



# The Next Ten Years

Annual Report '22



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Photo credit: Fátima Almeida 2022. Location: San Cayetano, San Luis De la Paz



## Mission Statement

*To improve human health and community well-being through adequate and affordable access to clean water.*



# Letter from the Director



Dear Friends of Caminos de Agua,

This was a landmark year for us at Caminos de Agua as we celebrated our 10th Anniversary of working on water issues.

We are deeply grateful for the involvement and support of our growing community in making this critically-needed work a reality for so many at risk in our region and beyond. Our water crisis is complex, affecting hundreds of thousands of people regionally – and tens of millions of people all across Mexico – requiring the vast network of allies, water advocates, and other collaborators we've built to make a meaningful impact on our water reality.

Through this matrix of collaboration, **we were able to reach more people, and create more clean water access, in 2022 than in the previous five years combined!**

Together with our core community and organizational partners – including **INANA, A.C., CUVAPAS, SECOPA,** and the **San Cayetano Community Center** – we have continued to expand clean water access through rainwater harvesting, sanitation, and filtration solutions to the people most affected by our water crisis. In this second full year of our joint project – Agua y Salud (Water & Health) – together we **worked in 52 communities, building a staggering 377 large-scale Rainwater Harvesting Systems – representing nearly 97 million liters of clean water storage over their lifetime.**

At the end of 2022, we were ecstatic to find out that we were named the **First Prize Winner of the RELX Environmental Challenge** for our **Groundwater Treatment System (GTS)**. We brought our first GTS system online over a year ago, and it's now fully owned and operated by a group of women from the rural community of Los Ricos.

This innovative technology is capable of removing both arsenic and fluoride from groundwater efficiently, economically, and at the community scale. The RELX award gave us not only recognition but also critical seed funding to help bring GTS to scale in 2023.

We want to sincerely thank both the institutional and individual stakeholders that have provided their experience and resources to bring these initiatives to fruition and help develop strategies that have allowed us to dramatically grow our programming, and our reach, this past year. We are extremely grateful for the collaboration of foundations like **Gonzalo Río Arronte** and **Alstom**, corporate sponsors like **Rotoplas** and **RELX**, government partners like the **San Diego de la Unión Municipality**, and especially the **hundreds of individual supporters** who made our work possible in 2022.

I am constantly amazed, and humbled, by the talent, passion, and endless dedication of the Caminos' team, which includes our staff, board, and volunteers. Thank you all for making 2022 our most impactful year to date!

So, on behalf of our entire team, as well as our greater network of partners, we wholeheartedly thank all of those who helped make this world a better place for so many people this year. We simply cannot do any of it without you.

Saludos,

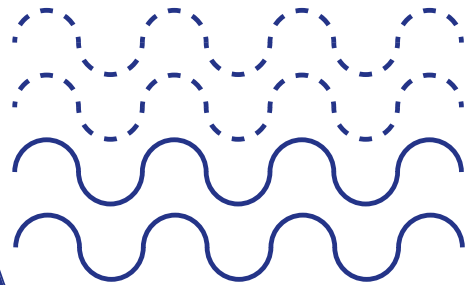
Dylan Terrell  
Executive Director

P.S. To learn more about our First 10 Years of work, watch our new video by [clicking here](#) or scan the QR code on your phone >



# The Scope of Our Water Crisis

**Aquifer Declining**  
.....  
▼ 2-3 m per year



**Arsenic & Fluoride**  
.....

up to 23 times higher than limits



**+700,000 People**  
.....

served by the Upper Río Laja Watershed

**2.2 Billion People**  
.....

without adequate access to clean water worldwide





**Photo:** A view of our watershed – The Upper Río Laja – from Bernalejo, San Luis de la Paz, Guanajuato.

The Upper Río Laja Watershed stretches across seven municipalities in northern Guanajuato State in Central Mexico and is a microcosm example that illustrates many of the extremely complex water quality and scarcity challenges facing Mexico, as well as many other parts of the world, today. Almost all of the water consumed in this region comes from a large underground reservoir known as the Upper Río Laja Aquifer, which serves more than 700,000 residents across several thousand distinct communities, rural and urban alike.

Our aquifer is declining at an alarming rate, from 2-3 meters per year – **some of the most overexploited groundwater in the world**. The primary culprit is industrial-scale agriculture, which uses 85% or more of our water supply. As a result, community wells are drilled hundreds of meters deep to reach the water table. Every year, more community wells dry up and, in some cases, literally collapse in on themselves. We have seen first hand how an entire rural community's water supply can go dry overnight, leaving hundreds of families without any water access.

Further complicating the issue, the water that does remain is often **contaminated with arsenic and fluoride – up to 23 times the World Health Organization recommendation**

**for arsenic**. These extremely hard-to-remove contaminants are closely linked to dental fluorosis, crippling skeletal fluorosis, chronic kidney disease, cognitive development and learning disabilities in children, skin disease, and even various cancers. Entire generations are being plagued with the negative impacts of arsenic and fluoride in their drinking water, and, worst of all, the most acutely impacted are children as their bodies absorb these contaminants at a much higher rate.

This is a serious public health crisis for our region and beyond. Roughly, **2.2 billion people – or more than a quarter of the entire global population – lack access to clean water. Upwards of 300 million people, with an estimated 21 million in Mexico alone, suffer from excessive levels of arsenic and fluoride in their water supplies**, with few appropriate solutions available to remove these problematic contaminants. The accompanying social and economic impacts of this crisis are almost impossible to overstate. Innovative, low-cost solutions are desperately needed to address both the social needs of at risk communities who are disproportionately affected by these modern water issues, as well as the increasingly complex technical water challenges we are now facing in the 21st century.



## Rainwater Harvesting

Constructed **377 new, large-scale, Rainwater Harvesting systems** – creating a combined **97 Million liters (>25 Million gallons)** of clean water storage over their lifetime – nearly doubling our impact from 2021



## Groundwater Treatment System

Our first Groundwater Treatment System (GTS), which removes arsenic and fluoride at the community scale, **won First Prize at the RELX Environmental Challenge**



## Aguadapt

Distributed or sold roughly **1,400 Aguadapt Water Filters** in our projects and to vulnerable communities with partner organizations in Oaxaca and Chiapas, Mexico



## 10th Anniversary

**Celebrated our 10th Anniversary** of working on water issues, with over 130 supporters, who came out to learn about the future of our work





## Education & Training

Held **40+ Educational Workshops, and extended technical trainings**, throughout our region in both rural and urban settings



## Community Implementation

Local community members provided **more than 45,000 volunteer hours** to implement water solutions this year



## Water Learning Community

Held **8 sessions of our Water Learning Community**, bringing together dozens of community members, across 4 municipalities, to help build a new generation of community leaders



## Partnerships

Partnered with **52 communities** working simultaneously throughout the year to implement water solutions and **collaborated with 30 institutions, universities, and organizations** to help achieve or mission

# Strategic Alliances

## Scaling Clean Water Access in Rural Communities through Partnership

One of the core focuses of our work for the past ten years has been on the rural communities of our watershed where the most extreme water conditions are found. Many rural communities in our watershed have access to water only one or two times a week, and, even when they do have access, their water is often contaminated with toxic levels of arsenic and fluoride – the two most prevalent contaminants in our water supplies that are extremely difficult to remove and detrimental to human health.

To address this, we at Caminos de Agua have been implementing Rainwater Harvesting Systems all across our watershed as the most immediate, actionable solution for years. To date, we've partnered with over **140 rural communities and helped create more than 296 million liters of clean drinking water access for thousands of people** through our Rainwater Harvesting Program.

We don't do any of this work alone, and in 2022, we were able to leverage existing relationships and build new collaborations with government, grassroots organizations, and other NGO partners to go further than we ever have before. Most notably, by utilizing the scale of our **"Agua y Salud"** (Water & Health) project – a massive collaborative effort largely funded by the **Gonzalo Río Arrente Foundation** – we leveraged additional support to expand clean water access through our Rainwater Harvesting Program from the **Alstom Foundation, UBS Bank, the Municipal Government of San Diego de la Unión, and Rotoplas** – a Mexican corporation with more than 40 years of leadership in the water sector (and a name that has become synonymous with water storage in Mexico and throughout much of Latin America).





***“Our collaboration with Caminos has been transcendental for us...Now we are able to capture rainwater and provide people with a dependable source of healthy drinking water... [achieving] a lot of benefits for the families of San Diego de la Unión.”***

Juan Carlos Castillo Cantero, Municipal President (“Mayor”) of San Diego de la Unión

Combined with the efforts of our long-term organizational and grassroots partners **INANA, A.C., CUVAPAS (United Communities for Life and Water), SECOPA (Poza Ademado Community Services), and the San Cayetano Community Center**, together we collaborated with **52 rural communities, providing dozens of educational workshops and technical trainings, while building an astonishing 377 rainwater harvesting systems**, with accompanying Aguadapt water filters, providing families with a lifetime of safe drinking water.

To elevate this work, this year we greatly expanded our **“Water Learning Community”** – a comprehensive training and capacity-building program for emerging community leaders and grassroots organizations. Every three months in 2022, up to 60 community members, from dozens of different communities across our watershed, gathered to exchange experiences, learn about regional and global water issues, and develop the tools needed to help create a new generation of community leaders.

This is far and beyond our most impactful year to date, nearly doubling the number of Rainwater Harvesting Systems we implemented in 2021, which was already a record-breaking year for us at Caminos de Agua. In fact, through this tremendous collaboration, we were able to create more clean water access in 2022 than in the previous five years combined.

[Click here](#) to see more images about our work or scan the QR code with your phone >



# GTS & Aguadapt

Award-winning  
Technologies from Our  
Community to the World

## GTS

Our **Groundwater Treatment System**, or GTS, which filters arsenic and fluoride (notoriously difficult contaminants to remove from water) on an entire community scale, is the result of more than 6 years of an enormous collaborative and multidisciplinary effort. Spearheaded and coordinated by Caminos de Agua's Technology Development Team, working hand-in-hand with our social outreach and education professionals, GTS has brought together a unique set of actors – from academics, technical fellows, and other volunteers from around the globe looking to help develop an innovative new technology, to community leaders and concerned mothers seeking a dependable and affordable solution to their water quality challenges.

Today, "our" first GTS, located in the community of Los Ricos, is no longer ours at all but rather in the capable hands of newly-elected members of the water committee – made up by a team of concerned mothers in the community – who run the day-to-day operations and maintenance of the system, proof positive of our successful, collaborative approach. María del Rosario, a mother in Los Ricos and one of the drivers of bringing GTS to fruition, recently began handing over responsibilities after helping train new community members on the operation and maintenance of the GTS. She reflected early on:

***"We had many years without safe drinking water. While taking care of the GTS is hard work, it's changed the reality of my family and community."***

María del Rosario Cenovio, from the community of Los Ricos





In late 2022, Caminos won First Prize at the prestigious RELX Environmental Challenge – an international competition held out of the U.K. every year – for our work with GTS. The RELX award comes with additional badly-needed funding to help us implement GTS in more and larger communities of up to 200 families, starting in 2023.

Our work in developing this technology has also caught the attention of the State Water Commission of Guanajuato (CEAG for its acronym in Spanish), which is now keenly interested in GTS as a more cost effective, and easier to operate and maintain, solution to the reverse osmosis plants they have been installing.

## Aguadapt

GTS marks our second internationally-awarded technology after our innovative ceramic water filter, Aguadapt, which was the recipient of the prestigious 2019 Innovation Showcase (ISHOW) Award from the American Society of Mechanical Engineers (ASME). This water filter has had a central role in the deployment of our Rainwater Harvesting Systems regionally, and in 2022, we began taking Aguadapt to wider markets, partnering with NGOs and government in several parts of the country to help reach those most impacted. In total, we **distributed or sold more than 1,400 of this new generation water filter**, reaching communities regionally and as far off as Oaxaca and Chiapas. More than 1,000 of those filters were sold to partner organization, Concern America, who uses the filters with vulnerable communities in Chiapas, Mexico.

Aguadapt and GTS are not successful due to their innovative and low-cost designs alone. A fundamental aspect of our approach is designing and iterating these technologies and models in collaboration with those who actually benefit from them most, promoting more sustainable and truly lasting change. Moving forward, we are striving to bring both of these technologies to scale, to further reach those in our watershed and well beyond.

[Click here](#) to see more images about the GTS & Aguadapt or scan the QR code with your phone >



# The Next Ten Years

## Our Plan for the Future

We at Caminos de Agua are designing a portfolio of projects, building new key collaborations and networks, and engaging critical stakeholders to meet the water challenges of the next ten years. We have identified **three priority paths** to generate measurable impact, and maximum social benefit, for the challenges ahead.

### 1. Expanding Rainwater as a Broader Resource

Rainwater is a pristine water resource that literally falls on our head, and it also happens to be inherently free of arsenic, fluoride, and other potential chemical contaminants that plague our region. When combined with a simple water filter to remove biological contaminants, rainwater transforms into a trusted and remarkably safe drinking water source, which is how Caminos de Agua has been taking advantage of this resource to date.

We will continue to leverage and build new relationships with NGOs, governments, and other key stakeholders to exponentially expand clean water access through household rainwater systems in the rural areas disproportionately affected by our crisis. We will also promote and educate on urban rainwater capture as a decentralized alternative to subsidize the water needed to quench a growing urban population.

Rainwater can also help to recharge overexploited aquifers, and be utilized to meet a plethora of other needs, but only if we start taking better advantage of it. Moving forward, we will continue to develop strategic partnerships to scale models that allow us to harvest more rainwater than ever before – in cisterns, gardens, community-scale lagoons, and even in the ground itself.

### 2. Scaling Water Treatment

As important as rainwater is, it is not a silver bullet, and it's only becoming more scarce due to climate change. Because of this, we simply cannot get away from the use of groundwater, and, unfortunately, there is no going back on groundwater contamination. The damage is done. And we will continue to live with the consequences of arsenic, fluoride, and potentially other complex chemical contaminants in the future.

Innovative solutions, like our Groundwater Treatment System, need to be widely replicated and scaled. The success of this award-winning technology, and the innovative approach to community-run operation and management, has inspired multiple stakeholders to get involved, including the State Water Commission of Guanajuato, who is currently verifying GTS for further expansion. We're on our way to building 10 more GTS systems in the next five years – providing sustainable, safe drinking water to more than 10,000 people.

The long-term vision, however, is to make GTS a model that can be replicated by others, with limited involvement from Caminos, to allow future generations, throughout Mexico and beyond, to escape the dire health impacts of consuming arsenic and fluoride contaminated water.

### 3. Groundwater Conservation and Recharge

Moving into the future, we are becoming more committed to addressing the root cause of our water crisis: the overexploitation of our groundwater resources. The current state is grim, and this is not the kind of catastrophe that can be fixed during a single municipal administration or two. It will take years, if not decades, to begin to reverse the damage, if it's even possible to do so. This will require bringing together stakeholders at all levels, especially the agricultural sector – which is responsible for more than 85% of groundwater extraction – to find ways to increase infiltration into our aquifers and, most importantly, lower the use of our rapidly depleting groundwater.

While this is not our core area, Caminos has always acted as a catalyst, and, moving forward, we will continue to partner, and build networks, with other NGOs and grassroots organizations, affected communities, academic institutions, businesses, governments, industry, and the agricultural sector to create multi-dimensional programs, new models, and coherent water management plans to better conserve and safeguard our finite groundwater

[Click here](#) to look at an album of our 10th Anniversary Celebration, where we presented our plan for the future or scan the QR code with you phone >

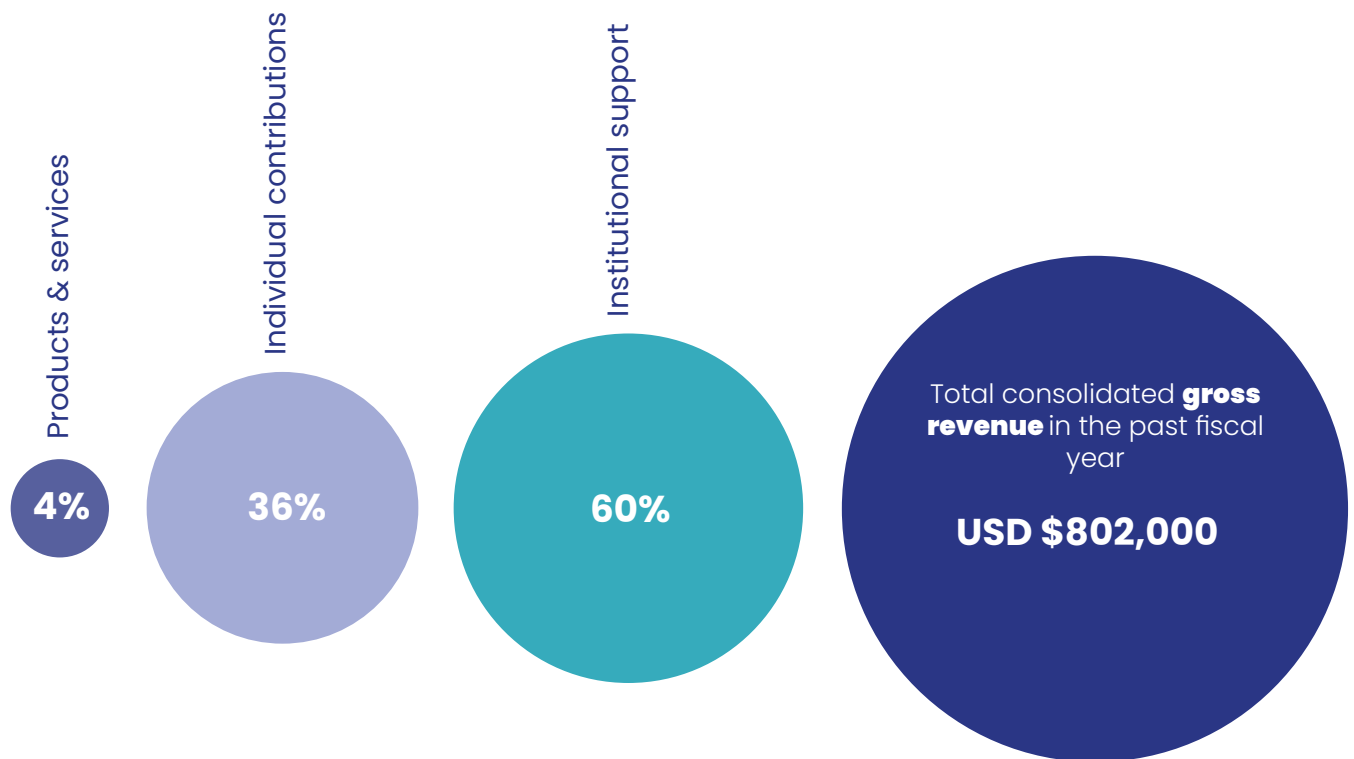




# In 2022, we raised **USD \$802,000\***

Total consolidated gross revenue in the past fiscal year

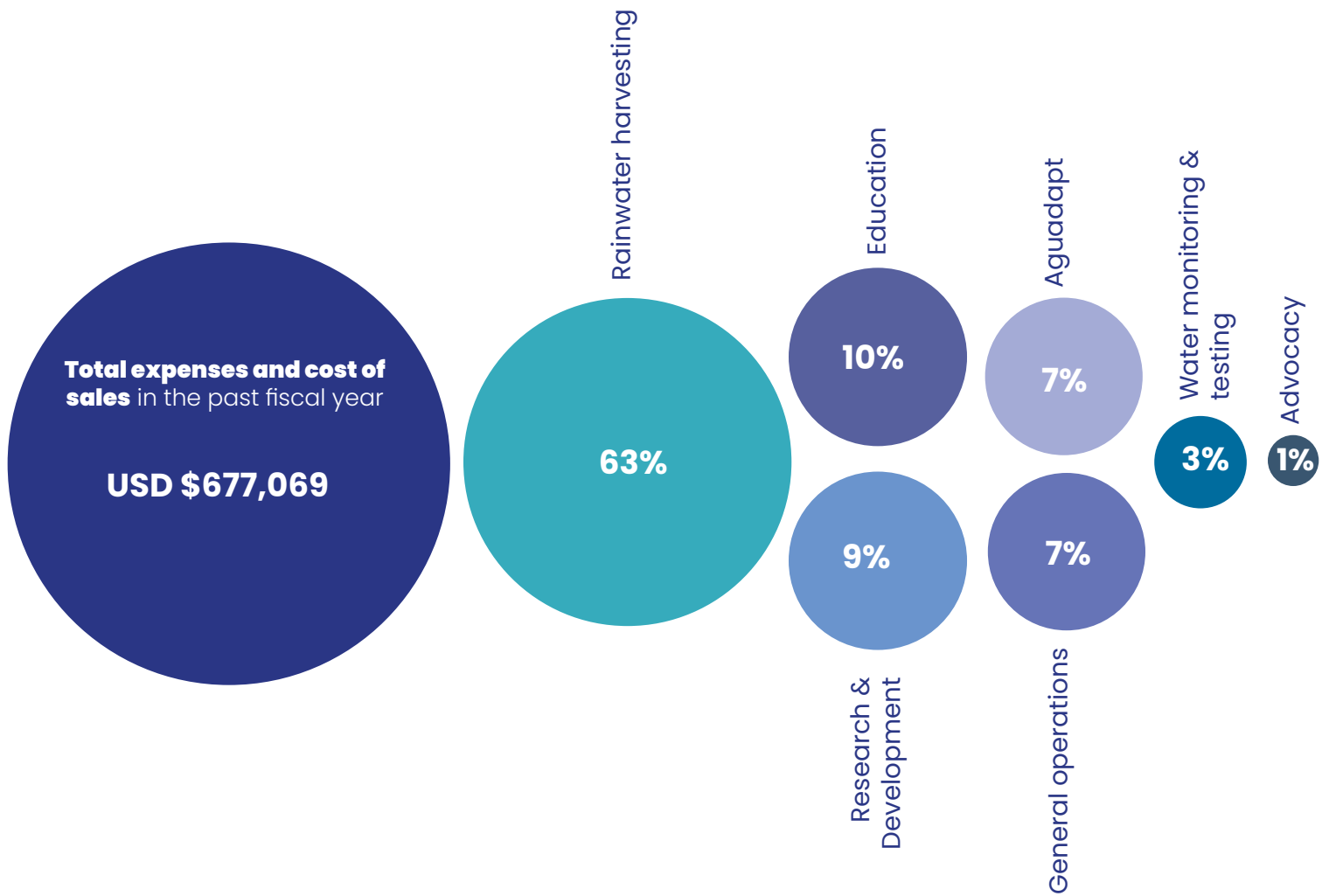
\*Please note that USD \$107,000 in funding came at the end of 2022 for implementation in 2023.





# In 2022, we invested **USD \$677,069**

*Total expenses and cost of sales in the past fiscal year*



# Our Partners

## Institutional



RÍO ARRONTE  
FUNDACIÓN



Municipality of  
San Diego de la  
Unión



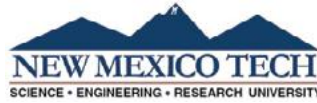
AMISTAD CANADA  
Canadian and Mexican working together.  
Mexicanos y canadienses trabajando juntos



## University and Research



UNAM San Luis  
Potosí



## NGOs, Networks, and Community Organizations



CENTRO COMUNITARIO  
Sister Ellen Kelly  
San Cayetano SLPz Gto.



# Camino de Agua Staff

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Ana Torres  
Casilda Barajas  
Dennis Paquette  
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Fátima Almeida  
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# Volunteers

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Dixie Ashley  
Eamonn Ridgley  
Fernanda Avelar  
Maya Anderson  
Nancy Grimwood

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Agustín Madrigal Bulnes - Vice President  
Joshua Samson - Treasurer  
George Terrell - Secretary  
Charlie Sellers, Ph.D.  
Dave Barrett  
Ilan Adler, Ph.D.  
Dr. Isabel García Bastida Germán  
Javier Angel, MSc, MArch  
Lyn Ann Knox  
Rob Lerner

# Supporters

Along with our institutional supporters, Camino de Agua is truly grateful to our **413 individual contributors** in 2022 who make our work possible, including our major givers this year:

Doug & Kate Elwell  
Pat & George Terrell  
Jay & Debe Moscovitz  
Chip & Lucy Swab  
Bob & Peggy Krist  
Faith & Jack Xenos  
Phyllis & King Culp  
Ellen & Steven Steury  
David & Pamela Bluhm  
John Calaway  
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Anna Zervos  
Steve Kornher  
The Marcotte Family Foundation  
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Nicola and Guy Lansdown  
Zoune Lauseure  
Bruce Janklow & Ilene Ferber





[www.caminosdeagua.org](http://www.caminosdeagua.org)