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>> CATHERINE RIIHIMAKI: Producing enough food for seven and a half billion people is challenging, even in normal times, and recent years have been anything but normal.

>> NEWSCASTER: US Agriculture Secretary Sonny Perdue told Fox News Business up to 1 million calves have been killed in Iowa and Nebraska alone after historic flooding devastated the Midwest.

>> CATHERINE RIIHIMAKI: Epic flooding one year, historic droughts another.

>> NEWSCASTER: This drought affecting the Midwestern states right now could be the worst in 50 years.

>> NEWSCASTER: The damage is particularly devastating for farmers whose farm and ranch losses are expected to be in the billions.

>> CATHERINE RIIHIMAKI: And then there are other climate-related hazards like wildfires.

>> NEWSCASTER: We watched yesterday afternoon from Sky 8 as flames raced through dry wheat fields, almost seeming to dance in the perfect fuel pushed by a strong and steady wind.

>> CATHERINE RIIHIMAKI: My name is Catherine Riihimaki and my guest today is Suzy Friedman. She's the senior director for agricultural sustainability with the Environmental Defense Fund. She works with farmers across the US on issues like helping farmers become more resilient to climate change and extreme weather events. Suzy, welcome to All for Earth.

>> SUZY FRIEDMAN: Thank you.

>> CATHERINE RIIHIMAKI: So farmers have this very interesting relationship with the environment. On the one hand, their suffering during extreme weather events is very visible but they also impact the environment. When you talk about sustainable agriculture, you're not talking about small-scale organic farming, the people who are maybe selling at farmer's markets. What you're talking about are corn, wheat, soy, but really doing that at a large scale and, and these are ultimately products that we're buying at the grocery store, is that right?

>> SUZY FRIEDMAN: That is right. And you know there, there's a lot of us versus them and this is good and that's not that ends up coming into the, the agriculture and food conversation that, that really just gets in the way and isn't necessary. There's a role in a place and a value to all kinds of agriculture. And there's, I love going to my local farmer's market and there are a lot of great things about buying organic, and we all need fruits and vegetables. But when you think about our food system at

scale, corn and wheat and soybeans are the building blocks. They're in just about everything. They feed the animals that are a significant part of our food system. They dominate the landscape. And so while local food systems are great and that's where, especially for fresh fruits and vegetables, that's a really important thing. When we're talking about sustainability at scale that is going to impact the climate, impact our water quality and water quantity at scale, that's the, the agriculture that has the biggest footprint and so that's commodity crop agriculture. And so that's where we really need to collaborate and partner and find the ways that are going to work and sustain those sectors economically, and find the ways to make that sustainable at scale.

>> CATHERINE RIIHIMAKI: You know, I want to come back to sort of this us-versus-them mindset in just a moment because I think, you know, the collaborations that you've developed are really interesting in kind of breaking that down. But I want to really get to the heart of what resilience looks like when it comes to agriculture and extreme weather events.

>> SUZY FRIEDMAN: Yeah. You know there, there are a lot of aspects to it and it's not, it's not easy. You know, the agriculture has, you know, they, it really covers the Midwest part of the country in particular and there are a lot of communities there. And so how that landscape is used can play an enormously beneficial role for smaller scale floods and how those, how those floods affect their communities, you know, it can really provide an enormous benefit to mitigating those smaller scale floods. And so we can really take advantage of that enormous opportunity. So it's-

>> CATHERINE RIIHIMAKI: So I want to, I want to interrupt for just a second.

>> SUZY FRIEDMAN: Sure.

>> CATHERINE RIIHIMAKI: So you're saying basically that the way that the farmers are using their land can help improve flooding that is downstream?

>> SUZY FRIEDMAN: Right. They can help mitigate those floods downstream so there, there's just great opportunities to look at this landscape in a much more integrated way. So the, you know, it's resilience for the farmers themselves and are they going to be profitable and can they sustain their own livelihoods? But also water quality downstream and flood and drought impacts for their broader communities. So that's why it's, it's really important to look at the landscape from an integrated perspective, from a high, you know, hydrological perspective. But also we really all need to work at this together and there are just enormous opportunities to not only save money from looking at natural infrastructure opportunities but also just do it collaboratively and avoid fights.

>> CATHERINE RIIHIMAKI: So what do you encounter as the bottlenecks for this work? Is it the lack of information that gets to farmers about what best practices are for sustainable agriculture? Or is it that they don't have access to the appropriate technology to even document what they're doing? Or is it some other aspect of the, the system?

>> SUZY FRIEDMAN: You know, it's a variety of things. It is, information is definitely one of them and having access to the information about what the options are. It's also being able to have the, the time and the coordination to look at things at a watershed scale and be able to collect, to look at those options collectively, because it's no longer looking at things individually. And a lot of our policies around agriculture drive towards individual actions. There's a lot of programs that encourage, you know, they're programs that, you know, farmers sign up individually. There are very few of our AG policies that encourage collective action or even allow it. The data is farm by farm, the responses are farm by farm, so we also need more policy options that allow groups of farmers or communities to look at and advanced solutions collectively.

>> CATHERINE RIIHIMAKI: You know, I want to think a little bit about some of the other aspects of sustainable agriculture that you work on. You mentioned fertilizer runoff and water pollution. Is that one of the other major areas of work for EDF and for yourself?

>> SUZY FRIEDMAN: Yeah, you know, we work on, you know, there's, there's a, farming as a system and so I'd say, you know, we look at the, the system of farming, that collection of practices in terms of how they manage their fertilizer, their soils, their tillage, their edge of field practices. And that collection of practices will impact the quality of the water that leaves their farm, the quality of their soils and how it sustains their yields, as well as what comes off their farms in terms of emissions into the air. And all of those things interact as well. Yes, we do work on fertilizer and how that impacts both water quality and air. We really don't like to look at it in isolation, because how they manage their fertilizer is very tied up in how they, you know, are they doing cover crops? How are they managing their tillage? What is their crop rotation? All of those things tie together and influence each other.

>> CATHERINE RIIHIMAKI: Got it. And so it seems like you guys are looking for the epitome of win-win situations.

>> SUZY FRIEDMAN: Exactly, yep. Yep. Make it good for them, good for their business, help them meet their needs, and improve what's happening on the ground.

>> CATHERINE RIIHIMAKI: You guys also work on habitat protection.

>> SUZY FRIEDMAN: Yes, we do.

>> CATHERINE RIIHIMAKI: As part of this and do you have win-wins there, because sometimes it's portrayed as real trade-offs between agriculture land versus natural habitat.

>> SUZY FRIEDMAN: You know, I think that there are a lot of win-wins. One of EDF's big priorities on the habitat front right now is saving the monarch butterfly which has, the monarch butterfly numbers have declined by some 90%. And one of its, you know, it's, it's big flyways goes from Mexico up through the Midwest of the United States and then it also has a fly way up through California. And so agriculture, agricultural lands are going to be critical if we are going to save the species. And so

collaborating with corn and wheat and soybean farmers, particularly in that Midwestern flyway, it's the way to go. It's, it's exactly what we need to do and we have found that farmers are, are really eager to do this if we can collaborate and get some assistance. They are very eager to help save this species. And there are some trade-offs but especially with this species, they love little patches of habitat all over the place. So, planting monarch habitat around barns, along fences, in little patches that aren't in production around the, around the farm can really get the job done. And actually the biggest challenge is that the seed for milkweed and other nectar plants for monarch habitat is expensive. And so that's where we really try to find the, the funding and bring resources to the farmers to be able to cover that, that part and then farmers are really stepping up to the plate to plant this habitat on their, on their farms. They're not saying pay me. They're just saying can you help cover the cost of the seed.

>> CATHERINE RIIHIMAKI: And it's interesting, because monarchs are not pollinators, right? So this isn't necessarily in their business interest. This is sort of them, I don't know if it's a morality issue that they want to protect the species that is beautiful. But even though it's not really contributing to their business operations.

>> SUZY FRIEDMAN: You know, it's interesting. I've had a lot of conversations with farmers about this very issue and, and there's a lot of work by farmers on bees and other pollinators as well. And so there's a lot of work on that front as well. But with the monarchs, you know, as one, one farmer I was talking to, a really wonderful farm adviser that we do a ton of work with who has a farm in Minnesota and has planted monarch habitat. And she said you know, every farmer has a monarch story from their childhood, before the really steep decline happened. And, and it is very nostalgic and it has a wonderful place in their heart. And every farmer has one. And so it's a great opportunity to bring that back, and so if, you know, for a little bit of their land, if we can get some help with the cost of that seed, they can bring that back.

>> CATHERINE RIIHIMAKI: You know, that's a great segue for us to just talk about this kind of breaking down of the us-versus-them mindset that we mentioned earlier. Farmers are in this very unique position of being witnesses to environmental change and really being sensitive to that as well because their livelihood depends on having a healthy environment in which they can grow their plants. Is that how you have been able to make these connections with them, and how have you managed to build trust across what has in some respects seemed like a big divide, environmentalist versus farmers or environmentalists versus big business?

>> SUZY FRIEDMAN: Exactly. You know, I've found that those barriers actually are very easy to break down. There's a lot of, there's a lot of assuming that goes on. You know, when I walk into a room, whether it's with a couple of farmers or a lot of farmers, if they don't know me yet and all they know is the name of the organization that I work with, they often assume that I'm going to walk in the room and be accusing them or assuming that they are bad actors or trying to harm the environment, or that all they care about is making as much yield as they can and they don't care about what the impacts to the environment are. And then I'm assuming they're bad stewards of the land. And so they're defensive. They're coming in in a defensive position. And so I have found that one of the most important things that I can do is really explain that's not what I'm thinking, that my assumption is that they're doing the very best they can to take care of the land because it is the livelihood. And that they're operating with the information that they have and doing the best that they can under very difficult weather and very difficult economic times and that the more we can collaborate, the further we can go and the

more we can get done. And it just opens up a lot of doors.

>> CATHERINE RIIHIMAKI: Are there doors that you or the Environmental Defense Fund are willing to go through that other environmental groups aren't?

>> SUZY FRIEDMAN: So, I don't know how often other environmental groups are even knocking on those doors. I think a lot of them don't though, and I think we could get a lot more done if more of them did. Because I have found it to be very rewarding and very successful, and it's also just really fun to get out there.

>> CATHERINE RIIHIMAKI: Who are some of the other corporate groups that you work with that people might be surprised to see an environmental group kind of having productive collaborations with?

>> SUZY FRIEDMAN: So, this is something that has become kind of trademark for EDF. Back in the '80s there was a big aha moment for EDF when we had our first big corporate partnership with McDonald's, working with them to help address one of their land waste issues around their styrofoam clam shells and it was a big wake-up call to us when we realized how big a business opportunity it could be to help a company save money and reduce environmental impact at the same time when we worked with them to replace the clam shells with, with paper. And McDonald's saved a ton of money and did a great thing environmentally. And so we've gone on to do a lot of corporate partnerships and have an entire program called EDF plus business. And so EDF is working with corporations across a lot of, all of our different programs but in agriculture, we're working with Smithfield Foods. We're also working with Tyson Foods also on feed grain sustainability and a number of different issues. We're working with Campbell Soup. We do work on sustainability with Walmart. So those are a number of them. We also have a initiative focused on training the advisors that a lot of farmers work with, ag retailers and crop consultants and in that we're partnering with the AG Retailers Association Field to Market and American Society of Agronomy. So we're, we're working on that in a number of different arenas.

>> CATHERINE RIIHIMAKI: And how do you respond to people who might say about McDonald's, you know, we shouldn't be helping them make more money or in the case of food, you know, Michael Pollan is one person who has mentioned that we grow too much corn in this country and here you are collaborating with corn growers to help them be more successful. So how do you sort of counter those negative arguments?

>> SUZY FRIEDMAN: And I can understand where people who have those perspectives come from and everyone is entitled to their, to their perspective. And so I am definitely willing to, to discuss. But I, my perspective is that this is the reality that we're, we're living in. And there may be a world someday that doesn't have a Walmart or doesn't have corn, but I, you know, honestly don't see that happening and so I think that there is enormous value and I think it's really been proven out to try to generate as much environmental improvement through collaboration with these actors who have scale. Because I think that's really how we can make environmental impact at scale, is by working with those who have scale. It's just kind of fundamental. It's basic math. And so if we want to make further progress on the environmental impact and generate further improvement with, you know, 80, 90 million acres of corn

grown in the US every year, best place to do that is by working with the National Corn Growers Association. And so we now have a really comprehensive significant partnership with them and it's honestly one of the most fun partnerships I've ever had. And, you know, if you want to influence the supply chain at scale, work with the big buyers and the big, the big companies. So, I know that they're going to always be those that disagree with that and it takes all kinds to make progress. And so those that disagree, you know, that's fine and you'll have your strategy and go forth and be merry, but I think, you know, I think, I really like EDF's approach and I think it has impact and value and I think we've proven that out and that's why I've stuck around here for over 18 years.

>> CATHERINE RIIHIMAKI: I want to finish our conversation just by thinking about what the future of agriculture looks like. Human population is heading towards maybe 9 billion people worldwide. I love how optimistic you sound and so I'm wondering if you're optimistic that we can feed so many people without completely trashing the environment.

>> SUZY FRIEDMAN: I am. One, I think we have to be. But I think that fundamentally I think we have an unbelievable ability to innovate and find ways to do things better and adapt to the realities that we're faced with. And I think we have seen that in agriculture again and again, and I think we're seeing it now. We're seeing an incredible wave of innovation in technology. And for a long time, that technological innovation was really focused on how to maximize yield and we're seeing that technological innovation shift towards how to manage that productivity in the face of more extreme weather, how to be more sustainable, how to manage nutrients much more precisely, how to map, you know every square foot of the field to be more efficient across all of the inputs. How to, you know, map the soils and, and reduce environmental impact. So I really do think that we're going to find the ways to produce and be more sustainable and efficient. We're also, you know, seeing what, you know, how can things be shared across the, across agriculture. We can have, you know, an agricultural gig economy where we can have these amazing innovations that can be shared across multiple farmers. So I think we are going to get there. You know, there are probably big shifts. There's probably going to be some big disruptions ahead of us that we don't know what those are yet but I'm confident that we're going to have a lot of smart people who can figure it out.

>> CATHERINE RIIHIMAKI: Including hopefully you.

>> SUZY FRIEDMAN: I hope I can, I hope I can help contribute some things and I think a big part of that is we need farmers at the table, and we need to give them the opportunity to have access to technological innovations and have them helping us figure it out.

>> CATHERINE RIIHIMAKI: Well, Suzy, thank you so much for joining us today. I'll be thinking about you and your farmer colleagues as I shop at the grocery store. Good luck with all of your work.

>> SUZY FRIEDMAN: Well thank you for the opportunity. This has been fun.

>> CATHERINE RIIHIMAKI: Suzy Friedman works for the Environmental Defense Fund as the senior director for agricultural sustainability. You can follow her on twitter at friedman suzy that's F R I E D M

A N S U Z Y and you can learn more about the Environmental Defense Fund at www.edf.org. Please subscribe to our podcast feed wherever you get your podcasts. I also hope to see you all in person October 24th and 25th at Princeton University for a celebration of 25 years of the Princeton Environmental Institute. Several of our podcast guests will be speaking at the forum and there will be many more bright minds in all aspects of the environment and sustainability. Until then, be well.

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