

A large white cylindrical water tank stands in a rural, arid landscape. A man wearing a blue and green striped shirt and a baseball cap is sitting on the ground at the base of the tank, filling a container from a tap. The background shows a brick building and a cloudy sky.

THE YEAR  
IN REVIEW  
2015

*CATIS  
MEXICO*

# Caminos de Agua - CATIS MEXICO

## THE YEAR IN REVIEW 2015

In 2015 we were more effective than ever positively impacting lives in communities at risk surrounding San Miguel de Allende. Safe drinking water is now the norm in over 1,000 more homes and schools, thanks to our ceramic water filters.

But "safe" (pathogen free) water is not necessarily "healthy" water. Many community water supplies contain alarmingly high levels of minerals—with significant adverse health consequences.

This Newsletter highlights the work we're doing to solve this daunting problem.

You'll also find: our innovative rainwater collecting system for greater community self-sufficiency, our training programs that prepare tomorrow's environmental leaders, our new water quality monitoring program, and more.

This past year we also reflected on our very identity! As we engage with issues of environmental sustainability, we find our attentions turning increasingly to **water**—so central to life!

Rather than another year of explaining the CATIS acronym and the work we do, we're saying it all with our new name

– **Caminos de Agua** – and our mission:

*"Promoting healthier more prosperous lives through practical sustainable solutions, along the pathways that water travels through our lives and the planet."*

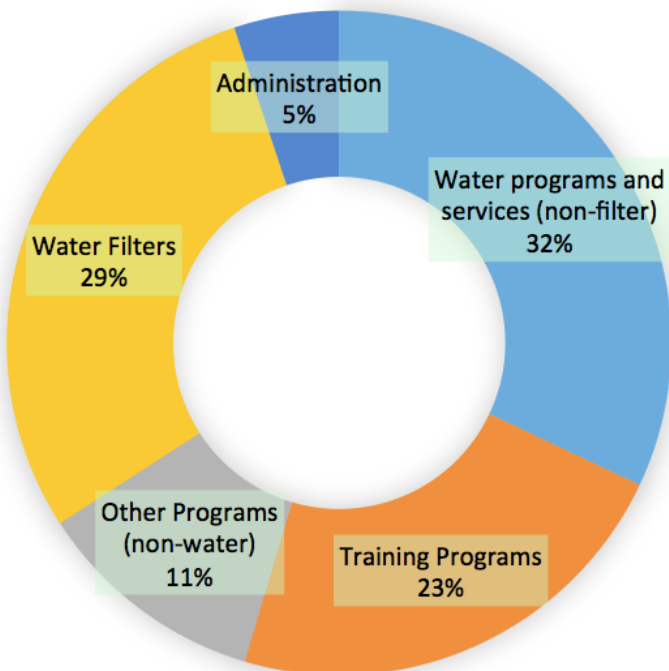
We're the same great organization, with more ambition and greater focus than ever!

Please join us in helping the less fortunate along these pathways to better living, our **Caminos de Agua**....

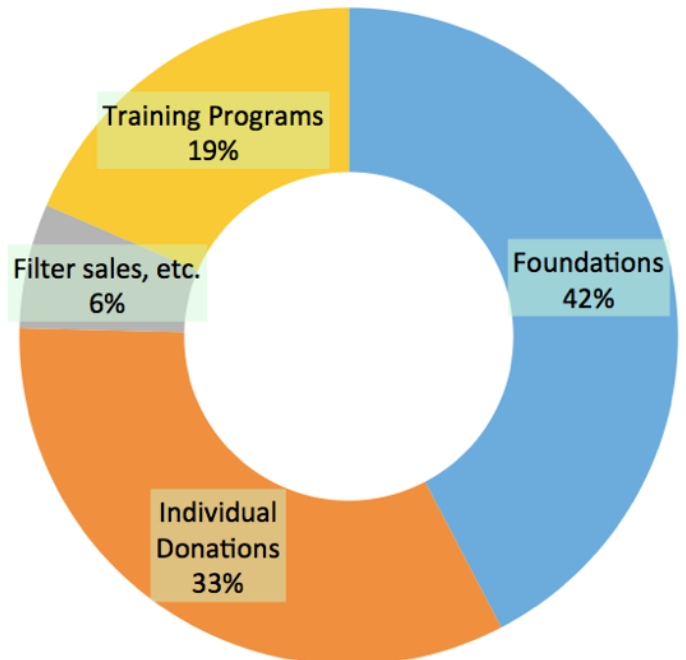


## 2015 BY THE NUMBERS

**Expenses**  
\$109,958



**Income**  
\$133,598





# RAINWATER

HARVESTING

2015

This year we developed new designs in rainwater harvesting technology. Designed with CATIS Ceramic Water Filters we created a low-cost, low-tech cistern system that yields high quality water that is safe, clean and sustainable.

## DESIGN & IMPLEMENTATION

### Rainwater Harvesting Cisterns

CATIS has been working on new rainwater harvesting designs. We've gone one better on the classic 12,000 liter reinforced-concrete cistern, by adding a "first flush system" that purges the dirt and debris that accumulates on rooftops during the dry season.

This innovative design, used in conjunction with our Ceramic Water Filter, assures a safe, healthy water supply, while taking pressure off overexploited aquifers that contain dangerous levels in mineral contaminants.

### Community Hands-On Involvement

All cistern were built by the local communities themselves who were trained on ferrocement cistern construction, first flush system implementation, and use and maintenance of ceramic water filters.

In 2015, we

- Built 14 cisterns - with integrated first flush - in 7 rural communities,
- Installed 32 ceramic filters systems alongside the rainwater systems,
- Provided 170,000 liters of clean water storage,
- Gave people the ability to filter 1.4 million liters of water over the next 5 years,
- For 6 schools, 3 churches, and 24 family homes.



# 1,000 CERAMIC WATER FILTERS

In addition to providing ceramic water filters for all of our rainwater-harvesting projects this year, we also teamed up with new groups to get safe water to people throughout the country. To date, we have officially installed our ceramic water filters in more than 1,000 community homes and schools. Below are examples of three collaborations that were part of this success.



1

## Isla Urbana

Isla Urbana is a Mexico City based rainwater harvesting organization. In 2015 they began using CATIS ceramic water filters for their social projects. At two schools in Guerrero, their rainwater systems paired with 30 of our filter systems provide safe water to 500 students.



2

## The Lavender Project

In 2015 we worked with The Lavender Project, a local sustainable business initiative. We held 5 workshops and distributed 105 filter systems to families and the local middle school. The cost was split between CATIS, The Lavender Project, and the community members themselves.



3

## San Cayetano Community Center

Along with partnering with us on the cistern projects, the San Cayetano Community Center actively promotes our systems throughout the region. They also filter rainwater at their center and make it available to everyone in the surrounding community.

# WORLD WATER DAY



More than 400 community members and representatives of local organizations came out to the San Cayetano Community Center on March 22 to celebrate World Water Day. The event was organized by the *Coalition in Defense of the Independence Watershed (CODECIN)*, an organization in which we are very active. The day focused on regional water issues in a national context. Included were: rainwater harvesting and alternative practices, and the now “on-hold” National Water Act, which, if passed, could be detrimental to rural communities through Mexico.

# UNITED COMMUNITIES



One of the major success of the World Water Day event is that it helped develop the *United Communities for Water and Life* - an autonomous coalition of more than a dozen communities in the most effected part of the watershed. CATIS has been working with this coalition to help select communities for our rainwater harvesting projects.

# WATER: SAFE VS. HEALTHY

---

Our ceramic filters have been tested 100% effective in eliminating pathogens. But safe water may not be healthy water. Over-extraction by commercial agriculture has forced wells ever deeper into substrates containing high concentrations of minerals. Some community wells have 16x the maximum recommended level of fluoride, resulting in severe dental and crippling skeletal fluorosis, and it has been tied to cognitive and developmental issues.

Bottled water is expensive, and commercial systems that remove minerals are out of reach for economically marginalized communities.

With the help of geochemists at Northern Illinois University and interns from Engineers Without Borders-UK, we've been pioneering a way to remove fluoride from drinking water using filtration media made from charred animal bones. In 2016 we'll be introducing this method into communities at risk—putting this practical, sustainable, affordable solution to work where it will make a profound difference in community health.



After more than a dozen models, we are getting close to a low-tech, field-deployable gasifier design that can produce low-cost and high quality bone char on a community level. Learn more:

<http://www.catis-mexico.org/biochar/>

CATIS Mexico brought on EWB-UK intern Olivia Hobson, who recently graduated with her Masters in Environmental Engineering from the UK. Olivia helped move testing forward on fluoride removal for various different bone chars, helped inform new gasifier designs based on her research, and began designing and testing potential filtration systems.

See the whole report:

<http://www.catis-mexico.org/biochar/>

# EDUCATION

The highlights this year combined our annual field school in partnership with IRRI-Mexico and Engineers Without Borders - UK with rainwater harvesting trainings for the Peace Corps Mexico.

2015

## CONTEXT, CULTURE, AND DESIGN SUSTAINABLE TECHNOLOGIES IN ACTION IN 2015



### Summer Field School

Fifteen participants in this year's two-week course: *Analyzing Earth Friendly Technologies: Studying Context, Culture and Design* delved into the world of sustainable technologies. Participants visited social and commercial projects working with green technologies in Puebla, Mexico City and San Miguel de Allende as part of this international course. CATIS Mexico is proud to partner with IRRI Mexico and EWB-UK on this opportunity to create transformative educational experiences. Interested in the course for 2016? Find out more on our website: <http://www.catis-mexico.org/about-2016-summer-course>



### Peace Corps of Mexico

This year CATIS Mexico also partnered with Isla Urbana to provide technical training for the Peace Corps of Mexico. More than 40 students - including both Peace Corps volunteers and community representatives - came from throughout central Mexico to participate in the intensive 3-day course. Students learned rainwater basics in the classroom (including both high and low-tech systems), visited real projects and various examples throughout San Miguel, learned to calculate harvesting potential, and learned to design systems in the field.

A photograph showing two individuals in a field setting. One person, wearing a white protective suit and a white bucket hat, is kneeling and handling equipment inside a light blue plastic case. The other person, wearing a grey t-shirt and a large straw hat, is also kneeling and looking at the equipment. The case contains various items, including a black device with cables, several white containers, and other tools. The background shows a dirt ground and a green cactus on the left side.

# WATER QUALITY MONITORING

After years of testing more than 70 rural community wells and other drinking water sources throughout the region, CATIS Mexico finally published an online, interactive, and completely free set of water quality monitoring maps. These maps show both arsenic and fluoride contamination throughout the region of the Independence Watershed and are a culmination of work with numerous partners including: the Coalition in Defense of the Independence Watershed (CODECIN), Northern Illinois University, Texas A&M University, University of Guanajuato, the San Cayetano Community Center, Brandeis University and numerous others.

A very special thanks to Cameron Plese of Brandeis University for getting the maps up and running, which are available now on our website:

<http://www.catis-mexico.org/water-quality-monitoring/>



HELLO!  
HOLA!



This has been a big year for CATIS, and now we're excited to announce our new name! One we feel better suits the work we do. Farewell CATIS,

Say hello to:

"Caminos de Agua"

2015 Year in Review  
CATIS Mexico

CATIS Mexico is a 501(c)(3) not-for-profit organization. All donations made to CATIS Mexico are tax deductible.

