

Interview with Vanessa Forbes

Interview Participants:

Melody Hunter-Pillion, *Interviewer*

Vanessa Forbes, *Interviewee*

Jamie Currie, *Videographer*

Jimmy, *Facility Administrator*

[Due to climate control sensors in the room, occasional audible beeping occurs during the interview session]

Melody Hunter-Pillion: So, for the record, I am Melody Hunter-Pillion and I'm interviewing Vanessa Forbes. Today is Thursday, May 31, 2018. We are at the International Institute of Tropical Forestry in San Juan, Puerto Rico, and we're discussing experiences with, and lessons from past drought and other extreme weather events, including hurricanes. We are also discussing management strategies to improve resiliency in the face of future drought and other weather events, including hurricanes.

So, Vanessa, the first thing I'm gonna start with is—And when you answer, if you could try to answer like, um, by, somewhat repeating my questions. So I'm gonna ask you, your name, you can say "My name is Vanessa." And that sort of thing. So the first thing I want you to do is just tell us who you are, your name—[speaker interrupted because another person enters the room].

So start by just saying, you know, tell us who you are. Your name, the organization you're with, your position, but also what you do. What does that mean?

Vanessa: OK. Good afternoon. My name is Vanessa Forbes and I'm a horticulture agent with the University of the Virgin Islands, Cooperative Extension Service. I basically work with the community, farmers, homeowners, schools, not for profit organizations, um, if they have issues with their agricultural commodities, their home plants. I am a little bit of a Jack-of-all-trades, or a Jane-of-all-trades.

Melody: Let me, um ask you about Hurricane Maria. We will start with that. Um, where were you when Hurricane Maria hit and to, an-, an-, an-, just kind of describe to me what was happening and also when I talk about, talk about who you were with, what was going on, the things you heard and saw.

Vanessa: For Hurricane Maria I was on St. Croix, in our home with my husband and my two children, with Marvin Forbes, Shanea [?] Forbes and Mateo Forbes. We were all walking around the house, making sure everything was all right. My husband and I had situated a little bunker in the bathroom, the inner-most room of the house, with quilts on the floor and sleeping bags, water, flashlights, um, what else? We had a little cubby in the tub for my daughter to be in, and my daughter's the oldest one, but, she decided she would hunker down in the tub and then my son was right next to me. My husband was, I was right next to my husband, and we had our phones just to be able to, if we needed to make any quick calls. My husband had a radio, and we were trying to listen what was going on via radio. We could hear the winds come through. And

you hear people say, for a tornado, it sounds like a freight train. For Maria, it was somewhat very similar. However for certain parts of Maria, we could actually feel the house vibrate. The walls felt like they were shaking, the roof sounded like it was being tugged from every direction. We could hear something thumping along the roof, that sounded like the roof was about to detach. You could, my husband and I, left the children in the, the tub and the bathroom. And we went out to check and make sure that the integrity, integrity of the windows and the roof were still intact. Um, we went into my son's bedroom which is the back-most room of the house and the door, which is a metal door, was breathing.

We could see the door inhale and exhale like someone who's having a difficult time getting oxygen in but it was literally the door was contorting and receding as the wind pushed and pulled at that door. And my husband said, "Vanessa find some wood." And I ran all around the house collecting anything that could be nailed and drilled into that wall. [laughs] Um, we collected that night about 35 to 40 gallons of water out of the house by mopping, throwing down quilts, throwing down towels. I remember at one point we tried to, we have an attic, then we tried to go in and get up there and get some lumber and I tried to remove the trap door and the Lord said, "Vanessa do not move that wood." And I'm still trying to push in and then he said, "Do not move that wood," and then he pushed me back down and at that instance, I remember thinking if I had removed that wood I would have broken the, basically the vacuum that was holding our roof on. And if I pushed that up our roof would have gone because when we came out in the morning the church that is right next to our home, had, the roof had peeled back like a banana. And it was so surreal to realize that my neighbor's house roof had also started lifting. The church roof right next to me had completely gone, except for the front part of the, the temple. And we were completely intact. So it's scary.

Melody: And even today, when you talk about it --

Vanessa: It's, [laughs] it brings tears to my eyes, because I have friends who lost their entire house roof. And I have, um, I can remember trees in our neighborhood that were really old, really big trees, that I'm like thinking would've never moved, completely uprooted. There's a mahogany tree, which is one of the strongest wood trees known to us in the Caribbean. That was ripped out of the centermost part of our road up from where I lived. And it looked like someone grabbed it, you know, like when you take a towel and you just wring it out? That's how it was. It was wrung out of the root and torn and tossed across the street. It's scary. [laughs]

Melody: So you get through the storm, your house pretty much intact, at least you still have your roof. When you go outside and look at the, the str—You know, tell me about, OK, the structure. You talked about the church, your neighbors' homes, the trees looked like, or, at least that one, the big trees. The neighborhood looks completely different. Has it changed the community and the look of the community?

Vanessa: It has completely changed. We normally had a vista. I remember, I've lived in that area for about 17, 18 years. And I always remember driving down to this overhanging canopy of trees. And now, it's just like little to no trees in that area anymore, because they're all gone. Trees that were huge and beautiful and majestic. Tamarind trees and kenep trees, all gone. So it's a completely different neighborhood, it's a lot hotter now, because those trees that provided cooling shade now just—it's now open land where the breeze is now still cooling, but it's now—it's

desiccating because it's taking all the, the water, all the moisture with it. And it's just ripping through all this open, area now that was once covered with trees, it's now bare and getting even barer as the, we haven't had, right after the hurricane, we had lots of weeks of rain. And now from since that wet period, it's gone right back into dry on the southeastern side of the island. So it's—And having a small farm, it's very disconcerting to, to know that we haven't gotten rain for such a long time. If we've gotten any rain, it's just been like a drizzle. Which after the winds come through, it's just dry again. So it's very sad.

Melody: You talked about the big tree and the structure. Um, what else did you notice about the vegetation, wildlife, or anything like that around you and your community?

Vanessa: The birds. Right after the hurricane, um, we have a small farm, as I said, and on that farm, we have about nine varieties of mango. Um, one of the trees was still in, um, fruit just prior to the hurricane. Um, which Maria left practically all the fruit intact on the tree, but Irma, um, ah reverse that. Irma left the fruit on the tree, but Maria ripped it all off of the tree. And they all were on the ground. And the nights after the hurricane, we picked up all the mangoes and we put them in bins. And we had, I swear, a whole neighborhood of fruit bats in our yard. And I never knew that a bat could walk on the ground until we came out that night, because we heard—My daughter and I heard some noises, and we went out to see what it was, it was fruit bats, walking up the side of the container to get on to the covers that we had put to get to the fruit. And, we, basically my husband, my daughter, and my son, and I, for, for the weeks after the hurricane were feeding all these variety of animals and insects. We were feeding bees by putting out sugar water. We were feeding a variety of flies, apparently, by putting out [laughs] sugar water as well. We fed, um, wasps. We fed blue pigeons, white-crowned pigeons, bananaquits, um, all different kinds of birds. And we have a actually a little video clip of these bats drunk from fruit juice, like mango fruit juice, and, and just in the tub, and they were eating, um, papaya, because we had papaya growing as well. And they're so drunk they can't move. But they've eaten so much, because there's no other food around. So they're drunk in the tub, and one of them actually got squished by a mango that was a little bit too big. And I started—I didn't cry but I felt really sad seeing this little bat, so what I did was, my daughter and I, I put my gloves on and I took them out that they, they were so drunk and I put them in a bigger flower pot and I covered the flower pot with a, an old rug that we had there so that they could sleep during the day, and in the night we let them go. And it was just like, "Look at all the, the displacement that this hurricane had caused due to not, we not understanding all the changes to climate disruptions." [laughs] It was just so amazing.

Melody: What compelled you to try to help out wildlife?

Vanessa: That's just been me apparently from since really small as far as I could remember, I've just always felt that we all have a place. And being that they didn't have any food anymore, it was like, "What could we do, my husband, my daughter, and my son?" What could we all do to make sure that everything that is in this web together could, could work together to ensure that there is a place for them still, even though it's destroyed. So it's just... [laughs] I don't know. It just came natural.

Melody: I didn't realize that you had a farm at first, so talk to me a little bit about, um, and before the storm, before Irma, before Maria. Just about the farm. What you guys grow, all the

things you grow on the farm and what that sort of that daily process is like living on, on your farm?

Vanessa: It's a tiny farm in comparison to a lot of people. It's just the backyard of our home and another adjacent spot that we just recently got, um, purchased. Um, we grow a variety of greens like kale, collard greens. We grow, leeks and onions. I love to cook, so I grow a lot of culinary herbs. I love tea, I'm British by birth, so I drink a lot of tea. And it's just been easier to grow the natural ones and be able to pick those from time to time. We grow pumpkins and butternut squash. As I said before, nine varieties of mango. Um, we have two varieties of carambola. We have soursop, um, guavas, um, and I also have, well, before the hurricane I had close to 500 vari-, 500 orchids. Now I only have about 100 to 250 of them, so I lost quite a number of them.

Melody: You were growing things. Do you sell any of these things at the market, or?

Vanessa: We have customers who we sell our excess to, and we have people who contact us when they need anything, um, specialty that we have.

Melody: A lot of the things you grow though are very island-type produce in specific. Do you have a fear that what's been going on with, um, extreme weather, hurricanes, drought, that, that will impact the ability for these, you know, native-type, um, foods to, or crops to continue.

Vanessa: I was speaking to a young man named Jimmy, earlier, who is not too far from here. [laughter] And, I was telling him about at lunch re-, um today about our, my fear for, um, seed security. Because being that we're on an island, um, getting seeds and being able to store seeds for future use is very, um, hit or miss. And so, one of the things my family has done is once we've gotten a good crop we'll store our seeds and we'll store our seeds for next year's use or for exchange with other farmers and being that we're on an island, all we are able to grow is what we're able to save and the diversity and the, um, the genetic diversity within those seeds is basically limited to what we're able to grow in our little region. And, if [laughs], it continues to get worse and we have to go outside of our home to get seeds, it may be difficult, because it's difficult and expensive to get stuff already into the Virgin Islands and, with all the craziness that's going on a lot of farmers now are afraid of Monsanto. And that's one of our biggest fears, is, we don't want genetically-modified foods and, so, we try to grow as much, open-pollinated and as much heirloom foods as we possibly can, so that, we're able to keep that non-genetically modified, um, fresh stock within our islands, um, and being able to communicate with people in Puerto Rico where we've been able to make a little bit of friendships in order to extend our reach a tiny bit further but we're still a small area, small region, so we want to be able to have that seed security, that security of being able to get all the diverse, um, crops within our, our Virgin Islands and making friendships and, and, connections with other people in other areas is important to us.

Melody: You, um, you told us your personal story of what was going on through the storm and then how your family, trying to help wildlife. And then there's the professional part of you too, you know, you've got a job to do and just, talk to me about some of those things in the aftermath of the storm once you were able to start with this I guess outreach, um, you helped farmers, the community, what were the things that people were needing, what were, were the greatest sort of, uh, needs that people had and how did you respond?

Vanessa: People were afraid of all the insects that they were seeing on their home crops, um, so they needed to know how to deal with them, they needed to know what was friend and what was foe. And so our entomologist, Dr. Amy Dreves, and myself we've been doing a, kind of a catalog of good bug versus bad bug, um, knowing, wh-, um, trying to come up with good clear pictures to show, the community what our bugs are like. 'Cause you may pull up something up on the internet and it may look one way in the States but because we're so far divided from the States it looks a little bit different on an island and so that's one of the things we've been working on. But also been working with, um, homeowners to kind of figure out how to do a little bit more water conservation. A couple of homeowners have been contacting us as to what can they do for water conservation, how can they go about doing so? Um, so we've been trying to get them to realize drip irrigation is the way to go, even if it's just a tiny little area that they wanna plant a couple of things in. Or, um, recycling, um, bottles to make, a make-shift drip irrigation is actually another really neat thing that we've been doing. Which is like you bury, you bury, a, um, gallon or liter bottle that has been punctured all the way around and it serves as like a reservoir for whatever plant you're utilizing and it, it actually works really well if done correctly.

Melody: If people don't know what that means 'cause we're, you know, this video will be for, you know, the public—What is, if you had to define drip irrigation, what does that mean, really?

Vanessa: It's basically a point source, so if you have a plant that's right here, so you have a, a collard green or a kale that's right here and you, you can run a drip irrigation which is a, they come in different diameters, so you can have a half, you can have a quarter inch which is really skinny, or you can have a half inch or a three-quarter inch depending on the amount of water you wanna deliver. And it basically puts a drip of water, at like a half a gallon per hour of water at that source. Right at the root zone, so that the plant doesn't have to search too far to be able to quench its thirst and take the water up and thus give itself nutrients. So that's what drip irrigation is.

Melody: So those were the biggest things. So the, the bugs, um, and, and, and you guys trying to help people identify friend or foe. Because you don't want to get rid of friend, but you really gotta know the foe.

Vanessa: Mm-hmm.

Melody: And then the other being the irrigation and conservation. So let's talk about drought then, since we're talking about conservation. So you were here during the 2015 drought?

Vanessa: Yes.

Melody: And I know people talk a lot about Puerto Rico suffering through the drought. What was the drought like in 2015 for the US Virgin Islands?

Vanessa: It. Was. Scary. It was hard. And it is still something that we're getting over. Even though we've had rain, we've gone back into, as I said, part of the island has gone back into a, what we're classifying as a really dry spell. Not quite drought yet, but it's getting there 'cause the earth is actually cracking and separating now. Um, for the drought, we had farmers that had to put down animals. We had animals that were emaciated. They were extremely thin, due to the fact that there was not enough forage for them. We had farmers that were crying out for ways to

be able to get water. And I applaud our government for being able to remember and recall the fact that we had several schools around the islands that had large cisterns. And a cistern is basically a large water catchment. OK, someone described it really wonderful yesterday and I thought of it, it in this way, but it was good to think of someone else, who's not from the island, thinking of it that way. A basement that you have sealed all the walls. And all the walls are basically water-tight and you can catch water in your basement. And you have pipes and pumps that allow that water to be able to, to flow throughout, wherever you need it. And so, the schools basically have those built into them in their, in their, um, basements and they catch water, but because of them needing to be, um, cleaned on a regular basis, they have not been able to be utilized to their fullest extent. And so, that water was able to be pumped out and pumped into trucks and then pumped out into farmers', um, farms, um, via large water tanks, you know, in order for the farmers to utilize them. And that was the saving grace for a lot of farmers.

Melody: What were some of the other things that, um, for instance, so that was, so, sort of a quickly, being resourceful and figuring out how to help. Were there some other, um, adaptations or strategies that had to be used that maybe you guys hadn't done before that you're doing now?

Vanessa: More feed had to be brough-, um, brought in. We had, um, the Department of Agriculture had to figure out ways to get a lot more hay, which is something that is utilized, but not to the scale it was utilized, um, during 2014 and '15, but truly during 2015. Um, we had to have, the farmers had to use a lot more molasses to add to the hay, um, as a, um, additional nutrition source for the animals. Um, farmers needed to become a lot more resourceful and work with one another in order to get, um, food and feed for their animals. Um, farmers started to reach out to—A few farmers, started to reach out to the schools in order to get, um, cafeteria scraps or like, kitchen scraps for the pigs and, and things like that, which I'm sure saved a lot of the, the pig farmers' stock, so.

Melody: What has cha-, um, I'm gonna talk drought and hurricane, but how have these weather events, um, and in—You can talk about them in separate things or not. Have they changed—Have they changed [crosstalk] any of your strategies, and especially strategies that maybe, that you're able to share with communities and how they can conserve or be more resilient, especially, when you think about, uh, the future?

Vanessa: Um, I think all communities need to have some form of water catchment or water, retention system, um, especially if it's a farming community. A lot of people rely on wells. And if you have a well that you're continuously taking from without allowing for infusion back in, especially after you're gonna re-, removing too many, too much trees, it is not a sustainable, um, practice. Um, so I have been speaking to a lot of different people as to what they've been doing in order to facilitate them having water in the future. And one of the things that they all seem to be saying is, um, they need to be able to figure out a way to collect more water. And water retention ponds have been brought up, which, in my idea, is a good idea, but it's not the, the end all. Um, I've spoken to our past agricultural commissioner about burying large pipe systems under the earth then covering them back up, and thus enabling them to be able to utilize the land on top, but then having it as a water catchment system as well as a system that could help replenish the aquifers. If they, if it's not, if it's not needed, then it can be turned into a facility where that water could be allowed to percolate back into the aquifers, thus replenishing the aquifers. Um, that is um, something that may beco-, that may come available hopefully in the

near future for the Virgin Islands. Um, a lot of churches now that don't use their, their cisterns are now allowing farmers to utilize their waters from their cisterns, um, and as well as the schools. So there's a little bit of things that are happening, and we're hoping that there'll be more in the future.

Melody: What about your farm and other farms, so when we talk about, you know, produce, not livestock but the produce, um, how has your farm recovered and, and other farms on the island, how, how's the recovery going?

Vanessa: Recovery is slow. I am still in the process of trying to find additional sources of water, because the water that we use for our farm is the water that we use for our home. And we actually had to make a decision in 2015, what plants to allow to die and what plants to keep. Um, the trees were self-sustaining because their roots were deep enough to not need to be watered. Um, 2015 was when we saw fruits that were normally quite large become tiny. And the trees actually, before the, the drought, were covered with blossoms, and then it's just, they just dropped, like 90 percent of them. And this was to be expected. Um, we have also tried using a lot of mulch. And that is something that I've tried to communicate with our homeowners, our farmers, that mulching helps to maintain that ground moisture, and you can use either plastic mulch, paper mulch, or wood mulch. And I actually use a combination of all three on my farm. And I've realized that by doing this, I actually have to water a lot less, and still get a good yield of crops on my farm.

Melody: So you're doing that, you put that into practice, you preach it to others. Do you feel like the other farmers are listening to that and, and also putting that into practice?

Vanessa: Some of them are. Um, I actually started collecting, um, shredded paper around our university's campus. And I've been teaching composting to a lot of, of the community. And so people have been trying to implement the practices. It's not always the easiest practice 'cause if you've been accustomed of something like throwing away your, your scraps for a while, you're gonna toss it in the garbage instead of putting it outside, it's—So it's a, it has to be a conscious movement towards getting that change, um, done. But a lot of people are now telling me that they've started collecting their shreds, and they're starting composting, and they've started, um, looking for—But we actually need for them to start bringing in a couple of other things, that would help better facilitate the conservation effort for water. Um, the landscape fabric I use is actually a heavy-duty landscape fabric and currently, no one in the Virgin Islands carries it. So we normally have to bring this stuff in, which costs an arm and a leg. And so, if we can get either the Department of Agriculture or the, um, the home repair stores to bring this stuff in, it will actually help the farmers a lot, and the homeowners, a lot more towards conservation.

Melody: Vanessa, did your parents farm?

Vanessa: My grandparents.

Melody: Your grandparents farmed. So tell me, um, what—If you think back to your parents and your grandparents, and if you can remember past storms, and the things that your parents or grandparents would do, or things that you would hear your grandparents say about storms or farming. Can you think of any of those things that, like words of wisdom they had, or ways that they were able to predict storms, or watch the way animals or plants were behaving?

Vanessa: So for prediction of storms, I can remember I was really little for, um, Hurricane Hugo, and my grandmother and my grandfather would always watch the animals and the trees. And my grandmother would always say that when the rats, when they were moving in a funny way, or the birds were moving in a funny way, she would say, "We're going to have bad weather." And so said, so done, when Hurricane Hugo happened. My grandfather would watch the trees, 'cause he was the farmer, and he would farm, um, we had about 17 acres when I was little, and he would watch the avocado trees and the mango trees, and the different fruit trees, and as they bloom, the huge blooms I remember, back before Hugo, we had an abundance of avocado and an amazing amount of mangoes. And it was just like a bumper crop of everything at once. And my grandfather said, "We're gonna have a bad hurricane." And Hugo came. And apparently, the same thing happened for Maria. The year Mar-, the weeks before, or the months before Maria and Irma came in, we had mangoes. Oh my god, we were giving away mangoes. We had so much mangoes around the island, we couldn't sell the mangoes, it was just like, everybody was putting boxes of mangoes by their gates, "Take, free mangoes." The same was for avocados, the same for almost every fruit that came in. Fruits that normally wouldn't normally come in at that season came in. And we knew that was a sign that there was going to be a bad hurricane.

Melody: So you were kind of anticipating it because you did see that.

Vanessa: Mm-hmm. I, [laughs] I was, I was happy for the bumper crop but I was scared when the bumper crop came in.

Melody: So there's something to that when these people from generations and generations ago have seen these patterns.

Vanessa: Mm-hmm

Melody: You talked about some of the things you're doing, some of the things the other farmers are doing, that they're starting to, you know, develop these other practices. Do you feel encouraged, um, that enough is being done by communities, or do you think there's so much more communities need to be, to do to be resilient and ready as a habit?

Vanessa: There's a lot more that needs to be done. Um, there needs to be—OK, right now, within the Virgin Islands, I think that the government and the department is doing a, OK job. Um, we have, and I'm not sure how Puerto Rico is dealing with it, but we had a lot of debris after, that was generated after the hurricanes. And all that wood, wooden debris, all that, those leaf litters, and all that destruction left behind by the hurricane, those trees should be shredded and mulched and all that nutrient returned to the island. Right now, there are, I forget the number, but there are piles and piles and piles of branches and debris in different areas on all three islands. And I know that there is, has been a movement to shred and distribute some of it, but there's a lot. And it's said that they may move some of it off of the island, but there are people who want it and who are willing to store it and utilize it on their properties. And so I think that there needs to be a bigger move and a bigger push towards educating people, because there's, there's, there are fallacies out there that if you put mulch on your property, you're gonna, you're gonna be inviting pests, which if someone—if something finds a home, it's gonna live there. But if you are educated and, um, or seek out the education, say, call Department of Agriculture or call the University Cooperative Extension, and find out what can be done with the mulch, and find out the proper

way to utilize the mulch, then that means you are making a movement towards understanding and doing the best practices for using that mulch.

Melody: What do you think is a good way to help the community learn and to get out the information about best practices? Do you think there's still sort of a, uh, um, a challenge in communicating these things to the public?

Vanessa: There is, um, because there—Our department is really small. And it's made up of like, probably about, on St. Croix, we're probably about four of us. And the community at large in the Virgin Islands is probably a hundred and—I think it's 100,000-plus. And so between St. Thomas, which probably has the outreach for agriculture of about probably four, and on St. Croix probably four, that is not sufficient of us to get all that information out. So we've been trying, we've been holding classes, we've been working with different agencies, and I think the collaboration between the different agencies has served to get some information out. And, um, I am not a Facebooker, by no means necessary am I a Facebooker [laughter]. But my husband is. And so whenever we put out a flyer that we're going to have a workshop, or we're going to have some form of informal or formal, um, training or whatever, we post it on Facebook. And the university also has a Facebook page, Cooperative Extension also has a Facebook page. And so we put—We try to use those tools to get that information out there. But there's still work to be done to get that information out there, and we're looking for and willing to work to get that information out there. We just need to figure out what it is.

Melody: Vanessa, you were telling me earlier about a man on, I think St. Croix. He's on St. Croix, he's been here for a very, very long time. You can say his age but don't say his name, but, um, what are his thoughts on this, and does he talk to you about or seem to think there is a change or is this sort of patterns he's seen all his life? Or have you had conversations with him about this weather?

Vanessa: I have not had conversations with him but I've spoken with another one of my colleagues and he has had conversations with him, and he has said he remembers some of these actions happening prior to a storm and he's watched some of these things happen over the years. He's 101 years old, and he has seen these changes come and go. Because he's seen these changes in the trees and in the organisms, the animal organisms, then he's been able to change or implement practices which has helped his farm because he actually has one of the best-looking farms for forage on the island. And I work with another farmer, he's also in his, I think, his late 80s, early 90s, and he also has a farm where he raises—He has a mango farm/fruit orchard, and he raises goats and pigs and horses. And he also has his farm set up where he has rotational plots for his animals to graze in. And his forage looks like an ocean of green which I wish I could just float over when I pass on his farm. It is just amazing, and if these farmers could do it and they're so old, why can't the younger farmers learn from that?

Melody: They're adapting, these older farmers. They're adapting to the situations as they happen.

Vanessa: They definitely have. And they have, because they've lived it, they've learned it. And they have changed. It's time for our younger ones to do the same.

Melody: To what extent do you consider drought when planning for the future, you know, for your professionally?

Vanessa: Drought is front and foremost in my head nowadays. And when I go out to teach the farmers, or to teach the students in the schools, or to teach the homeowners, I always try to teach them to remember that drought, is, it has always been a part of us, but we seemed to have forgotten it, and now that it's slapping us back into a realization that it's still here and we need to remember it, it's now, first and foremost, in my mind to keep teaching them ways to, again, conserve water. Be mindful of the fact that drought is not only just from the lack of rain, but it's this high amount of wind that we're getting that's drying out the, the atmospheric moisture. And we also have to also have to remember the Sahara dusts which are very present in our lives on a yearly basis again.

Melody: When does the Sahara dust come in? Is there a particular season?

Vanessa: I- they say there is, but I guess it's more visible at some times than others. But I have friends who are actually, they have allergies to it, and they tend to see it, they tend to notice it when their, either their eyes start getting puffy [laughs] or their nose starts running. And so they're like, "There's, um, Sahara dust." But there are times when you can just—Even in the night, it's present, you can see it in your headlights. So I'm not sure, I'm not exactly sure of the date, the dates for it, but we know when it's in, in the area.

Melody: You see it more now than you did back when you were younger?

Vanessa: Yeah, yes, a lot more. Or, I realize it more now because I know it's there.

Melody: What, if you um, when you think about extreme weather events of drought, floods, hurricanes, wildfires, all these different things, what type of event are you most concerned about? Again, looking into the future, what most concerns you and why?

Vanessa: [sighs] The droughts more so than floods, because with the floods, we live on an island, and so we know, even though it affects a lot of areas, it drains off. The droughts, because we won't be able to—We already, in the Virgin Islands, we import 98 percent of our food. And a lot of people are trying to grow some portion of their food now, which is why I started farming a little bit more, and trying to know where my food comes from and what's in my food. And if the drought continues to get stronger and stronger, it will mean we have less and less water, and more and more people sucking water from the aquifers to their wells or applying for more wells to suck more water from the aquifers. So the drought scares me [laughs] tremendously, because then I'm gonna see huge trees that should be able to reach deep waters, fall over like they did in 2015. Even more so.

Jamie: Could you—So this was a, the Sahara dust was a new concept to me coming out here. I learned, I actually learned a lot about it at this workshop looking over the materials for it, so. For people who don't live on the Islands, who don't experience this, would you mind describing what the Sahara dust actually is?

Vanessa: [sighs] Sahara dust is dust that actually comes from Africa. And it's really, really, really fine particulates of sand that's in the atmosphere, and it can come with all manner of

pathogens and viruses mixed into it. And you can just, in the day, you'll just see this ominous haze come over the island, and it will be a beautiful, sunny day one day. And then it will be a hazy, murky, dreadful day the other. And it's just like—For me, it's like my sinuses feel heavy, and I feel like I'm breathing through a thick layer of, of, um, paper over my face, and for my friend, he, his eyes puff up like pillows. [laughs] He's a black man, and his eyes turn puffy and red and it sounds like—It's not funny, but I'm laughing because I can imagine his face. [laughs] I can imagine his face. And then I have another friend. She just, her nose, her sinuses just gets unbearably difficult to breathe. And so they actually have to stay home from, from work for a couple of days or, or they're, they're drugged up on, Benadryl or Claritin in order to be able to function. And it's not pleasant, because it's something that—Like pollen is from trees and you can figure out when that's coming in, but because of the climate change, apparently, the Sahara dust has been changing it, its, its times that it comes in. And it will come in like really, really heavy unexpectedly to us, because they haven't been able to tell us like, um, it's coming in like a week in advance or something, like when the pollen is changing in the, in the seasons in the States, so we do not have a whole bunch of forewarning when it's, it's coming in.

Jamie: OK. That's terrific. Um, so yeah, I guess. So just to, just to clarify for audiences that don't know this, how does it get from the middle of the desert all the way--

Vanessa: It just follows the currents. Just like a hurricane, it's just, in the high atmosphere and it just floats on over. And I saw a depiction of it one time in, in like a, I guess a weather imagery. And they just had it floating on the upper air current, and it just sauntered on down from over by Africa, just like the hurricanes do, and it came over us. And it, it's not actually just localized, it's actually in a huge area. But because we're, we're small, we can just see the entire area just covered by this cloud of haze.

Jamie: Terrific. That's great. Thank you very much.

Vanessa: You're welcome.

Jamie: Um, thinking about, you know, how—Thinking, thinking back to how we're seeing these extreme weather events, or like this conference about these extreme weather events, are we observing, or have you observed any changes in extreme weather events, be it hurricanes, droughts, anything, anything else over the years, or do you know people who have? Is it, have you seen any, any differences?

Vanessa: We have had a section of rainy seasons where we would get like three, four, five days non-stop rain. And it happened like two or three years in a row, where it would just start out one morning and go for five days, and you'd be—If you're driving, if you happen to own a truck that's high enough to drive through some of the roads, 'cause as I said before, some roads would actually become rivers when we have heavy rains, you would even have such strong downpours that you cannot see, not even where your headlights end. You're driving, and so you're only seeing your windshield, no further. And that had happened to me twice when I'm driving on the road, and I'm having—I'm driving my husband's truck. My husband is six foot four, and so he needs a high truck, and I have to literally hold on and pull myself up into the truck. And I'm driving, and I'm, I know that I'm good with height and distance ahead of me from any other car because I, I hate tailgaters. So I'm, I'm fine, but I'm like, "Oh my God, I am so terrified," because I slow down to a creep, because I cannot see any further than my windshield. And this has been

happening, and I've seen it over the years, and it's scary, because it's gotten progressively worse. And, so, right now, as I, as I was saying earlier, we've lost a lot of trees and a lot of roots in the ground that would hold the land in place. And so, because of these—We haven't had them this year, but I'm afraid that we do get one. Because if we do, we're going to have really bad landslides. And a lot of people are not accustomed to seeing hillsides fall and move like water, but it's possible.

Jamie: Last question that I have is actually related to something that you talked about right at the beginning of your interview, related to genetically modified, to GMO's. I was just wondering, so why is it that, um, that there's generally a wish to avoid, to avoid having them sort of come into the island and come into the ecosystem?

Vanessa: A lot of people [laughs] hate Monsanto. I don't know if you know who Monsanto is, but Monsanto is a seed company that has gone in and they've put—They have, [laughs] this is how we see it. They've gone in, and they've messed with nature. They messed with God's work, and they have taken out, and they've put in. So they have been able to make um, glyphosate Roundup-tolerant, different things, corn and all kinds of different things. And glyphosate in and of itself is, is a scary product because it kills grass and it, then it becomes inert when it hits the soil but who else, who knows what else happens when it hits the soil. And a lot of people have been using it over the years and now we are hearing that it is a carcinogen. OK, and so Monsanto has bred a line of people who no longer trust them after they've gone after farmers for having, um, grown a crop and their crop has become better than theirs. So now they are going after the farmers and, and claiming that they have proprietary rule over the farmer's crop because their genes from their crop has crossed with the farmer's crop. And so, being that a lot of our farmers on our islands are small and they've heard these stories, they have come to mistrust, and I think rightfully so, they have come to mistrust Monsanto because if you're a small farmer who cannot afford to put, to buy proper amounts of seed and you're saving your seed, and you can hear that Monsanto may come in and sue you because your seed has crossed with their seed, and even though your seed is your seed 'cause you've saved it over the years. But Monsanto with all their money can come in and sue you for your seed.

[pause]

Vanessa: [laughs] What then? So, that's why Monsanto is a no-no and GMO seeds is a definite no-no within our Caribbean area.

Jamie: That's very interesting. I have never heard of that before. That is--

Vanessa: It's actually very widely, yeah, a lot of farmers, um, have, have you ever looked through a seed catalog?

Jamie: Yeah.

Vanessa: OK. Have you ever seen that it said GMO, non-GMO, heirloom and open-pollinated?

Jamie: Yeah, yeah.

Vanessa: 90% of our farmers go for open-pollinated or, um, heirloom seeds. And, the organic seeds they would like to buy, but organic seeds are normally way up there in cost, so they can't afford it. So we just tell them, "Go for open pollinated, go for heirloom seeds. That way you can save your own seed."

Melody: So is there a big push for, for saving the seed. Is there--

Vanessa: We're trying to make a bigger push for it. Because a lot of farmers--We're trying to teach them how to save their own seed. They may have saved a pumpkin seed or two over the years in order to keep a variety that they, they've grown, and that's been productive for them. But they don't know how to, that this, the seed, has to be turned over after a couple of months because it loses viability after a couple of months. The smaller the seed, the quicker it dies. And so, we're trying to put information out there so that the farmers can learn this information and then teach their families or continue passing that information along.

Melody: Are there some farmers and families who have been able to save the seed over, like, generations?

Vanessa: I am sure there are. I know we have a variety of pumpkin that I've had for years. Like, a very long time. It came from St. Kitts and I still have it.

Melody: So, what we're doing here is, I feel like we're saving stories.

Vanessa: Mm-hmm.

Melody: Just like, sav- the seed's seed have their stories too if they started with the family.

Vanessa: Mm-hmm.

Melody: So you have seeds from St. Kitts?

Vanessa: Mm-hmm.

Melody: That's pretty amazing.

Vanessa: Yes.

Melody: And those would have been your grandparents'?

Vanessa: My grandfather's. So, my mom had it, and now I have it. And my mom does, if she didn't, if I don't say this, she'll probably strangle me if she ever had to see this, but she also, she gardens as well.

Melody: And then you would hopefully pass it along to your children?

Vanessa: Yes, I will, hopefully.

Melody: Is there just anything else? And Jamie, do you have another question?

Jamie: Uh, no. That was, that's, uh, me--

Melody: You're good?

Jamie: I think that's me done. I've, oh—Gonna ask, I was gonna ask what is drought, 'cause I've been doing that with everyone. But that's, uh, you can handle that at the end. [laughs]

Melody: So—Do you have a question, Jimmy? Is there something you'd like to add?

Jimmy: Um, actually, yea. Um, how do most of the farmers in your community get their information about how to care for their, themselves and their produce?

Vanessa: A lot of farmers actually have [laughs] learned from trial and error throughout the years. And some of them actually, they're learning from us now. A lot of them are the younger ones who are—We're trying to raise a new generation of farmers. And so, a lot of the younger ones are learning from us, but in the past, the older farmers have learned through either trial and error, or from what they've seen their farmer friends do, or their farmer family do. And that's how they've learned about, um, gotten most of their information. We actually have some farmers who are very anti-new things. So, anti-drip irrigation, anti-, um, pesticides, anti-, uh, or new pesticides. They're, they are holding on to their old pesticides, which they see that they work. However, we're trying to teach them that a lot of the new pesticides [laughs] are really dangerous. And some of the newer ones, though they do not have the residual effect, that's what we want. Not to have that continuous residual effect because if that residual is on your food and you're harvesting it, then you're consuming it. So, we're trying to teach all of that right now. And that's how we're hoping for them to get their information. But it's still a work in progress.

Melody: Good question. Thank you for that. Is there anything else? Like a message you would like to leave that our questions didn't really address but you said, “You know, this is an important point that I wanted to make and they haven't asked me about it yet.” Anything like that you can think of?

Vanessa: Wells. And I know I've mentioned this before. Being that we are in a island situation, wells are a good source of water. But if you continually take water without allowing for the water to be re-, um, I keep forgetting the word. But to allow the aquifers to revitalize themselves through rains being filtered down through the roots, by the roots of trees to, um, the runoff, we will not have good sources of freshwater. We will have saltwater inclusion in our aquifers, and that means our land will be poisoned and we won't be able to grow our own fruits. So, takeaway is, if you're going to drill a well, monitor how much water you take, because you have a well does not mean you have an unlimited source of water. And if you know anyone who does have a well, also inform them to monitor the amount of water they take from the wells, because it affects us all.

Melody: How does someone know when to stop, though? Is it kind of just like lawns, I'm going to take as much as I need?

Vanessa: That's basically what it is right now. And that's why it scares the bejesus out of me, because if we are saying that we're gonna start feeding ourselves but we poison our soil, then we are hurting ourselves as we go along. So it's, it's almost like walking on thumbtacks continuously.

Melody: So can't just be all for--Self.

Vanessa: Nope. It's all for one and one for all. [laughs]

Melody: Vanessa, you are fantastic!

Jamie: Alright, Vanessa--

Jamie: Final question, yeah, final question. Could you, in your own words say, just tell me what is drought?

Vanessa: Drought, in my opinion, is not only the absence of water, but the loss of the ability to grow our own foods. And it means, being a person who grew up growing her own food, it means the loss of [laughs] independence and love of the land to me.

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