Force.

So again, just excited today to be talking about policy solutions here. We've heard a lot throughout the first two panels this morning of evolution things, opportunities that are happening in the voluntary carbon market. And now like to hear from our panelists around where there is a role now for policy for additional programmatic work to incent more activity around these questions of sustainability and reducing enteric methane emissions specifically.

So, Robert, going to start off with you since you're currently there at USDA in your role as Undersecretary for FPAC. You've talked in the past about the need for USDA to build the producer led, a voluntary incentive-based approach to encourage climate smart ag and forestry. So can you just sketch out for everyone at a high level, what has this approach looked like for you and USDA to date and what opportunities have there been on the livestock and dairy side?

HON. ROBERT BONNIE (01:41:39):

Great to be here. So, one place I like to start is we're often used to fighting about environmental issues or there being conflict and clashes. Interesting thing about climate is there's a lot of alignment between things that are actually good for the climate. Soil health, taking methane and turning it into energy on the forest side, reducing forest fires and managing forests in a way that produces wood. There are all these things that are good from a climate standpoint and they're good from a production standpoint or an economic standpoint for producers. And so as you think about policy, that should inform all we do. We also know that there's a lot of skepticism in agriculture about what environmental policy looks like, experience with the Endangered Species Act or other things. And so, we know we've got skeptics out there, but at the same time there's a tremendous amount of interest in agriculture about ways that they can integrate conservation stewardship into their operations and create value there. And so, our interest at USDA is an approach that's about voluntary incentive-based efforts. It's about collaboration; it's about putting producers in charge to make their own decisions and trying to find ways to reward them. Some of that can be through programs, through the Inflation Reduction Act and resources we have there in our conservation programs where we can share the costs, provide technical assistance for all kinds of climate smart practices. And some of it is through market mechanisms. And how can USDA play a role in that? We have a flagship effort called the Partnerships for Climate Smart Commodities, which is about creating value by scaling up climate smart practices, measuring the outcomes and by creating markets, whether it's carbon markets, markets for climate smart soybeans, climate smart cotton and climate smart wood or folks, companies that are interested in green, their supply chain. And importantly, how do we make sure that we've got the systems in place that the producer, that the farmer, rancher, forest owner is able to capture some of those benefits. So that cuts across everything we do. And we think there are enormous opportunities across all of agriculture in the livestock sector. And I think part of it is things that we know how to do, but there's also going to be a lot of technological innovation. And one of our challenges is how do we make sure we're ready for that? I think we're looking at ways that we can be as flexible as we can to allow for that type of innovation.

LESLEY JANTARASAMI (01:44:11):

Sounds good. We're going to come back to some of that. Chuck, so National Council of Farmer Cooperatives has four core values, farmer ownership and control and production and distribution, continued economic viability for farmers and ranchers, natural resources, stewardship and vibrant rural communities. So how are you seeing these emerging opportunities in the voluntary carbon market playing to some of these? Are they ticking the boxes for you or what more would you like to see?

CHUCK CONNER (01:44:37):

Well, I think we're on the right path and we're checking those boxes I think, but we're not there yet. And I think that's maybe the important point I want to stress here. There's a lot of work to be done. We're able to have discussions at the farm level with producers that just simply were probably not obtainable or possible or smart five, 10 years ago. Robert can go out at a Benton County, Indiana Farm Bureau meeting and have these conversations and that's a remarkable thing without a bulletproof vest, without a bulletproof vest. And so that suggests that we're ticking a lot of these boxes in terms of incentives, economics, rural communities, all those kinds of things. I think it's coming around that way. We're not completely there yet. And I know in a little bit we'll likely discuss the notion of we've really got to reach out there in order to have good public policy.

This cannot be viewed as an elite program where we've got this group of producers over here who have partnered with some big conglomerate and are doing all these wonderful things that's just exclusivity that does not sell in the public policy arena. This has got to be something good for the farmer with a hundred cows versus the farmer with 10,000 cows just to put a finer point on at this small acreage guy versus the large acres. And I think we've still got some work to do in that regard again, but making great progress in putting those checks in place.

LESLEY JANTARASAMI (01:46:10):

Alright, Secretary Glickman, you led USDA at a time of just increasing interest in sustainability broadly, but now we're kind of shifting more towards that carbon and climate focus. And so where do you think the industry needs to go? How do you think USDA needs to support these efforts?

DAN R. GLICKMAN (01:46:27):

Well, first of all, thanks for having me. Conflict of interest, I was a senior fellow here, still am I hope. Maybe, we'll see. But anyway, thanks. I was with USDA before anybody can remember the history of this country.

But Robert, you're doing a fine job and dealing with very complicated issues. As is my friend here, Chuck Conner, we continue to work together. I just make a couple of comments. They're not exactly on point, but I've been on the board of the Chicago Mercantile Exchange for almost 20 years, and this is the prime futures exchange for America. So every agriculture commodity is traded on that exchange, plus dozens of non-ag agriculture commodities. And I talked to our folks who are responsible for carbon credits and some of the softer ag contracts like weather and water and other kinds of things.

And they're pushing as hard as they can to try to develop a futures contract for carbon, which if you look back historically, our cash contracts for all these commodities are basically dependent upon futures contracts that people have confidence in. And it goes back to your point, if people don't have confidence or trust their markets, then they're not going to really move in some of these more, not exotic areas, but new areas where it takes a lot of innovation. So the folks tell me that they're working as hard as they can, but right now there is just not a huge amount of interest in this particular subject. And it strikes me

that this is one area where USDA, commodity Futures Trading Commission and others can work together to see if we can develop a market, a market with standards that people can understand so they can buy and sell these things and have meaning and validity to it. And I know that CFTC is looking at this issue, but this is not like trading number two corn.

This is more equivalent to trading financial futures or trading interest rates. And it's tough. It's taken years and years to develop these markets. So as I hear folks talking about carbon credits, I think that we do have a vehicle, an avenue for this. It's called our futures markets. And to date, it's not been able to satisfy that need. But with the work Robert and others are doing at setting up standardized practices and giving people confidence that some of these practices have certain metrics and meaning and clarity, then in fact we can develop the carbon market much better than we have. But to date and generally in production agriculture, I don't think that there is the recognition that there is a predictable standard that you can buy and trade carbon credits, the meaning is not really there. And I think that that is something that we really need to develop.

LESLEY JANTARASAMI (01:49:27):

You mentioned then the connection here with commodities. And Robert, you mentioned USDA's recent program around developing climate smart commodities. Can you maybe for our audience go a little bit more into the background of that, how it's working and then how it really is investing in some of that monitoring and metrics development that Dan was just talking about?

HON. ROBERT BONNIE (01:49:47):

The idea here was to create actually a commodity program. A commodity program is about producing commodities using climate smart practices and recognizing that yes, carbon markets are going to be an important thing going forward, not going to be the only thing. Metrics that the secretary talks about are also going to, we're going to need those same metrics as we think about greening supply chains or someone wanting to market a climate smart commodity. So the idea here was to create some flexible resources that would allow producers, groups of producers to aggregate themselves to deploy climate smart practices at scale, to measure, monitor, verify those to make sure that everybody gets to play this issue of small producers, medium-sized producers, historically underserved producers. Really, really important built into everything we do in the partnerships program. And then to look for opportunities to create some new markets.

Some folks, again, may want to trade into carbon markets. Others are interested in telling a better story about climate smart cotton, for example, or other things. And so we're about a year since we've announced 141 projects, we are basically either signed contracts or completed negotiations about to sign contracts on about a hundred of those, committing about 2.9 billion of the 3.1 billion in total. Lots of interest there. And part of the idea here was to provide dollars to seed innovation to allow creativity out in the field. We purposely didn't go down the roads of standards and those types of things to begin with because we thought, Hey, the thing we can do right now is actually incentivized this type of action

at scale to see if we can do it. But the questions the secretary asks are right on target. And we are, as part of these projects, hope to do a lot of learning around issues related to standards and markets and other things, and would expect it as we start to roll out the Growing Climate Solutions Act and the SUSTAINS Act and other things, that there're going to be opportunities to engage in a much broader conversation in a public one and a transparent one around exactly the types of issues that the Secretary raises.

LESLEY JANTARASAMI (01:52:10):

Absolutely. And Chuck, you already mentioned this, but this need to get more folks involved. How can government and industry ensure wider participation in these types of programs and the opportunities potentially available to them in the voluntary carbon market?

CHUCK CONNER (01:52:27):

I think we're generally on the right track, Lesley, in this regard. Although again, noting that there's a long way to go. All of us are talking about voluntary, we're talking about incentive-based, and these are all important considerations for what I would call small and medium sized farmers. When you're talking about pretty heavy handed government regulation, I mean, you have to acknowledge whether it's this space or any other of that kind that really does kind of favor the larger producer that has resources, has consultants, lawyers, a team of risk managers, all those kinds of people that enable them to navigate this, that small and medium sized farmers just simply don't have. And so I think that is a key part of that, the incentive-based, but I go back to what Dan and Robert have both said as well is for those small and medium sized farmers, they're probably the most skeptical at this stage in the process.

And we really need to work and educate and partner with them to bring them along on this. And it's not just about the money, it's about the information and the sharing of data and trust in that partnership. And that's why within the IRA, I think that the dollars for technical assistance and the like are very, very important because these farmers know they're local. In our CSS person, generally speaking, there's a lot of trust there. And so when that person comes and says, I want to partner with you, there's not a sense that there's a threat to those producers and that is just so critical to getting their buy-in going forward. And again, without their buy-in, we're going to have public policy problems in this space because no one wants to be on the wrong side of small and medium sized farmers out there. I don't care what your political affiliation is, that just is not going to happen.

LESLEY JANTARASAMI (01:54:27):

Do you have thoughts on that, Dan?

DAN R. GLICKMAN (01:54:29):

I think Chuck's entirely right. Because the politics of this favors small and medium-sized farmers in terms of the Congress and many in the media and the intellectual community. But at the same time, some of

the larger companies are doing some really important work on feed additives and other nutrient management issues that we need to encourage, and we need to make sure our regulatory system is up to date and modern to be able to approve those assuming they're safe and effective and everything else. But I do think it goes, two things are positive here. Number one is that Robert and his team and the administration with the legislation that's passed, we now have kind of let a thousand flowers bloom. That is really a positive thing. You're given options to producers that they never had before, and you're testing this with best practices.

And so, assuming that you've got the ability to measure and do all the other things we talked about, we've never had that before. So that's really a remarkable thing. Second of all, agriculture is a major contributor to carbon emissions and methane emissions. And the problem, it's not the only one. Of course, sometimes it gets too much of the blame, but we've got a big role to play in the solution, and you've given people an opportunity to look at this from a voluntary perspective. I think that's created an atmosphere out there that's much more positive than was before. Third of all, I think is Chuck mentioned, unfortunately we're caught in this trap in America now, where if a Republican says this, then a Democrat says this and it doesn't matter what the facts are or the substances. And so this debate is kind of indirectly tied to all of that in terms of how people perceive government and carbon and whether somebody's trying to do something to them. And you've gone down the voluntary route, which I think is really positive. And I think from that perspective, you have created an environment out there which is much more positive than certainly back in the old days when I was at USDA.

LESLEY JANTARASAMI (01:56:35):

Robert, in terms of those options then that USDA is providing for choices of different types of support and programs to get involved with EQIP and other types of USDA and NRCS conservation programs were mentioned earlier this morning as one of those options that folks are thinking through how to get support. So can you say a little bit more about how those types of programs help to reduce enteric methane?

HON. ROBERT BONNIE (01:57:01):

So, we've got obviously substantial new resources through the Inflation Reduction Act for Environmental Quality Incentive program, EQIP the Conservation Stewardship program, our regional conservation partnership program, as well as our conservation easement program. And we're adding additional staff. But even with that, we're going to have to streamline those programs to make them work better for producers. Critically important. So you'll see a lot of work from us on streamlining and you'll see a lot of work on partnerships. The type of resources that Chuck talked about, technical assistance, the ability to build partnerships with producers and others is critically important. As we think about the livestock sector. There's obviously a lot we can do and have been true in livestock is true everywhere. We've been doing climate smart for a long time. We just ain't called it climate smart. Improve manure management better, better nutrient management, soil health, all these things we've been doing for a long time.

A lot of dairy producers, livestock producers, better range management have been doing this stuff for a long time. We'll continue to do that double down on some of those things. But there's also new innovations you expect to see feed additives in others on the market in the not too distant future. USDA needs to be ready for that. We need to retool our conservation programs so they can support those efforts and support that type of innovation when it comes forward. So that's really critical. We've got a team of folks that are actually looking at our conservation practices on the climate smart side, updating them, making sure that we've got the suite of practices we need to allow for that type of innovation out in the field.

One more thing that I think is sort of an addition to what Chuck was saying about some of the barriers for small and medium sized producers. One of the barriers to carbon markets is I got to pay to measure and monitor and I take carbon samples on every acre. There's a lot of innovation happening there. Technology and a lot of partnered as part of our partnership. There's some really cool innovation as part of those projects that we'll get to test, but the ability to improve the accuracy of measurement while dramatically reducing the cost is really, really important here. This needs to be easy. It needs to be additive to producers. They need to be able to integrate it into their bottom lines. And if you're a small and medium sized producer, you can't spend hours and hours trying to figure out how you're going to take advantage of these markets. So we have to make it easy at the same time that we all know there's some skepticism in the public about agriculture's role here. Well, agricultural can they really do this? And so those issues related to both transparency improves science, but also making sure we keep the costs down are really important.

LESLEY JANTARASAMI (01:59:41):

Absolutely. And Chuck, you mentioned how USDA has just an important role in the technical assistance and providing that connection down to the farm level, but what else are you hearing from your members and the farmers you work with about some of the opportunities for doing these innovative practices to get engaged in these types of activities?

CHUCK CONNER (02:00:00):

Well, Robert has talked about the partnerships that exist out there. And obviously within my world of farmer owned co-ops, we provide a lot of the products that producers need to produce a crop to feed an animal, these sorts of things out there. And one of the things we're hoping going forward is we've talked about trust. We've talked about NRCS being kind of at the forefront of establishing that trust for all producers of any size. And we feel like there's a broader role for the ag community, including co-ops to play in that and providing that technical assistance. To put a fine point on it, within my world, we've got some of the finest, most highly trained agronomists in the world in our employee, and they are anxious to play a role in this and advising producers on best practices, and they know what they're talking about and producers trust them. And so our hope going forward, and I know Robert shares this point of view, is that there is a way of incorporating that more into that process of being a technical service provider. Again, the trust factor among all farmers is very, very high for many of these folks. And

it just kind of reflects that public but also private partnership that I think is going to be necessary in order for us to really achieve the objectives and go down the sort of challenge path that Dan has laid out.

LESLEY JANTARASAMI (02:01:26):

Yeah, absolutely. I'd be interested in all of your thoughts on this connection between some of the more traditional ways of thinking about agronomists may be thinking about how conservation practices have been implemented in the past. Is there a gap then in how they think about how does this apply for carbon purposes, for climate purposes? Do we need to do more to help on the training side?

CHUCK CONNER (02:01:50):

I would say generally yes on this. I mean, again, this is still relatively new space, even though I believe the previous panel had talked about so much of what we have done in the past. It was done for good water quality or something. And on top of that, it happens to be good for the climate as well. And so recognizing that, I think in the past asked, again, you had to have a flak jacket oftentimes to go in and have these conversations at a farm meeting, at a co-op annual meeting. That is not the case today necessarily. And so I think there is a much more open role for these highly trained agronomist who know carbon, know the interaction with soil, no soil health, all those kinds of equations to really play a more substantial role going forward and not only seeking the additional education they need, but interacting within our CSS again in a partnership. And that's why it's so important that NRCS be at the lead of this because they are going to have access to that information, to that science that is available out there. And as each panel has talked about evolving very, very rapidly, it's hard to keep up. In fact, it's evolving so fast. And so that partnership of sharing information with those trained people is going to be critical in that.

DAN R. GLICKMAN (02:03:21):

I just add USDA has probably the finest research arm in the entire federal government. I mean, you just look historically at what they've done over the years. And I think it is important that USDA's its own internal research facilities, its relationships with the land grants and non-land grants as well, the science community, and with groups like Secretary Vilsack appointed me on the board of the foundation for Food and Agriculture research, which was trying to be a little bit outside the box. How can we look at all these problems a bit differently so we don't do necessarily the same research every year after year. All these things give us a great opportunity because technology is changing so rapidly. You were talking about measurement and I'm thinking, okay, so how is AI involved in this? Well, I'm sure it's very involved if we can keep it on the level and keep it honest and true and everything else.

But we're going to be able to measure data in the future. We've never been able to measure it before, and we're going to be able to determine the efficacy of crop inputs like we've never been able to determine before in the effectiveness of feed additives and all these kinds of things. So the technology

curve is going to go up like this, and that's a great opportunity and that's where Robert, his team are, got to figure out how to marry that with the practices on the ground and also to be able to share what good things. I've always felt that what the government does a great job with research and administering programs, USDA is probably the best in the government. What the government often doesn't do, and this is not USDA, is to share best practices. If Farmer X in New Mexico or Washington State is having great luck with a certain type of practice, how does the rest of the world know about this? And of course, that's USDA's responsibility to do that. I think that today with modern communication, that allows us to make advances much faster than we could make it. Certainly, in the prehistoric times when I served at USDA.

HON. ROBERT BONNIE (02:05:23):

Well, I think this issue of USDA's ability to integrate with the market, with producers, with the co-ops, to be able to, if we're going to be successful, we need your agronomists selling our programs, we need to be working off the same data standards, all that. And I think that's a challenge of if we're going to get this right, we're really going to scale up one of our big challenges. How do we get that integration? And this should be something that just becomes normal operating practice for folks in agriculture and forestry just is part of what they do. And how do we make that measurement easier? How do we make the technology easier? How do we make the technical assistance, financial assistance just easy? And I think that ultimately to be successful, that we have to achieve that level of integration.

DAN R. GLICKMAN (02:06:14):

And also, if I might, how to make it compatible with other environmental issues like water resources, water availability, aquifer management, irrigation, feeding animals, water, the pests and diseases which have the ability in the modern world with the new theories of zoonotics to transfer instantaneously around the world. And so farmers and you all have to worry about a million different things and pest management is one of the big things they have to worry about. And so how you're able to do that at the same time, get folks to have conservation practices that reduces carbon as well. It's complicated for a lot of producers.

LESLEY JANTARASAMI (02:06:51):

Absolutely. And you were bringing up a great point about this perception perhaps that rightly or wrongly, that climate is somehow outside of conservation, that it's something different that we're tacking on the end that that's going to provide some additional opportunities, but also challenges and implementation of new practices to address climate. So how are you all thinking, maybe Chuck, how are your members and you thinking about this perceived tension between traditional kind of conservation and those outcomes with the climate outcomes?

CHUCK CONNER (02:07:27):

Well, that's a great question, Lesley. And I will just say I don't think, I hope we're not put in a position where we have to choose and there is a lot of overlap there, but I hope we have always tackled our conservation issues in agriculture with a public private partnership, probably more so than any other sector USDA, technical assistance, financial incentives, working with the producer at the local level. That's been how we've tackled soil erosion, wetlands conservation. I mean it's a pretty proven model and so I hope that there's recognition as one who is probably pretty tight-fisted with government dollars. But in this space, I hope there's recognition that we need enough resources that we don't have to make the really, really hard choices that we can have our cake if you will, and eat it too, in terms of those important proven programs in the past that are sort of taking care of these issues. But then the challenge of today, which the number one challenge that I think everyone would identify would be climate at this point. So hopefully we're not going to have to make that choice because available resources I r A proved that if we make the case, we can through government, get some pretty generous funding going forward. We're going to need to continue that.

LESLEY JANTARASAMI (02:08:58):

And Robert, how is USDA thinking about that balance between all the shifting priorities and also, we've talked about the different suite of programs that U S A offers all the way from more the bench research that feeds into climate practices and then down to the implementation at the farm scale?

HON. ROBERT BONNIE (02:09:19):

All these other issues that we dealt with didn't go away when we all started focusing on climate. The good news here is that I think about, we're sitting in the Chesapeake Bay watershed, it's been a bunch of work done in the Chesapeake Bay for a long time. It's about nutrient management, soil health, improve manure management. There are all these things we've been doing to protect the bay. Guess what really good for the climate as well. There's a lot of alignment. I talked about the alignment with production and climate. There's a lot of alignment between a conservation climate and you start thinking about issues related to resilience. And you look at farmers that go through drought and who does better? Folks that are using soil health practices, other practices, those systems tend to be more drought resilient. So I'm not sure we have to make those choices.

I think there's a lot of alignment there. On the other hand, climate is driving a lot of the conversation about these issues right now, and a lot of it is focused on mitigation, but a lot as well on resilience. And we're doing some really cool work right now in the west around migration corridors and working with ranchers, keep ranchers in business to protect these big migration corridors. There are climate issues there that are about how do we make sure those ranches are resilient? Those folks continue to make money in the face of more extreme weather events. And so, I think there's opportunities for us to integrate what we're doing on conservation and what we're doing on climate and the IRA. There's a lot of resources for climate. It's going to be really good from a conservation standpoint as well.

LESLEY JANTARASAMI (02:11:01):

Absolutely. So Secretary Glickman, if you're thinking through how does the US approach its climate goals, how do individual farmers in the sectors that have individual climate goals, do you see this carbon market piece as something that is going to sort of unlock financing and new opportunities for them to be able to make more progress towards those goals?

DAN R. GLICKMAN (02:11:27):

I hope so. We're not there now. I think the focus is where it needs to be is on the ground helping producers design practices work with the government and with the private sector on ways to grow crops and feed animals in a more sustainable way, producing less carbon. And that's an R and D focus, that's a technical practices on the ground, technical services that the USDA is doing. So the carbon market issue trading this commodity, this thing in the atmosphere is just a lot more complicated because it's not a traditional item that we have historically traded either I mentioned through the futures markets or even through the cash markets. I suspect we'll get there as we get our practices more and more focused. I would say this though, I compliment Secretary Vilsack. And Robert, sometimes I'm reminded Napoleon said war is too important to be left to the generals.

And sometimes I think these issues are too important just to be left to people in agriculture. A lot of the work that's being done here is just profoundly important to all Americans. And so one of our challenges is how we message success stories out there so that the average John Q Public know this is important to their lives. Now it's got to be important to agriculture. If it's not profitable and if it's not common sense, nobody's going to do it in the first place. But beyond that, we've got to figure out what we can do to let the folks know that we're trying our best to make the world better, the water cleaner in the air safer.

LESLEY JANTARASAMI (02:13:11):

Absolutely. Chuck, so 2030 methane goals, greenhouse gas reduction goals. What do you think congress, the administration, others need to be doing in the near term, so in the next year to support really making progress on these?

DAN R. GLICKMAN (02:13:25):

Chuck's going to give us a prediction on the Farm Bill exactly when it's going to pass.

LESLEY JANTARASAMI (02:13:30):

Implied in that question, yeah.

CHUCK CONNER (02:13:32):

I'll probably meet more accurate on her question than her question. Did. I think there are some short-term efforts out there that are substantial. I would say we heard about them on the last panel that was here. I mean this feed additive question, I appreciate the positive spin, but there's a frustrating part of this as well in that we're behind the world in terms of approving these products in an agricultural society

in America that is considered the most innovative and technologically advanced. And there's just a lot of great stuff out there. And not to throw cold water on anything, but I think, I'm not sure it's on just a perfect glide path towards happening here anytime soon. I mean, and again, in this public private partnership, there has just got to be an enormous pressure that really, I hate to say this, but it starts from the president on down of demanding priority action on getting these products approved and in the hands of, I mean, and I'm not one that I can certify that this particular product reduces methane, this percent, that's not my stick. But the point is they are highly successful and why in the world are we not using these products today? And I think I've been in government, I've seen the wheels of government turn as these have and in this area they are turning far too slowly. And I don't think it's on a path that we would find acceptable or the American public could find acceptable knowing the kind of progress that could be made literally tomorrow.

LESLEY JANTARASAMI (02:15:26):

Okay. Call to action there. How about you, Robert? What would you like to see in the next year or so?

HON. ROBERT BONNIE (02:15:31):

I think part of our problem is this true across a lot of things in climate is that we design these systems for something for different purposes. Agreed. And all of a sudden we find, oh, whether it's feed additives, yes, critically important, critically important that we move deliberately. I think good things happening at FDA, as I alluded to earlier, USDA thinking internally about let's make sure we're ready for that. Let's make sure we're ready to help producers scale those new products as they come along. But there is so much innovation and you think about some of the new products available, seed additive, seed coatings, some of the technology there is really, really interesting. Again, we've got to be ready and we've got to be able to scale that really quickly and we have to think about how do we design our processes for things that take into account the urgency and take into account some new issues that they weren't designed for.

DAN R. GLICKMAN (02:16:38):

And I would just add, there's been a democratization of entrepreneurship in this country over the last decade. It's not just coming from the big enterprises, it's now much more diversified because science is easily transferable and social media and modern communications have made these things so that an awful lot of people are in this field, in this world. You look at venture capital now and how many would've thought 20 or 30 years ago agriculture would be a big part of venture capital? It is. Now that's great news. As long as the regulatory system is compatible and as the political system is there to help in the process, and I know what especially Chuck talked about, where sometimes in government one foot's on the brake and one foot's on the accelerator at all time and you do your best under the circumstances in our system of government, that's probably always going to be the way it is.

And what we have to do is try to move that foot back as best as we possibly can. I would have to say that in my experience, there's been no administration that's been more aggressive at moving the ball forward on these issues than this administration. And part of it's you got a lot of money now. I mean, listen, I could drool with the kind of money that you have, but you also are doing your best to spend it wisely and trying to use it in good judgment, particularly in an era where the politics is not necessarily less toxic today than it was several years ago.

LESLEY JANTARASAMI (02:18:08):

Well, we are now in the audience question portion, but I see a lot of hands here. I am going to jump though first to the online audience who have been feeding me things throughout this. There are a couple questions for you, Robert, that came up around the commodities and climate smart commodities program. How is it tracking the enteric methane projects and how is it tracking the adaptation resilience type projects? How can we get more information?

HON. ROBERT BONNIE (02:18:34):

I went to visit a project at the University of Texas, A and M Kingsville where they're trying to breed a better cow to deal with enteric methane. So there are projects that are focused on enteric methane, but obviously the availability of feed additives are going to be really, really important there. Very confident that we can add those opportunities on to the projects when they come on. We are tracking a lot of data from the projects, all the partnerships projects. And if you talk to some of the folks that have those projects, they might think, oh God, they're tracking a lot of data. We're being very sensitive about privacy concerns related to that data. Critical privacy is critically important to everybody in agriculture, but we do think to get the lessons learned on what we're doing, it's critically important that we be as transparent as possible. So you'll see us posting data about each of the projects and you'll see as we get data that we'll be sharing that transparently as well. I'm not sure we're taking a lot of data on kind of the resilience side of things, but I do think we're going to try and do as much learning from these projects as we can.

AUDIENCE QUESTION (02:19:53):

Good morning. Devin Mogler with Green Plains. Appreciate all the comments on what you're doing with the IRA funds. I was hoping you could expound under Secretary Bonnie on the IRA tax provisions, specifically sustainable aviation fuel in the 45 Z clean fuel production credit. Given that 40% of our corn gets turned into ethanol, the majority of our soybeans are crushed for biodiesel, renewable diesel, or sustainable aviation fuel. Is there a way to get treasury to use the right lifecycle assessment to allow for on-farm practices to be adopted on a broad scale? Thank you.

HON. ROBERT BONNIE (02:20:19):

Great question. We are highly engaged on this. As you probably heard from Secretary of Vilsack yesterday, there's a really good interagency working group going on right now. As I've told people both internally and externally, USDA is not afraid of the math on this. We think if we get the math right that agriculture is going to be able to us agriculture is going to be able to step up in ways that significantly improve the sustainability of what we're doing on the ground and lead to low carbon aviation fuel. So we're very confident in that, cautiously optimistic about the ability of the administration to get to a place where we can, US agricultural will be able to participate fully. So lots of engagement on think it's important things. It ties to all what we're talking about here because it's going to create a lot of value for folks in agriculture and ultimately at the end of the day, that's going to help drive climate smart practices more broadly.

AUDIENCE QUESTION (02:21:18):

Hi, Amanda Bushell with the Context Network. Arguably one of the USDA's strongest tools to communicate with consumers is USDA organic, but a lot of the technologies we've talked about today are not organic. So, I'm curious if there's any will internally to revisit what organic means so that it can better reflect carbon and climate smart advancement. And good luck. Thank you.

HON. ROBERT BONNIE (02:21:44):

We're not thinking about revisiting the organic label for a lot of issues that I think all of you probably are well aware of. There is a broader question. What can USDA do to help producers be able to capture that value from undertaking climate smart practices? On the organic side, there's a label. Do we need a climate smart label? I'm not sure we're at that place yet. And frankly it would be really complicated because livestock, forestry crop, different area different. It's complicated. There may be some things that USDA can do though to standardize some things in the market. And as we roll out the Growing Climate Act, part of that is going to have us look at the existing protocols. If you look at the suite of protocols out there right now for agriculture and forestry and the climate game, you'd probably say some of them are maybe a little bit too weak and some of them are maybe a little bit too costly and you sort of need to cut the bottom and top off the distribution.

And the question is, are there things USDA could do to help standardize the market? And I think those are places we need to look at. It's really important that we have that conversation in a public way with folks in agriculture to figure out what works, what are it's, there's a research component to it. There may be a standardization component to it. And I think as we move forward harvesting the lessons from the partnerships program from some of the IRA dollars, we want to have a broader conversation about what can we do there. It's probably short of a label, but what can we do there to help both consumers have more confidence and to help farmers know what the rules of the game are so they can capture that value.

AUDIENCE QUESTION (02:23:30):

Lars Dyrud, earth optics. Follow up on the fuel question. I think the IRA law requires a model for fuels that doesn't allow you to take soil carbon into account. Is there any efforts to take a look at being able to add that back in? So the benefits, or actually if it goes the wrong way, can be included in carbon intensity scores for fuels?

HON. ROBERT BONNIE (02:23:48):

I think I'm not an expert on model. There are models out there, great and others where I think we can capture those benefits. And I think our job internally is to work with folks in EPA work with folks in Department of Energy, DOT, White House and others to make sure we've got, there's no perfect model. We'll make sure we've got a model which captures a, which basically gets the math right and soil is a really important part of that. And again, we are optimistic about the ability to find a model that does that creates the right incentives and that creates a very low carbon biofuel.

LESLEY JANTARASAMI (02:24:30):

Well, please join me in thanking our speakers today under Secretary Bonnie Chuck Connor, Secretary Glickman. We have our work cut out for us. There's a lot more to be done, but we're very optimistic that things are moving in the right direction. So I'm going to turn it over now to Spencer Chase for some final words from Agri-Pulse. Thank you so much.

SPENCER CHASE (02:24:50):

Well, folks, as we wrap up here, again, very compelling discussion across a wide variety of subjects here today. I certainly learned a lot and I hope all of you did as well. Really compelling discussion about how far we've come on this subject, but still how far we have yet to go. And I think that's really indicative of the situation. And it would be fascinating to get us all together a year from now and talk about the advances we've made in the previous 365 days because I'm sure the innovation and the advancement on this subject is far from over.

Before I let y'all go, I do just want to mention a couple of housekeeping items. If you're interested in seeing a recording of this program. That'll be available soon on the Bipartisan Policy Center's YouTube channel, as well as the webpage for this event. And you can find that by going to bipartisanpolicy.org/events.

That's also going to be the webpage where you can find one event in particular aside from all the other programming that BPC does. One event for this crowd in particular. Next Tuesday, they're going to be hosting Senate Ag Chair Debbie Stabenow for a Farm Bill fireside chat. So, mark your calendars for that one as well.

If you are available, there is a light lunch available just outside these doors here. If you've got time for a sandwich and some more conversation, I'm sure there are some folks that would love to chat with each and every one of you, but I think that's going to do it for today.

Appreciate all of you joining us and have a great day.

