Conversation with Avriel Diaz
Ashley Hopkinson
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Ashley Hopkinson: Can you tell me a little bit about yourself and the journey that brought you to the work you do today?

Avriel Diaz: I'm Avrael Diaz and I am a scientist. I am a systems ecologist by training. Over the last ten years, I have been focused on climate, environment, and health initiatives. I got into this field in 2015, 2016, when I moved to Ecuador. I was brought down to study the Zika virus right before a 7.8-magnitude earthquake hit.

And when that hit, I was asked to reroute and volunteer for two weeks in the northern part of the country in a little small town called Bahia de Caracas. And that two weeks turned into eight years, many years. What I saw was that the Zika virus epidemic coincided with one of the strongest El Nino events in history, and it also coincided with this earthquake. That's what really launched me into the field of climate, environment, and health work.

I co-founded an organization called Walking Palms Global Health. What we did was really community-based work, looking at how to build resilience in the aftermath of an earthquake. We initially began as relief, but we started to see lots of organizations leave after the initial one- or two-year period. So, with my friends on the ground, we decided to do something that would be more in the recovery phase, then eventually enter prevention. So we started to do that, and we had programs looking at the impacts of climate and environment on mental health and chronic disease. We had a big diabetes and hypertension program.

From there, I started to see the power of education in the youth we were working with. I also started to see, "Okay, how could we use different tools for prevention?" I eventually joined a team that was doing early warning system development for climate-sensitive disease. I became part of that team, and that took me not only to Ecuador, but then also to the Caribbean. So I work heavily there and now in

Panama. After initially doing some of the early warning system work, which I'm still involved in, then I joined the Global Council for Science and the Environment, where I'm based right now. This was really exciting because the platform is really to advance climate and environmental justice through science for decision-making. And science for decision-making is something that I'm very passionate about.

I saw on the ground, after the aftermath of the earthquake, how important it was to have evidence-based data to support the programming we were doing. And this organization allows me to have a greater reach in terms of how we can really nurture, cultivate, and empower scientists and youth scientists to create community change. So that's how I got here.

Ashley Hopkinson: What did you learn from working across these different countries? Was there a specific strategy or approach you took in these different areas?

Avriel Diaz: So my family is from Puerto Rico, and I grew up seeing through my grandma, my dad, and my cousins the way the Caribbean was. So, I wanted to get back to the Caribbean after being in Ecuador. For me, I think it's funny because there's so many differences between countries, but there's so many similarities.

I think that the overarching approach that we take is one that's transdisciplinary. When we are working in countries, the way we form teams involves the Ministry of Education, Ministry of Environment, and the health sector -- everyone gets a seat at a table. We also include the community leaders. That approach has been the same in every country we work in: to really co-produce the work that we're doing. We work on many different projects, but it's always really interdisciplinary. I think that when you have more perspectives at the table, you end up with really, really interesting results.

At Walking Palms -- just to give you a sense of how different it was -- we had scientists working with musicians, professional boxers, doctors, government officials, artists. Everyone would be at the meetings, thinking about how we can create a solution for one problem.

Global Council for Science and Environment is an organization that has historically been in the United States, and about two years ago, made the decision to go global. So, I was brought on to think about how we could really cultivate and restructure the board, which was not international.

Ashley Hopkinson: Can you tell me more about the interdisciplinary, interdependent approach that you now bring to your work with the Global Council for Science and Environment?

Avriel Diaz: One of our flagship programs is called EnvironMentors. And this is one of the reasons why I was really attracted to this organization. For about 20 years, they've been working in this area,

connecting a mentorship network of faculty or private industry professionals to undergraduates and high school students.

The high school students are doing research in their own communities, mostly around environmental or climate justice issues. They pick something that's really important to them, and then they are able to connect to their broader mentors to support their research. Then, we bring them to DC every year to present their research to National Aeronautics and Space Administration (Nasa) , National Oceanic and Atmospheric Administration (NOAA), United States Department of Agriculture (USDA), National Science Foundation (NSF) –- big players in the field.

One of the things that I brought to this program, in terms of the transdisciplinary approach, is that we're about to launch communities of practice. Right now, we're working on plastics. We'll also have a digital tools and AI community of practice, and an early warning system community of practice. The communities of practice include experts from all around the world from very different disciplines working together.

What we want to do now is plug in the EnvironMentors network to get high school students who are doing the research –- these young scientists –- involved in these communities of practice because we need to hear their perspectives on how they're going to change the world within their communities. They are the experts. I think that including those voices is absolutely critical if we want to really make change.

We also have something called the Applied Solutions Network, which connects governments to universities. Through that, governments working on environmental challenges utilize the universities as their science experts. Now, we also want to include the EnvironMentors so those local governments can be working with their local students who are actually doing the research.

Again, now you have those different perspectives, not just at the highest level thinking about how to solve a problem, but really getting these new perspectives from students who are working on this every day.

Ashley Hopkinson: What have you learned from the collaborative way you work? What has been challenging about collaboration and partnership, and how have you worked to overcome those challenges?

Avriel Diaz: The biggest thing is the human-to-human connection. I don't think there's a tool or an approach. What I do in all of these meetings and interactions around the world is get to know the person before the profession, before the project. I want to know them as a person and connect with

them. Once you start to have that actual human-to-human connection, then ideas begin to flow, and your collaborations work better. I think that's really important.

I think one of the big, big things that we do really well is, whenever we're building these partnerships and collaborations, I'm there listening to people -- listening and learning. Then, we can begin to share and have that cross-exchange.

I think that people need to listen more. I think that's really important in partnerships -- especially working in different countries -- while learning from people who are on the ground living in these situations. You have to have much more understanding and appreciation for what it is to be in collaborative work. There has to be a balance, and I don't think it's a 50/50 balance.

If you're working in another country or in a different community, you have to do the majority of the learning. The sharing comes from the people who are on the ground. The people who are not from there need to listen and learn. Then you can figure out, "Okay, where is my role? Where is my small role in this larger piece of the puzzle?"

Ashley Hopkinson: Listening is a very key part of it. What do you think is missing from the conversation around climate and health?

Avriel Diaz: Yeah, a lot of things. I think that it's really gaining a lot of momentum now, which is fabulous. When I first started, people said, "Climate and health?" So that's great. This climate week was really nice because I heard more about the financing part of it and the funding to back this type of work because we need a lot of money to do this around the world.

So, it was really positive to hear that these conversations are going up to a higher level. Last year, Health Day was the first at COP, which was great, and we have to continue that momentum. But I think that the financing piece is really important.

Also, there can sometimes be a misalignment of, "Okay, we want to do climate and health work," but the National Meteorological Services have never been in a room with the Ministry of Health. That is something that needs to be thought about really carefully because you can't have your climate and health projects without those two key stakeholders having that interaction and collaboration.

So I think that increasing partnerships and dialogue as well as capacity building should be considered. "Okay, why is climate causing health implications in a wide array of different areas?"

You have health being impacted from disease to chronic disease, to mental health, to maternity care. You have so many different areas. We need to be educating from a really young age, not only about the health and climate part but climate in general. It needs to be really infused into educational curriculums, from kindergarten all the way up. That way, it's something that people have a baseline for. So I think that that's the other key area.

Ashley Hopkinson: My first hurricane season in New Orleans, the hospital had to stay open on generators, and you see the displacement–and the connection clicked immediately. But we're not all having those experiences where we see the intersection of climate and health on a regular basis.

Avriel Diaz: One of my favorite places to work is in the Caribbean, and that's because there's political will and mandate for climate action. When you have that, it really changes the game on how much work can get done. In countries where it's not a top priority, it's not going to be invested in as much. You're not going to have the capacity built up if there's no actual mandate from the national country.

For example, In Barbados with Mia Motley, what they're doing is incredible. She's been a champion for climate action, and you can just see the difference when you work there. All of the ministries are just so aware. It's at the front of their thought process, "Okay, how are we going to incorporate climate into this?"

You don't see that in all countries. But I think that Barbados is leading, and a lot of the countries in the Caribbean are as well. It makes a big difference to have the political will and a mandate to back up climate action.

Ashley Hopkinson: What do you think it will take to demonstrate the value of this type of work, particularly the intersection of climate and health? You mentioned data. But what else is needed to say this is an area that requires investment, attention and education etc?

Avriel Diaz: In the climate adaptation field, governments need to see the return on investment. They need to have the financial backing to say, "Here's the return. If we can invest in adaptation and prevention, this is how much money we're going to save, and here's what the models show." I think that's something that needs to be really heavily looked into. We are doing some of that now, but it needs to be done way more.

And then again, the education component. I've made the analogy to smoking in the U.S. We've seen smoking trends go down so heavily, but why? It's because in the '90s, children started receiving that education of "smoking is bad for you, smoking causes cancer." There was a cultural shift.

I don't think you can have that cultural shift without years of education and thinking about how we can really successfully put this into a global curriculum.

Obviously, it'll be tailored differently to the different areas, especially based on where you're living. If you are in the Northwest, you might have more curriculum based on wildfires; if you're in the Southeast, maybe you have to pay more attention to hurricanes. So climate, how climate works, and the difference between climate change and variability is also important to know.

I think that education and the return on investment are going to be key pieces of a cultural shift.

Ashley Hopkinson: Do you have a story of impact that demonstrates why you do your work and how it's moving the needle?

Avriel Diaz: I've had the opportunity to work on these very transdisciplinary teams for a long time in early warning system development. In the Caribbean, one of the areas that we're working in right now is doing an early warning system for climate-sensitive diseases, heavily focused on Dengue, Zika, and Chikungunya.

And we are implementing it right now, which is really, really exciting. The baseline work began in 2017, really diving into what was needed and how we could go about this. It's a true co-production process. A lot of people use that as a buzzword right now, but this is a true co-production, which takes longer.

I came on the team in 2019, and two years prior to that, there was more scoping, understanding the feasibility, and meeting with so many stakeholders who were going to be able to use this early warning system. "How can we really develop this? What are your needs? What are your perspectives?"

So it was such an amazing process, and we're implementing it now. There are very few early warning systems that are implemented at the national level. And this is a really exciting time.

Years before, we did a landscaping analysis of tools for climate-sensitive diseases. We looked at, I think, about 9500 papers. And of that, only 37 tools were available. And probably a third of that were actually operationalized around the world.

This is really huge, and we need to up that number, but there are a lot of reasons why it usually doesn't come into play. But we've been successful with all of our partners. We actually just published a piece on the implementation process and the years of work that went into it. Then, this spring, we'll be doing the monitoring and evaluation.

But it's there. We did a test during the Cricket World Cup. Barbados had some of that information to be able to help (in that prevention work). It still needs to be really thought about because vector-borne diseases in the tourism sector require careful monitoring, so you need to be alert but not scare people.

I think that they're doing a really great job of balancing how they're going to use this for prevention and work with all the different sectors to make sure that the population is safe and that their tourists are safe as well. So it's exciting. I think it will have a really big impact, and we'll begin to see more.

We are beginning to see many more countries that are really interested in how they can use these types of digital tools in terms of early warning. In 2023, we had the highest outbreak of Dengue across the Americas in history. And in the first six months of 2024, we had already surpassed 2023.

So that's huge. And it's very relevant timing. I think a lot of times people hear Dengue, and they say, "Oh, well, that's not affecting me unless I go on vacation," but it does. With climate change and variability, these vectors are spreading. They're spreading a lot, and they're getting into areas where it was traditionally too cold for them to be.

Now they're expanding their geographic range. They're biting more. It's actually changing their behavior. It's increasing their viral load capacity. So, this is going to be a global issue. If we can really use the tools that we have at our disposal, then we can start to prevent it, save lives, and save days of work loss, and then save money.

Ashley Hopkinson: For someone who may not see the parallel between preventative healthcare and early warning systems, can you explain the value and importance of creating systems and having these tools?

Avriel Diaz: Many countries around the world are responding to an outbreak. There is a lot of prevention that involves vector control going house to house. We'll check for breeding sites; we'll spray. But a lot of times when we begin to see an outbreak or begin to see cases starting to rise, that's when the government can really deploy all of the tools: the fumigation and different insecticides, different types of genetic testing and so forth, or even hire more people to go out and do vector control.

It's almost always, on a really big response level and not a preventative level. Although there are daily interactions with people (around this work). What governments have told us is that if they can have, let's say, a three-ish month lead time, that would enable them to really target where in the country this is happening. And it depends, right? In the Caribbean, the islands are pretty small, so some of our

areas of work are on a country-wide scale because of the size of the country. But in Panama, that's on a city-basis or even down to a community-basis. So, each country is different.

If they have the lead time, they can say, "Okay, we are probably going to have an outbreak in three months. Now in the first month, we're going to do things differently. We're going to deploy more vector control technicians to this area of the country. We're going to do more fumigation here. We're going to do more education campaigns in schools around this area where we think the outbreak will be, and we're going to have people hand out lids or have different areas make sure that their water tanks are stored properly." So it begins to change behavior because you know that something could happen.

That's why early warning systems are so important for prevention and well-being. It also gives a sense of peace to community members because now you have vector control working with an extra tool, and they feel safer. If the government had that information ahead of time, community members could respond also and do their part. It's not just the government doing their part; it's also the communities doing their part. And so everyone has a little bit more lead time to make sure that they don't get sick.

Ashley Hopkinson: Do you have an insight or a teachable lesson that someone could use if they were trying to implement this in their own country?

Avriel Diaz: Patience. I think that when you're working in transdisciplinary teams, you're speaking a lot of different languages. You have someone working from the health sector talking with someone who's working in education or with someone who's working at a community NGO.

So you have people literally speaking different languages. You have to be really patient, and you have to have the ability to translate between people. One of the most important things that gets left out when talking about digital tools is the inclusion of a social scientist and how people will respond to these types of interventions in terms of climate action.

I think working with a social scientist and a communication expert is something that will help projects go a much longer way. We can take a lot of what we learn from communications and marketing. If we want a cultural shift to make climate-informed decisions, we have to use tools that might not have been used before.

We have to use tools like Instagram, TikTok, Facebook, and WhatsApp to think about how we're disseminating messages and how we're communicating in groups. I think that there's a lot to be learned from that. And I think having a social scientist say, "This is how humans behave and might respond to these interventions," is something that is really critical.

The social scientist who we work with is phenomenal and has really helped us to think about the interventions in place, the design, and how people will respond.

Ashley Hopkinson: What's something you tried that didn't work the way you thought it would? How did you work to overcome that particular challenge?

Avriel Diaz: I think in terms of the early warning, one of the challenges we have and will continue to have, working and implementing in different countries and building them together with countries, is data.

A lot of times, you'll have funders who want to do good, want to help in the investment, saying, "Oh, yes, we want an early warning system here, but there have only been electronic databases in this particular country for seven years."

That's not enough data to be able to go back and actually say something meaningful in your models. And that's something that needs to be considered for investors in terms of, "Let's fund basic equipment that is going to help a country move way forward," not just the fancy tools.

I think that it's something that gets left out of the conversation a lot. We need to invest in basic infrastructure, cloud services, data capture systems, and electronic tools to be able to input and also take paper data that's been stored and convert that. I think that the data gap is something real and needs to be heavily invested in terms of helping countries build up their infrastructure.

Ashley Hopkinson: I hadn't thought about that–bringing systems current. There are systems that could benefit from foundational investment in order to build that data up.

Avriel Diaz: I think a lot of them now are electronic, but they don't have a historical database that goes back long enough for early warning. Some countries do, and every year, we're adding more data. So we need to make sure that the data capture systems and tools they have are really helping them to be more efficient.

A lot of times, around the world, Departments of Health and Ministries of Health are swamped, and they just went through a major pandemic. Being able to have these tools that can really lower the burden of work and to be able to just say, "Okay, here's the system, and it's running smooth, and it's sending out the alerts to all the places," without people having to do another job—it's something that needs to be considered.

I would also say, more generally, in this field, making sure people are getting taken care of, (it's essential). Burnout is something that is really serious, and a lot of people are trying to work so hard to make a difference, and those people need to be taken care of.

Ashley Hopkinson: Wellbeing for the people who are trying to ensure wellbeing for others. Given the right support, what would you like to see expand and grow?

Avriel Diaz: For me, education. We need to be focused on how we can change institutional structures to incorporate this climate action education and just climate information in general–climate and climate change and how it's impacting all of the different sectors. I think that if we can do that, then we will have a more impactful change.

I know I said it earlier, but I really have to drill it home: education is critical. One of the EnvironMentors programs we have is really doing that. The students are not only learning about the environment and climate, but they're putting it into practice. They're doing it in their own communities, working on projects about air quality issues, soil toxicity, water problems, biodiversity, and climate impacts on health.

If we can begin to think about the problems in our own communities and how we can tackle them, and then how we can educate the youth to think about those and be agents of change, and then scale it up from there, I think we'll have more success.

Ashley Hopkinson: What does collective wellbeing mean to you?

Avriel Diaz: For me, when I hear collective wellbeing, I think of community resilience. I think that collectively, we can feel healthy and be at peace if we are being taken care of and if we're taking care of others. I think that building of community can mean many different things. You can have a community in your school, you can have a community in your church, you can have a community with a group of friends. So, it's very diverse when I say "community."

You can have a physical community in your actual address, if we're taking care of each other. If I know that I'm sick right now, but I know that my friend can help me and bring me medicine—this collective wellbeing—then I feel at peace because I'm there. I'm being held.

I have a really nice group of friends involved in CrossFit and in a running club, and that's another form of collective wellbeing. We're sharing this energy, taking care of ourselves, and holding ourselves accountable. So there are a lot of ways to do it, but I think the fundamental word is "community," and being held and taking care of each other.

Ashley Hopkinson: Is there anything you want to add about your work?

Avriel Diaz: One of the big things that I've been working toward in my career is science for decision-making. Traditionally, science for decision-making was thought of as scientists having their policy brief, bringing it to an office, and saying, "Here's the data to support this work. We should implement the bill."I think it's shifting now, but it has a long way to go.

We have to bring decision-makers into the actual research phase. Once decision-makers are there, seeing what the research looks like and being part of the solution, and we're working toward research that's solutions-oriented, then you'll start to form things that are going to be really useful for public good.

I just want to leave with the message that we need to be having the conversation with all actors involved. That way, we can form these solutions to these very complex problems that actually produce change and ensure that the research is informing decisions that are going to actually create policy change and shifts in our society.

Ashley Hopkinson: Thank you for sharing that. That was really valuable.

Ashley Hopkinson is an award-winning journalist, newsroom entrepreneur and leader dedicated to excellent storytelling and mission-driven media. She currently manages the Solutions Insights Lab, an initiative of the Solutions Journalism Network. She is based in New Orleans, Louisiana.

* This conversation has been edited and condensed.