

MIREI ENDARA HERAS



JOHN P. McNUITY

PRIZE

Such overwhelming realities weigh heavily for Mirei Endara de Heras, who as Minister of the Environment traveled across Panama marveling at its abundant natural beauty and resources. But she also experienced long government timelines and silos that prevented efficient action on seemingly easy-to-solve local issues like trash piled on city streets.

Because Panama generates almost double the garbage of any other country in Latin America, the problem felt personal.

“Panama City generates about 4,400 tons of waste every day,” Mirei says. “Of that waste, almost 30% does not get properly collected. A lot of that garbage ends up in our rivers, and if it’s in our rivers, it goes to our oceans. 90% of the marine species of the world have already been affected by plastics. So what do we do about this?”

Rather than wait for someone else to suggest a solution, Mirei decided to act.

“EVERYONE CAN MAKE A DIFFERENCE. WE ALL HAVE THE CAPACITY TO MAKE SOCIETY BETTER. WE JUST NEED THE COMMITMENT AND CONVICTION TO FIND SOLUTIONS TOGETHER.”

In July of 2017, three months after she left her role as Minister of the Environment, Mirei met with Stanley Motta, an investor and philanthropist whom she had known for many years. Stanley had introduced her to the Aspen Institute and the Central American Leadership Initiative (CALI), where she had been a Fellow and developed a network of peers throughout Central America who have continued to support her along her journey. During their meeting, Stanley received a phone call from someone who wanted to address a concrete local issue of the kind Mirei had craved during her time in government: There was trash accumulating in the nearby river and parading all the way into the ocean, and it was an eyesore, a nuisance, and a health risk.

Mirei listened to the conversation with recognition and growing excitement. She knew the river from regular walks in that

LEADERSHIP CASE MAREA VERDE

It’s said that by the year 2050, the world’s oceans could contain more plastics than fish. Although the United Nations is working to negotiate a legally binding global treaty to end plastic pollution, such measures will not create change overnight. Ocean plastic is on pace to double over the next fifteen years, which represents a grim future for not only our waterways and sea life but for human health. Microplastics have already been detected in human blood, and evidence suggests that a variety of chronic diseases may be related to microplastics exposure.

ABOUT MIREI

1994 Became Administrator of the Panama Environmental Authority

2017 — Founded **Marea Verde** with a group of neighbors

1994 Master’s from Yale School of the Environment

Fellow and Inaugural Executive Director of the **Central America Leadership Initiative**

Led the creation of Panama’s Ministry of the Environment, and served as its first Minister from 2014-2017

2023 Winner of the McNulty Prize

neighborhood, so she understood the caller's preoccupation and why they wanted Stanley's help. He wasn't available on the date of the scheduled meeting, but he offered to send his nephew instead.

Mirei said, "Oh, I want to go to that meeting, you can send me."

And she went.

"That's how I got involved," Mirei reflects. "It was completely coincidental. But you know, nothing happens by coincidence. I think that I was meant to be in that meeting at that time, so I could hear that conversation."

Throughout her career, Mirei has made a practice of noticing such encounters and building upon the opportunities they present. A similar encounter — a conversation with a school friend — had led to her first government appointment in 1994. So it is fitting that her time in government was bookended by another chance encounter wherein she followed her instinct to seize an opportunity that sounded right. Both times, nimble decision-making changed the trajectory of her life.

A COMMUNITY-DRIVEN APPROACH

The meeting of neighbors to discuss the river trash problem eventually formalized into Marea Verde, led by Mirei—a non-profit working to address plastic pollution and waste in Panama's rivers and coasts. Awareness education, behavior change, technology, and data collection are all part of Marea Verde's work, as is Wanda, a first-in-Latin-America solar-powered water wheel that collects trash from rivers before it reaches the sea. Artificial intelligence and machine learning help identify and quantify trash, ensuring that between 30 and 50 percent goes to recycling instead of landfill. Beyond its tangible impact on the local environment, the resulting data has far-reaching effects, influencing policy, communication, and education decisions within Panama and worldwide.

“I'M ALWAYS TRYING TO LOOK FOR THE OPPORTUNITY TO MOVE FORWARD. AND ALONG THE WAY, WE CREATE SPACE FOR OTHER OPPORTUNITIES, ALLIANCES, OR WAYS TO PROGRESS.”

Wanda is a charismatic, visible object, and symbolizes Marea Verde's vision: a groundswell of local action and cross-sector support, gathering momentum that eventually becomes an unstoppable force for sustained environmental health. It's fitting that the translation of "Marea Verde" is "green tide."

The Juan Diaz River where Wanda is situated spans 144 kilometers, and with one-quarter of Panama City inhabitants living in its watershed, plus about two million migratory shorebirds, it is an important river for the region. Thus, the Juan Diaz was chosen

ABOUT MAREA VERDE

- Marea Verde is a non-profit that works with communities in Panama tackling the issue of plastic waste, particularly in rivers—a leading cause of ocean pollution.
- Their holistic approach includes Wanda Diaz, a hydraulic and solar-powered water wheel; data collection, advocacy and policy reform with government, the UN and other stakeholders, and programs to drive education and behavior change.
- They are the first to successfully replicate the trash interceptor wheel developed in Baltimore, Md., and bring the technology to Latin America.
- Since 2017, they have collected over 1.5 million pounds of trash, implemented waste collection and reduction programs, and educated and trained over 11,000 people.
- Marea Verde's data and interventions are used by communities to advocate for municipal, state and global plastic pollution programs and policy efforts.

strategically for Marea Verde's first trash-collecting intervention because of its great potential for impact—it is the largest river with the most tributaries, and it borders the protected Panama Bay, an important wetland ecosystem for migratory birds. Mirei's vision is that Marea Verde's community-driven approach will have a regional impact, and that ultimately the Juan Diaz will revert to a clean, healthy waterway.

"My recollection from when I was a child," Mirei says, "is that we always saw some trash on the streets, but not to the magnitude we have today. It's a complex problem and there are many reasons, but one is that the use of plastics has grown exponentially since we started using it as a commercial material. The production of plastics has tripled since the 1950s, and it will triple again between now and 2060. So we're talking about a massive amount of waste that does not get absorbed or dissolved by our environment over hundreds of years."

Her time in government and leading The Nature Conservancy in Panama deepened her understanding of the different points of leverage, the networks of influence and decision-making around environmental challenges, and insight into the scope of the problems. Mirei understood both levers for change and impediments to change; namely, siloed thinking that doesn't enable lasting and holistic solutions.

"Seldom do we look laterally. Often, we're only looking at our mandated responsibility," Mirei says. "For example, during the severe drought in 2016, the National Institute of Potable Water was trying to dig wells for water, and the Ministry of Agriculture was digging from that same aquifer, maybe 100 feet apart, for cattle. They

were competing for the same water and using very different drilling mechanisms without any coordination and at high expense. One could contaminate the aquifer; the other was for human use. Yet, the economic, social, and environmental benefits of coordination were so evident. Things like that happen all the time. We could just talk to each other and not waste millions of dollars undoing with one hand what has been built with the other.”

LEADERSHIP AND LEVERAGE

Mirei doesn't separate natural and social justice—she knows that their flourishing is intertwined. In Marea Verde, as in her government work, she understands that to move things forward, strong relationships are key. Talking to people enables her to see not just obvious problems, but the problems' root causes. This awareness enables novel solutions tailored to individual communities' needs.

“Let's say garbage is not your number one problem, but having a safe path for your kids to go to school is,” Mirei says. “They walk by different areas that have a lot of garbage, that are not safe as a result. So how can we create a win-win situation in all of these different conditions? Improving a bridge's safety, maybe. Things that people will value in the community, but that will also help our mission of having a cleaner neighborhood, or better ways of disposing of garbage or improving recycling habits.”

Mirei is cautious about boiling-the-ocean thinking. Rather than assuming they should, or can, mend an entire broken ecosystem, like tackling the entire complex garbage/plastics value chain, Marea Verde focuses on single points of change. They are clear on their lever. Believing in the power of the individual to enact change is crucial, but success is amplified when there is collaboration across sectors: governments, industry, and community, so they are careful to hold doors open for other actors.

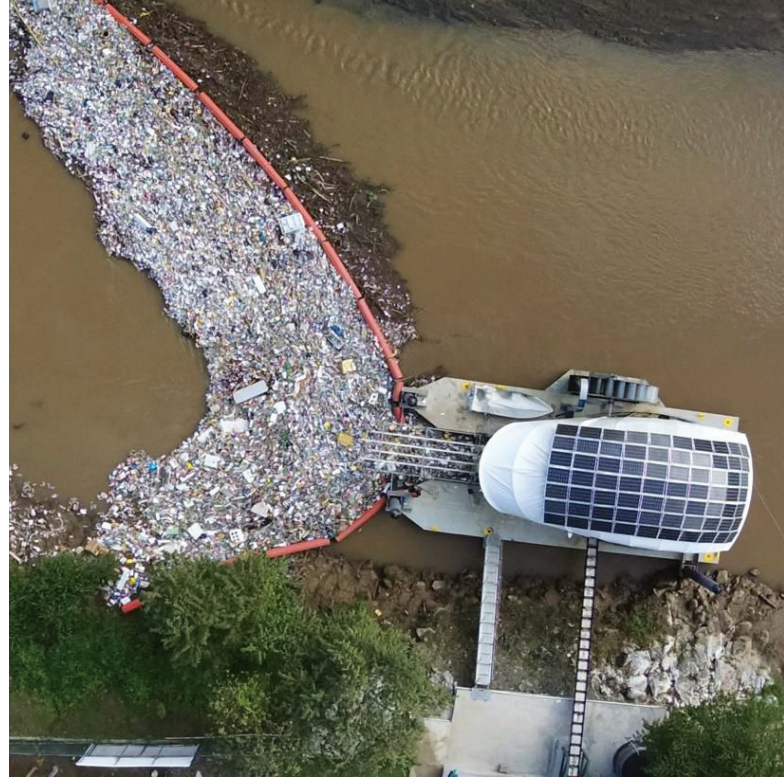
“Everybody feels territorial about their area,” Mirei says, “so you need to be non-threatening, to coordinate, and to persuade them that this is good for everybody. A win-win for all the institutions, and a better use of resources.”

Leadership, for Mirei, is about having the courage to understand one's personal leverage point, and she makes decisions in ways that allow her and others to take the next right step. She favors the pragmatic and the specific over the conceptual and dogmatic.

“I'm always trying to look for the opportunity to move forward,” she says. “It may not be the best-case scenario, but it's a step in the right direction. And along the way, we create space for other opportunities, other alliances, or other ways to progress. Having that unity, that common front, helped us take little steps, but little steps eventually started getting to be bigger steps, and now here we are.”

THE NEXT RIGHT STEP

Mirei believes that solutions must be developed in partnership with the communities affected, and that those communities are best suited to carry innovations forward. Scaling for Marea Verde doesn't mean replicating exactly what they've done on the Juan



Diaz in every other river, but learning from that experience and working with other watershed communities to determine the best path. There are seven major watersheds in Panama City, but Marea Verde's operations will look different in each location.

“I am not sold on replicating exactly the same, because every river and community is different,” Mirei says. “There are different conditions based on communities, people, authorities. We start with the most basic approach, which also carries the least risk: to start by learning about each of these new communities and watersheds.”

One community, Rio Abajo, is besieged by flooding, and Mirei and her team know that working successfully there will mean addressing the flooding problem first. So they are starting by investigating construction permits to dredge a portion of the river.

In another community, Costa del Este, a bigger concern is property values and walkability, so the Marea Verde team is workshopping a proposal for a beautifully designed modern bridge that will enhance safety and walkability while also creating a beautiful and valued community object. The bridge will serve a third purpose: to hide their capture system so that garbage is hidden from view. An elegant solution to several specific community problems doesn't come easy; the bridge may be more expensive to implement than their solution in the Juan Diaz, Mirei says, “but then again, if that's what you need in order to get that social licensing from the communities, that's very important. If you cannot address that, it will never work.”

Marea Verde might bring their model to other cities someday, but scaling geographically isn't a focus until they achieve their local goals.

“Everybody can make a difference,” Mirei says. “You don't have to be a world leader, or a famous influencer. At Marea Verde, we don't

think we're heroes, and we don't think we're different from anybody else. We're just trying to bring ideas that are different and out of the box to our community, but there's nothing special about that. It's about the commitment and the conviction to at least try."

In 2023, Marea Verde began surveying community groups to discover if there had been any perception change during the course of their work together. To create trust and open lines of communication, they pledged to share survey results back with respondents. In January 2024, they made good on the promise by

hosting a community workshop to share their findings and future plans. More than 200 people attended. Mirei was touched to see that not only were communities engaged with the information, they were eager to lean in and co-create the next solution and vision.

"Having had this initial eye-opening experience of all the things that they could do with their communities," Mirei says, "and the perception that communities have of their surroundings and the garbage and the river, now they were saying to us, 'How can we move beyond our recycling? Beyond our cleanups? What's the next step?'"

THE PLASTIC CRISIS

GLOBALLY



Global plastic waste generated annually

By 2060, that number will increase to 1.2 billion tons



IN PANAMA

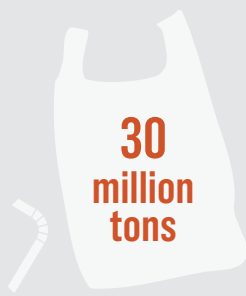


Waste producer
in Latin America

Uncollected daily
waste in Panama



16% Panamanians live
on the Juan Diaz river,
where Marea Verde
operates a trash wheel



Plastic waste
in oceans.

Even if pollution
halted today, river
plastic will leak into
the ocean for years

Seafood, drinking water,
and even breast milk

Microscopic plastic particles have
been detected in the entire food chain.
Communities without waste manage-
ment are especially exposed to toxics



Sources: IDB Plastic Waste Management and Leakage in Latin America and the Caribbean 2020
Resilient Cities Network: The Barrier of Garbage in Panama City 2021 / OECD Global Plastics Outlook 2022