Mexico City’s Rain-Harvesting Program Could Change How Cities Manage Water

ALAN GRABINKSY AUGUST 16, 2019

A rainbow over Mexico City. (Photo by Artotem / CC BY 2.0)

When Maria Isabel Contreras and her husband moved to Mexico City’s Iztapalapa district, 30 years ago, water was not an issue. But as the district urbanized, the taps began to dry up. Today, the nine-person household — four adults and five children — receives three hours of continuous supply of murky, brown water each day, before the water runs out.

This translates into a daily struggle for the Contreras household, and she is quick to enumerate all the tactics used to get by. “We inserted water savers in all the toilets,” she said, “and use the bathtub as an extra storage container.” The family also collects extra water from showers by placing buckets next to their feet, and they reuse water from the laundry machine to clean the floors.

The Contreras are not alone; millions of people in Mexico City lack access to running water. According to UN-backed research, Mexico City — along with Cairo, Bangalore, Cape Town, and seven other megalopolises — will run out of water by 2030. Those who suffer from water shortages today pay for private water companies to fill up their tanks — a service that Contreras can’t afford.

The irony is, water in the city abounds. Set on a mile-and-a-half-high basin and surrounded by mountains, the city — which used to be integrated with a system of lakes and rivers — receives more yearly rainfall than London. But, due to urbanization policies implemented since the Spanish conquest

and strengthened by the city's mid-twentieth century growth, the resource has been squandered and mismanaged, profoundly affecting the ecosystem and the survival of its millions of inhabitants.

Today, most of the city's water is collected from underground wells or pumped from hundreds of miles away through inefficient and costly infrastructure. As for rainwater, it mixes mostly with air and ground pollutants and ends up in the sewer.

Earlier this year, Contreras found out about a government program to install rainwater-collecting systems in the houses of Iztapalapa and Xochimilco, another poor district with chronic water problems. The new mayor, Claudia Sheinbaum, an environmental scientist, promised to install 100,000 of these rainwater harvesting systems in the rooftops of Iztapalapa by the end of her six-year-tenure.

During the kick-off event in Iztapalapa — where her party has had strong support during the last elections — Sheinbaum said that the city is investing twice as much as previous governments in solving the water problem, which also means looking for leaks in the system and finding more water sources. The rainwater project is a 200 million-pesos ($10 million) program, a small part of the city's overall budget, but according to Sheinbaum, a more efficient way of dealing with part of the problem: "We want to solve our debt to Iztapalapa, the lack of water to the area." she said.

To install the harvesting systems Sheinbaum is partnering with Isla Urbana, an NGO that has been installing these systems since 2009. If they are successful, over half a million people could survive for up to seven months without accessing the urban water grid. "It could set up a new precedence in urban governance," Enrique Lomnitz, one of Isla Urbana's founders, says, "with whole areas of a city no longer depending on the government for daily access to the resource."

The rain-harvesting idea was conceived together with Renata Fermont as part of Lomnitz's graduation project at the Rhode Island School of Design. Fermont and Lomnitz conducted interviews and research on the needs of low-income communities in Mexico City´s periphery, which led to the insight of a fundamentally flawed paradigm of water management in the valley.

"We realized that the current model was drawing out two or three times more water than what it was putting in," he says, "and that changing this outdated model through infrastructure investment was a costly endeavor — so we turned our eyes on granularity." What this means is implementing cheap (around $700) systems in each house without having to drill underground to change the old and inefficient infrastructure.

The first system was set up using spare parts, in the house of a woman named Clara Gaitan. According to Lomnitz, after installing the rainwater harvester Gaitan — who already had a 30,000-liter water tank in the cellar (a common feature of houses in Mexico City) — managed to live without having to use the water grid for seven months.

In order to gain a better sense of the needs, Lomnitz moved from his house to a house in the periphery where he lived for four years. Those first systems served as a proof of concept, and, as more people got involved, they started drawing attention. In 2011, the Mexico City district of Tlalpán, then under Sheinbaum's command, took notice and asked Isla Urbana to install 500 systems. This was the first time Isla Urbana had to deal with bigger logistics and learned to install and train the families receiving the system on a massive scale.

Today the patented system is highly adaptable to the conditions of each house. The most basic packages use special drains to collect water from the roof and run it through a patented filter called

Tlaloque 200, which retains most of the solids, and through a leaf-filter. More sophisticated versions include a carbon filter, which reduces the bad taste, and a water purifier.

Although the final output in most cases (a costly purifying filter is not installed in many of the systems) is not potable water, it is water that can be used for cleaning the house, laundry, flushing toilets and showering. Since its founding, Isla Urbana has been able to provide over 50,000 people with clean water (in some cases, year-round).

One Wednesday morning I went to visit the installation of the filters in Iztapalapa. Javier Hernandez — who, together with his brothers Gabino and Alejandro, has worked for Isla Urbana since 2011 — drove me around. Hernandez, who is now head of installations in Iztapalapa (his brother is head in Xochimilco) has overseen the installation of 11,000 systems. In the current initiative, he leads 15 brigades and installed 36 systems a day; since April, the Hernandez brothers have installed 3,500 systems.

Hernandez drove me to a house that had a system installed a couple of weeks ago. "We have just received the first rain, and the container was overflowing," Eugenio Reyes Lopez, who lives with nine family members, told me.

Reyes, unlike Contreras, has had almost no running water throughout his thirty years of life in Iztapalapa. He receives water on Thursdays and Fridays, if at all. He has a big container in the basement of his house where he collects all the water that he can to last for the week. "It is yellow and rusty," he told me, "from the shitty water that comes out."

As we toured their house Reyes pointed to a series of barrels stacked outside, also used as storage for water. He lifted one lid to reveal a greenish substance: "This is the water that comes out of the system," he told me. Then he revealed another barrel containing clear water "This one," he said, smiling, "is the one that came from above."

At Maria Contrera's house, one brigade was busy installing a new system. Ismael Garcia, her husband, was walking back and forth, talking excitedly with the installation crew. "This is fabulous, its excellent," he told me."The streets turn to rivers when it rains here, imagine how many liters of rainwater are going down the drain, and now, into our house!"

BECOME A NEXT CITY MEMBER TODAY

Alan Grabinksy is a journalist and consultant based in Mexico City covering globalization, media and urban issues.

TAGS: WATER, MEXICO CITY

Cooperative Works to Save the Only Black-Owned Bookstore in Kentucky

Patrons pack the inside of Wild Fig bookstore during an event. (Photo courtesy Wild Fig)

This week an eleventh-hour fundraising effort saved the only black-owned bookstore in Kentucky. It's one of many efforts by Lexington community members to maintain the Wild Fig bookstore as a community hub over its eight-year history.

The Wild Fig's history dates to 2011, when artist Ronald Davis and author Crystal Wilkinson opened it as the first, and only, black-owned bookstore in the state. Citing financial difficulties, the couple closed shop in 2015. Later that year, they seized an opportunity to reopen Wild Fig in a smaller location on the north side of the city. After three years in business, they announced they'd once again need to close the doors to the public.

The announcement set off alarm bells for Lexington community organizer April Taylor, as Wild Fig had become an important hub. "There aren't necessarily a lot of safe spaces around town to have conversations about racial and economic inequality," Taylor says.

Davis and Wilkinson put the business up for sale, and in less than 30 days, Taylor helped spearhead a community fundraising campaign raising $25,000 to buy it. The community not only saved the business but kickstarted its transition into a worker cooperative. Taylor is now one of seven co-owners of the Wild Fig.

Since reopening as a cooperative last year, the struggle to keep the doors open has not subsided. This month, Wild Fig launched a series of events to increase traffic and generate enough profit to make it

through the summer. In a down-to-the-wire fundraising effort launched this week, the bookstore raised just enough money to pay its August rent.

"The way the Fig came into community possession is really unprecedented — in some ways it's the cart before the horse," explains Taylor. "Most communities organize for months or years before they come into possession into a business, but for us it was a space we saw as safe and sacred and wanted to hold onto, and within 30 days we had possession of a business."

"This is new for all of us," Taylor says, "But there's a legacy of black bookstores we want to honor and carry on."

Black-owned bookstores have made something of a comeback in recent years: the number of businesses peaked in 1999 with 324 but fell to a low of 54 in 2014, according to the African American Literature Book Club. By the end of 2018, there were 110 black-owned bookstores.

But the history of black-owned bookstores — which often double as organizing and community hubs — includes threats to their existence. At the height of the Black Panther Movement, for example, "radical" black bookstores were targeted by the FBI.

Cooperatives, too, have played an important role in African American history. Jim Embry, a supporter of Wild Fig and director of the Sustainable Communities Network, traces his own family history to farming worker collectives that emerged after the Civil War. In the 1970s, he joined with others to found the Good Foods Co-op in Lexington.

"The idea of the co-op is to create a community without great extremes of inequity," he says. "At the Fig, there's a larger perspective that yes, we are a bookstore, but we are also a community gathering place where ideas are discussed and acted upon."

Still, it's been a difficult transition to full-fledged cooperative while maintaining operation of an independent bookstore and cafe. The seven co-owners of Wild Fig bought into the business monetarily or with 300 hours of sweat equity. Taylor says the goal is to bring in more co-owners, but it's a challenge in a city without resources to support cooperative business development.

In addition, the Wild Fig is located in the North Limestone area of Lexington, which is gentrifying. The landlords of the building, according to Taylor, have contributed to redevelopment and rising prices of the area. Recently the Wild Fig proposed an affordable rent agreement, asking the landlords accept 30 percent of its gross sales, and asked for community support.

The Wild Fig has also fundraised, held events including drum circles and drag queen story times, and is selling inventory online. But if the landlord does not accept the affordable rent agreement, the business will explore opportunities to relocate to a more affordable space.

A new location could mean an expansion of the cooperative model. The Fig plans to submit a business plan to a local affiliate of the Working World, an organization that builds cooperative businesses in low-income communities. The goal is to qualify for a minimal-risk capital loan to purchase its own building. If the Wild Fig bought a historic home on the north side of the city — an area historically home to people of color — co-owners would convert the upstairs into a housing cooperative and the basement into a cooperative co-work space, according to Taylor.

She is ultimately hopeful: over the bookstore's eight-year history, Lexington residents have consistently pulled together to save it. As for the bookstore's current challenge transitioning to a cooperative, Taylor is already considering how this work can inspire a larger collective of cooperatives across the south. The Wild Fig partnered with Tennessee-based **Highlander Center** to explore opportunities for co-op incubation.

"One of the cool things about us being trailblazers," Taylor says, "is we get to leave a legacy that will hopefully make it easier for those who come behind us."

BECOME A NEXT CITY MEMBER TODAY

Emily Nonko is a Brooklyn, New York-based reporter who writes about real estate, architecture, urbanism and design. Her work has appeared in the Wall Street Journal, New York Magazine, Curbed and other publications.

TAGS: LEXINGTON