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Transcript of Ecosystem services: a way to bridge the gap

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BEGIN TRANSCRIPTION

[COURTNEY]
So Sally was named Director of the USDA Office of Ecosystem Services and Markets in December, 2008, so not very long ago. And you know, with a new administration.

This office plays an instrumental role in advancing the markets for it's services provided by farms, forests, and ranches across the country. So listen up all your folks that are working on farms, forests, and ranches, planing you in the room. As a director, Sally supports the Secretary of Agriculture and works for him in developing uniform science-based guidelines and the infrastructure necessary to make ecosystem markets function, including procedures and tools for measuring and reporting and registering those environmental benefits.

So, you know, this is a very important new office that we have, and she's taken that leadership role. She's spent more than 25 years in public service. So here's one of our heroes that have been devoting their life to that public service.

She served most recently as Associate Chief of the US Forest Service, and I've already mentioned where she got her degrees and maybe she'll come back to Colorado and get her last degree. That would be great in Colorado State.

(Courtney laughing)

Right. Sally, we are just so pleased you're here today and if you'd field your own questions at the end, and then and we'll get started.

(audience clapping)

(unintelligible)

[SALLY COLLINS]
So let's welcome Sally Collins. Okay.

I thought that maybe after lunch, it might be better not to get it too dark in here. So I'm not doing a PowerPoint presentation, which I usually do do, but I have two slides I'm gonna show you. I hope they work and they're for you, Courtney. And you'll see why, I hope.

You know, it's really great to be here. And it's not just great to be here, here because as you see, I look around and I see so many people that I've worked with and collaborated with over 25 years and have become friends and partners.

And it's just, when I realize sometimes is I get stuck in Washington, D.C. And I get uninspired and I need to come out here to get inspired. And I just really appreciate the opportunity to sit in and just hear the wonderful things that you're doing. So you heard a little bit from Robin.

Colorado is an especially special place for me. It's where every summer I came from Iowa with my five brothers and sisters and spent the summer at our family cabin up in Allens Park, which I'm hoping to go to tonight. It's where I graduated from college.

It's where I met my husband. It's where my daughter was born. It's where I got my first job.

And it's where when my father died, his ashes were spread across the top of a ridge on Roosevelt National Forest. It's a special place for me. It's also here where I first witnessed unmanaged growth.

You know, it's the kinda growth you see outside urban areas all over the country. But here, just south of here, more than 30 years ago, community leaders, some real pioneers in conservation saw that they were about to embark on a future that would destroy the very thing that made their community and their environment special. And they established an unprecedented set of conservation working landscapes that we all enjoy and are now being exported in terms of the idea all around the world. It's here, really where I first saw communities devoted to a place and to protecting it.

And not just protecting it for its natural resources, protecting it for the lifestyle, the history, and the culture of the area. So, while I haven't lived here in 25 years, I consider Colorado my own.

Now, a lot has changed in that 25 years, and not just here, but in the country and across the globe. And I can tell you, more changes are in store. Consider just a few things here.

Consider that development pressures in the US have resulted in an unprecedented conversion of farm and forested land in America. You all know this, that every minute of every day, according to the American Farmland Trust, we lose two acres of agricultural land production, two acres every minute of every day. Along with this, the footprint of urban areas has doubled. Water supplies are at risk across the United States.

Water quality is compromised, and it's not just compromised by the loss of forest and lands, but is compromised due to the eroding infrastructure of our sewers and our water treatment facilities. They're coming to their end of their lifespan, and we are about, according to EPA, have to invest billions of dollars in replacing them.

Fresh water withdrawals have doubled globally, an amount now approaching a quarter of all river flow on the globe. Now, think about this.

Four rivers no longer reach the oceans during the dry season. The Yellow, The Ganges, The Nile, and The Colorado. The four great rivers of the world, right?

Temperatures have increased on average as CO2 continues to accumulate in the atmosphere. And climatic changes have created drought conditions that we all know have led to unprecedented fires,

infestations of scales that have never been documented by scientists, and water shortages that really are gonna require a wholesale change in water policy in this country. We're fixing nitrogen at a rate that is equal to nature's. Creating at least 150 dead zones in the oceans through mostly the fertilization for agriculture, which, you know, is a practice that only started in the 1950s and '60s in my lifetime.

And now, one in four or five of the private wells in Iowa are exceeding EPAs nitrate levels for safety. It's one in five in my home state are not safe to drink. Island countries like the Philippines and Vietnam have just millions of miles of shoreline. And now they're working to figure out how they're going to plan for several meter increases in ocean water levels, right?

But they're already experiencing crop losses due to salinity levels in their soils. All of this raises the question about where's our food gonna come from? How's it gonna be become cultivated?

And all the costs associated with transporting it, whatever country you live in. So the problems that we were challenged by 30 years ago when I was thinking about starting my career, just seemed totally simple by comparison. And the solutions seemed easier.

A lot of us were around, I think, for the first burst of environmental legislation. We remember when EPA was created. We remember when the Council of Environmental Quality was created. We remember the Clean Air and the Clean Water Acts, and The Threatened and Endangered Species Acts.

And we remember the new industry around environmental litigation. That defined my career. 25 years ago, the approach was top down, command and control and regulation was the answer.

The enemy was a whole lot easier to find. It was usually the forest service or a timber company, or a polluter, a power plant, you name it.

You know the actors. Government was the enforcer, the regulatory parent. The style was combative.

Litigation was the weapon. Solutions were punitive, fines, prolonged litigation, driving bad actors, and often good actors out of business. Business and the market were the enemy and technology and evil force that created the mess in the first place.

And those of us working in the environment stood together, but we were alone fighting for species, not necessarily ecosystems, fighting against development, fighting for nature, and not necessarily what nature provides people, but we were fighting for nature for the sake of nature alone, because it was the right thing to do. And frankly, it was an elitist movement. It was led by the people who had money, that have in society as opposed to the have nots. And it has created, you know, a lot of wonderful things.

It created a lot of wilderness areas. It created a lot of wildlife refuges around the world, but it also created a lot of protected areas that all too often hurt or displace the poor, the indigenous people, minority groups, the have nots of society. Okay, so today's problems clearly don't lend themselves to yesterday's solutions. They're not enough today.

Something we need today is gonna be something we've never seen before because nothing we're seeing today have we seen before. Gus Speth, Dr.

Gus Speth, who was the Dean of forestry, School of Environment at Yale, put it this way. He said, "All we have to do to destroy the planet's climate and its biota is to keep doing exactly what we're doing today, even with no growth in human population and the world economy." So today, every sector of the economy, from manufacturing to energy production, every sector of the economy has to be an environmental sector.

Regulations have to be complemented by goals and penalties have to be augmented by incentives. Collaboration, not confrontation, has to be our operating style. Technology is not the enemy.

It's got to be part of the solution as our markets. We can have a whole conference on how technology can be part of the solution.

And there's so much that we can do with the technology we have today. Today we turn to markets and we turn to markets for both environmental and economic goals.

As one said, friend told me, 'Business has to be on board, not overboard.' So while we once looked to government for environmental leadership, you know, like the regulatory parent, now we look to businesses who are leading the way. Certainly in a lot of venues, we look to NGO groups like Environmental Defense, and we looked at the collaborative groups around the country because they're the ones that are coming up with a really creative new ideas. We're looking to you all for answers. Governments today have to be a facilitator.

We have to enable these ideas. We have to give them life. We have to create policies that make them work for you all.

And we have to figure out alternative ways to meet regulatory mandates. Today, we don't just draw lines on maps and call them protected, because today we know that laws and artificial boundaries don't save places, people do.

Today it's being for something not against. And today it's about inclusion.

It's where all people from disadvantaged Black, farmers in the south, to indigenous tribes in Brazil, to urban citizens, all people must be included in conservation solutions. And the reason is because they all have a role of providing and receiving the benefits from ecosystems. So today, it's not so much about environmental protection, it's much more about sustainable use and development.

It's about smart growth, it's about smart consumption, it's about green infrastructure. The environment, and I'm just loving seeing this, the environment is emerging as a priority for governments, and it's a priority for governments everywhere. It's a priority for businesses, it's a priority for people. People depend on nature for their well-being.

Businesses depend on nature for their bottom line today. That's why Coca-Cola invests in water projects on land because they need to clean water for their product. Service as a nature can't be ignored.

And so, 25 years later, we're thinking not just about how development affects species, but we're thinking about how development depends on ecosystems for their survival. So while we once invested in the environment to protect nature, we're now investing in the environment to support our development, our livelihood goals, and our local and national economies.

To me, this is the ecosystem services perspective. It's why I'm doing this work. So it doesn't matter when you're talking about protective landscapes, managed landscapes, or cultivated landscapes, we have to invest in our ecosystems to preserve human well-being.

That's what we have to do. This is a conservation approach that involves people, it puts people in the middle. It is inherently tied to the needs of society.

It involves measuring the flow of ecosystem services across the landscaping and connecting those services to the people who benefit from those services. And this is what I believe. When people are aware of their dependency on the health of the environment to their well-being, when they are aware of the value that they get from ecosystems, they begin to incorporate an environmental objective into their decision making.

They begin to treat the land as Aldo Leopold would say, 'With love and respect.' A major turning point for me in this whole discussion was the publication in 2005 of the Millennium Ecosystem Assessment. It's commissioned by the United Nations with some leadership from some visionaries, like Jonathan Lash with WRI and Walt Reid with Packard Foundation and a number of others. And it defines for the first time in any kind of legitimate way. If you haven't read it, I highly recommend you pick it up, and find it and pick it up.

But it defines ecosystem services as benefits that people get from ecosystems. It puts people in the middle. It classifies these ecosystem services into four categories, which I wanna really quickly explain because I think it's the nicest way of organizing the notion of ecosystem services. The first one is provisioning services, food, drinking water, fiber.

The second is regulating services like climate regulation and erosion control. The third, cultural services like recreation and aesthetic, religious values, so forth. And finally supporting services. Those supporting services like nutrient cycling that create the earth that grows our food.

For the first time in any significant way, this ecosystem assessment provided a health check on a set of ecosystem services worldwide, and it revealed, as is no surprise to any of us in this room that we're running down nature's ecosystem balance sheet, depleting our resources at an alarming rate. And part of the reason this is happening, as most of you know, is that ecosystem services aren't traditionally valued in the marketplace. They just aren't.

It's too easy to ignore them in any kind of economic equation because they're decoupled from economic growth. They're not valued, they're left out of decision making. And I think this new emerging market from nature services or ecosystem services is a way to begin addressing this market failure. And this was really well described in the Millennium Ecosystem Assessment where it talks about what a powerful force these can be as a way to, if they're designed well, and there's a lot of devil in the details.

You can rip this thing apart if you want to, it's gotta be designed well, but it can help bridge the gap, bridge the gap between conservation and livelihood goals because they provide and can provide direct incentives for land stewardship and good management incentives to protect the ecosystem services before we lose them. So we all know, and we heard it last night, that for landowners and land ownership in America to remain viable and economically rewarding, we have to have more than what we have to today. Landowners are just living on the edge, and the forces compelling conversion are really powerful in this country.

Markets for ecosystem services can offer opportunities for landowners to diversify their income portfolio, which will of course not only provide these new income streams, but provides these ecosystem services, which we all benefit and depend on. So, that's where I come in, because in May, it was in this spirit in May of 2008 that Congress passed a little known provision in the Farm Bill called Environmental Services Markets. And I think there are a few of you that probably had a lot to do with it being in there actually.

But frankly, it is visionary and it calls for USDA to create a market infrastructure to help try to imagine how we can make these markets for nature services real. It's really looking at opportunities for private money coming into conservation for water quality, water quantity, biodiversity, wetlands and carbon. So as a result of that Farm Bill provision, USDA created the Office of Ecosystem Services.

And that's where I'm now housed. So our goal in our office is to create a more unified, transparent market system where landowners can participate more easily in markets and really create a very established, clearly documented environmental benefit. And our work is driven by the fact that there are a lot of markets out there already, but these markets are really not very well organized, nor are they very well monitored to assure you're getting good environmental benefits. They don't necessarily add up to something in the end.

And so, we're looking at standardized methodologies, protocols that are based on good science. How can we know, for example, if you put a buffer on a stream, what kind of nitrates are gonna be taken up by that buffer? How many tons of sediment will be trapped?

What kind of temperature changes can you see because of that practice? You're gonna have to have a verification certification process, one that independently checks to be sure that that conservation benefit was there.

You know, it's a little bit different than the monitoring in this great panel that I just heard a minute ago because now you've got a market based on it. You're buying something, you've got a private market and you have to prove that in fact you achieve that benefit that they paid, that somebody paid you for. And then there's gotta be mechanisms to assure permanent symptomats risk.

You know, how can you be sure that somebody's not gonna undo that buffer on that stream two years later? You've gotta have some assurances of permanence.

And then there's this whole issue of trans-market transparency. You can't have deals cut underneath the table and behind curtains. For a fully functioning market to work, it has to be transparent and all open and accessible to all.

So these are the kind of goals, these are the kind of challenges our office is facing. And in looking at this, and I mentioned this to some folks at the table I'm sitting at, there are markets already for biodiversity that have been created by the Threatened and Endangered Species Act. And those are being managed largely through the Fish and Wildlife Service, the Department of Interior with innovators like EDF creating those markets. We've got wetlands markets created by the Clean Air Act, and managed by the core of engineers and the EPA.

Those are mitigation markets. We've got markets that have been started because of the Clean Water Act for water quality trading. They're really new markets and they're innovators out there all over the country trying to create these markets.

But they're not coordinated. There isn't a good way to, and the rules aren't written because they're all so new. So part of what we're doing is trying to figure out how to write the rules so that you're not chasing carbon at the extent of nitrogen and adverse impacts to water quality. Or you're not chasing carbon and planting the wrong kind of species of trees in a place that it won't sustain the kind of wildlife that we wanna see in that area.

There are a whole lot of these questions that have yet to be designed. We are dealing with an almost blank palette that we get to create.

And when I'm saying, we are not talking about my office, I'm talking about all of us who are interested in this conservation adventure we're on. So we've got a lot of work to do. And our vision is one where if you were to look at any farm or any ranch in America, they would be considering managing for ecosystem services just as easily as they grow corn or graze cattle.

And so this is where I'm gonna show my one or two slides. You could put those up. Scientific American came out with a great article in 2005, and this was called 'The Farm of the Future.' And it's really not a very good slice that pulled it off my Blackberry. But what I wanted to show you is that this is what you could envision in the future, where a farmer might have a biodiversity bank, be grazing sheep, have some maybe organic tomatoes, selling some carbon credits, maybe have a little alternative energy thrown in, and then a wetland bank that may be managed either by NOAA or Fish and Wildlife Service for a species that needs to be protected.

But you can see if you look at the bottom line that the income streams to the landowner could be much more stable, just like an ecosystem. You create much more resilience when you have diversification.

[COURTNEY]
And I think maybe there's one more slide.

[SALLY COLLINS]
I'm sorry there's not.

There's not? Okay, I tried to send you it.

I'm not necessarily all that good at the technology. But some of the other slide was simply a before and after picture, and we're trying to partner with some folks to create more of these. Courtney, so for your conference that you're gonna have next year, we'll have something for you. So let me just draw this to a close by saying a few more things.

Probably you're wondering who in their right mind would have any faith in any kind of market right now? Right? We've just seen, what was it?

(audience laughing)

That the end of civilization, isn't that what somebody called that last night? Everybody should be suspicious of markets, I think. But even before the crash, I have to say, I spent my life wondering, and I'm a little bit like I think Hart, is it you that were speaking about your suspicions as a young person about businesses? I really wondered if I'd sold out my ethical principles or I was compromising my conservation ideals by talking about markets for ecosystem services.

It's been a lot of internal debate about this. And it came down to me being, "What choice do we have? "What choice?

"Come up with some other ideas then, is what I said." It is just one idea, but it's also something I think we have to explore. And then as I was taking the train up to a conference in Connecticut last year, it was actually this past spring, I listened to the CT NPR on the radio, and I heard Gordon Brown, Prime Minister of Great Britain, talking about this upcoming economic summit. I think it was the first international trip Obama had gone on and it was gonna be held there in Europe. And he was gonna be meeting with Obama in a few days, but he started talking about the market and the crash and how everybody was upset and what are we gonna do about the market crash.

And this is what he said, and I really liked it. He said, "The truth is that the virtues that all of us "here admire most and the virtues that make society "flourish like hard work, taking responsibility, being honest, "being enterprising, being fair, these are not values that spring "from the market, but these are values we bring to the market.

"They're not springing from the market, they're springing from our hearts." So as we reflect, I think, on the challenges of conservation that are in front of us, a fresh approach can give us hope. Promoting a market force that comes from our hearts, imagining or engaging the imagination of people to address the unimaginable crisis, to reframe conservation from the perspective of people's needs, to farm for carbon or water just as you would corn or wheat, to form alliances, to form formidable alliances among former adversaries like we've been talking about here.

All of these things seem counterintuitive and contradictory and strange in so many ways, but in fact, they may be just what we need. I think an ecosystem services approach embraces the counterintuitive and helps us bring the human enterprise and development into harmony with the natural world. Now, what I find refreshing is this new generation of professionals that keeps coming into the environmental field. I was having lunch with some of them.

And they're bringing with them a new kind of creativity and taking us to places that, at least from my generation, we never imagined. I had two of them from Yale working in my office this summer. And I think unlike those of us who started our careers 25 years ago, these guys have only a vague idea of that conservation was once anything really different. They weren't fighting over the spotted out when, and they didn't have the war battle wounds that those of us who've been through this carry.

But they carry with them this fresh and open mind, and a focus on big solutions. And they seem completely undaunted by the scale of it all.

That's what amazes me the most. Completely undaunted by the scale of it all.

And the scale's huge. I have one thing that Gus Speth said that just has stayed with me. "it took all of history, all of history to create the $7 trillion economy that we knew on this planet in 1950." 7 trillion, all of history in 1950. Today we add that same amount of economic activity every five to ten years.

Just think about the number, the amount of natural resources that consumes, right? A new kind of growth is gonna have to emerge. It's gonna be something that we've never seen. All of our institutions are gonna have to change.

Everything is gonna have to change. These young professionals that are coming into conservation today seem to fearlessly embrace this idea.

And even with the healthy dose, the humility, which I see in all of them, but they embrace their role as the architects and the designers of this new economy, whatever it may be. And I think this more than anything else, makes me hopeful for the future.

(audience clapping)

Thank you guys. Okay.

[AUDIENCE ONE]
I'm up, are there any questions or any comments by anybody? Yes?

Where do we get the money to start paying markets. I mean, I think even in county here, we're always constrained on budgets. Where will we find, what's the source of revenue that we can begin to really do an ecological market?

[SALLY COLLINS]
Private sector, new businesses, not public money. Some of the money, and we were talking about this at lunch as well. There'll be ecosystem services there will be no market for that are really important to people, maybe pollination services, but that may be a market too.

There are businesses willing to pay for pollination services. There may be species that we have to protect as a society then, that are not gonna be in any kind of market in places there's no market for. But there's private money. I think there's this charge coming at us with a carbon market that is going to be unprecedented amount of money that's gonna be coming into conservation potentially.

[MARY]
If we can take this notion of climate change and mitigation and put it into good conservation and land use, we're gonna have an economic engine like you've never seen before. Mary, yeah.

(unintelligible)

[SALLY COLLINS]
Just to make the connection between ecosystem service markets and Do you think that ecosystem market will begin to pay for that new backlog natural infrastructure that we have or how is that gonna work?

Well, we all know that there's some work that natural infrastructure can play in preserving and replacing the built infrastructure. And so we always need to look, can we pay farmers to plant trees, to filter water, so we don't have to put in a treatment facility? Always need to look at that. But we have made this catastrophic mistake in the United States of America where we're putting our wastewater system with our sewer system, our water supply.

We've really kinda screwed up the way we've done, created our infrastructure, for a lot of reasons. We did this a really long time ago, but we are gonna have to replace that infrastructure, and a lot of that is gonna be public investment and we're gonna have to figure out how to fund it.

[AUDIENCE TWO]
Yeah.

A couple of comments. I think if you say it's gonna be private money, but in all honesty, I think some markets to get started after they've acquired partnership, otherwise it won't get going. So hopefully, despite our fiscal problem, you know, there is gonna be some additional resource to get some of these markets going.

[SALLY COLLINS]

[AUDIENCE TWO]
Good point.

A comment or two about markets and money. People sometimes say, 'Well, market's bad, money's bad.' They're not, they're cool, it's the way we use them that's important.

And I think what caused the problem to be faced recently, is the bad way those tools would be used. And I think that's something that government can address in terms of monitoring, are these tools that are absolutely fundamentally important to us, we cannot do without them, are gonna be used in the future, and some of the abuse that we experienced over the last few years cannot repeat themselves?

[SALLY COLLINS]
Thank you, those are great comments. And that is absolutely right. We may end up having to use public money to create the bank of carbon that we're gonna need to see for the first wave of carbon projects. We may have to use public money to prime the pump on some other market that just need to get going and prove the concept is real, et cetera, et cetera.

[AUDIENCE THREE]
And yeah, there's gonna be some regulation over that market, believe me. A lot of talk about that. Yeah?

You made quite a point early on that this should and probably will benefit the landowners of America. And I'm wondering if the process of writing rules and regulations.

(unintelligible)

[SALLY COLLINS]
Federal government does a pretty good job of that. Oftentimes kind of rules that apply generically all that specifically As you build these markets and provide these rules.

(audience laughing)

[AUDIENCE THREE]
As we. As we.

[SALLY COLLINS]
That's what I'm trying to get at.

[AUDIENCE THREE]
Yeah.

[SALLY COLLINS]
How are you involved in accessing local communities and land owners in the development of the rules of that?

That's a super good question. And one of the things that we're talking about right now is what kind of public process do we need to create? How does that venue need to happen?

Is it gonna be through an advisory committee? Is it gonna be through listing sessions? What is it going to be?

So we're in the process of doing that, but I'll tell you, we're real hypersensitive to that. And I think part of it is just watching what has happened and how conservation has worked over the last three or four years, and what's happened to rural communities in the west after the crash of the timber industry and how people have struggled. We've got a lot to build on and a lot of lessons that we've already learned. When I entered this venture, one of my driving, one of the driving most compelling forces for me was the conversion of land in America.

That's what made me most interested in this. And that means money has to find its way to the landowner to make it work. And so if there's one thing that I'm gonna be driven by, it will be that.

On the private lands, that's gonna be a big challenge and it's gonna be a big concern I have. Yeah.

[AUDIENCE FOUR]
(unintelligible)

[SALLY COLLINS]
A point of information. Some people may not be aware of it, but those institutions published online Two very useful brochures. Well, one a brochure and another very in-depth volume on how people can use the environmental services concept to help them improve the way they use Maybe your office got a whole bunch-

I have a whole, no, I just use everything WRI creates. I don't recreate it. And in fact, WRI created this wonderful guide for decision makers called an Ecosystems Services Guide for Decision Makers. And it basically walks you through a process for planning around the use of ecosystem services.

So one of these young people that worked for me this summer was also shared with WRI and we used a lot of their information. I made sure that every one of the planners in the US Forest Service had a copy of that Decision Makers Guide for Ecosystem Services. There's tools out there that EDF have prepared and WRI's prepared some real visionaries in the NGO sector that I look too for inspiration. And my goal is to stay small.

I told somebody this, "We don't wanna create a new bureaucracy. We sort of wanna be the anti bureaucracy. We wanna be small and adaptable and a governmental organization that's responsive to the needs and really light on our feet, and in tune with the forces that are going on around us." It's just really hard to do when you're in Washington, D.C. It's another reason why I'm really happy to be out here listening to all of you.

Yeah. So capturing anything anybody else has done has been my goal.

[AUDIENCE FIVE]
Yeah.

Just for the sake of arguments, you said, and one of the things I really appreciate about this conference is that it encourages innovative thinking, out-of-box thinking. And at one point in your speech you said that you were considering what other options might be available. And for the sake of the people who are remaining highly suspicious of the economic solution is limitations, especially for things like global climate change and the speed at which we need to achieve goals there.

Were there any other solutions? Are there any other solutions? Do limitations come into play anywhere there? Can you talk a little bit about that just as an exploratory idea?

[SALLY COLLINS]
Yeah, I mean, really the way I look at, I don't wanna sound like ecosystem services is going to change the world or that markets for ecosystem services are the answer to global warming or any of these. It's just one tool. It's just one market tool, and one market tool to counteract the forces of the market that exists now that don't value what nature provides. Now, there are a lot of other ideas that are out there.

I mean, super good ideas around green energy. And technology is why I say there ought to be a whole conference on innovations and technology that could help reduce the amount of carbon we put into the atmosphere.

So, I sounded like that. I didn't mean to sound like it's the answer to all problems. There are problems within these markets for ecosystem service.

Like I say, it's pretty much a blank. You know what happens when you have a blank palette is you sometimes make a lot of mistakes when you're first trying to, especially when you're not a very good artist. You do your best and you bring what you can, but you're gonna make a lot of mistakes. And early innovators always make mistakes.

What I'm hoping is that we can be really forgiving of these early innovators, that when we start trying these markets out, that we know we're gonna make some mistakes. And we build that into our framework and not say it's a bad idea because that mistake happened.

We go into it knowing that there are problems. Creating the architecture for an ecosystem services market is not easy and it's just riddled, loaded with lots of challenges. But that's why we gotta address them and working on them.

[COURTNEY]
(audience clapping)

[SALLY COLLINS]
Can we give Sally a hand.

(unintelligible)

[COURTNEY]
Thank you.

(Courtney laughing)

[SALLY COLLINS]
Oh, nice.

(Courtney laughing)

[COURTNEY]
I know I'm gonna appreciate this more than just anybody else.

(audience clapping)

Thank you so much.

END TRANSCRIPTION