

Our Environment

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CLIMATE

4a Changes loom

Forecast of 2013 National Climate Assessment Report sees acceleration of current trends



—Jeremy Ruzich



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—Catholic Relief Services/Lane Hartill

Top: A boy takes a sip of freshly filtered water during a 2011 Water With Blessings training session in Comayagüela, Honduras. **Lower left:** A young girl runs down a set of stairs where a Water With Blessings filter system purifies water into a clean bucket. **Lower right:** Moses Nyaaba, assistant coordinator of Kuyellingo Primary School's health education program, pumps water at the school in Kuyellingo, Ghana. CRS funds helped pay for the borehole.

Gallon by gallon

Organizations work to spread technologies that empower people to access clean water worldwide

By BRIAN ROEWE

As always, Ursuline Sr. Lorraine Lauter returned home in mid-March from the first of her twice-yearly trips to Honduras with lighter luggage. Two hundred water filters lighter, to be exact. She left them in the capable hands of mothers as part of the “God-charged sustainable development” that her organization, the Louisville, Ky.-based Water With Blessings, seeks to bring, along with clean water, to the region and other parts of the world.

But like water itself, the types of clean water projects implemented across the map come in many forms. In Lauter's case, it utilizes buckets of faith. Others involve engineering conducted by arguably the Catholic church's most recognizable global relief organization. Though varied in their size, scope and

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WATER: 'MOTHERS ARE THE MOST RELIABLE GROUP TO FOCUS ON'

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approach, each seeks to make a dent into the monsoon-sized water crisis affecting hundreds of millions of people worldwide.

According to UNICEF, 783 million people, or one in 10, lack access to clean, potable water. The World Health Organization estimates that one in three people deal with water scarcity, with a fifth of the global population living in areas where water is physically scarce, and a quarter in developing countries where limited infrastructures lead to shortages. Additionally, 2.5 billion people are without proper sanitation.

"Not having access to sanitation allows opportunities for disease transmission, contamination of these water sources, in particular," said Christopher Seremet, a professional engineer and a technical advisor for water supply and sanitation for Catholic Relief Services. CRS is the overseas relief and development agency of the U.S. bishops.

Among the waterborne diseases are cholera, dysentery and typhoid fever. Diarrheal diseases, a primary threat, result in more than a million child deaths each year. Providing clean water and proper sanitation facilities can demonstrably improve health conditions, amid numerous other benefits. Healthy children are more likely to remain in school, and steady water access can mean marked advances in agriculture and development.

While statistics have improved, they remain daunting. UNICEF estimates that more than 2 billion people have gained access to clean water since 1990. The U.N. also declared it has achieved — five years ahead of its 2015 deadline — its Millennium Development Goal of halving the population without sustainable access to improved water sources, with 2 billion additional people gaining access since 1990. Debate, though, remains over possible double counting and what constitutes improved access; the U.N.'s 2012 report even admits the improvement is likely overestimated.

Even with that goal met, more than 600 million people will remain without a reliable, clean water source, with the Oceania and sub-Saharan African regions unlikely to meet their drinkable water targets. The crisis also compounds globally in rural areas. In terms of sanitation access, estimates fall well short of providing 75 percent of the world with reliable facilities by 2015, expected to reach only two-thirds.

'The pace is slow'

The intimidating figures, however, have done little to diminish global efforts. A Google search for "clean water projects" reveals uncountable lists of organizations, from Charity Water, to Living Water, to People Water. Perhaps enthusiasm remains high because, unlike other epidemics like HIV/AIDS and cancer, the cure to the water crisis is known. It's just a matter of getting it to where it's needed.

"The pace is slow. There are a lot of people out there, [but] the cost of doing this type of work is fairly expensive," Seremet told *NCR*. "A million dollars really doesn't go very far."

The water sector of CRS currently operates water, sanitation and hygiene (or WASH) programs in 30 countries, with each conducting multiple projects. Their strategy seeks to provide water along four streams: domestic

use, income-generating use, preserving current and future water sources, and emergencies.

In countries like Ghana, from where Seremet recently returned, the organization's preferred method for providing clean drinking water is drilling bore holes and installing hand pumps. Other techniques include piping groundwater from area hills and mountains, and capturing rainwater, but the benefit of a hand pump comes in its low technology.

"It's solid engineering, but it's using technology that in theory communities should be able to operate, make minor repairs, and maintain its functionality," Seremet said.

The communities partner with CRS's local contacts, usually a diocesan development office in the country

to point B. There are a lot of rural, rural villages out there, and to get access to them is not very easy, so it is a very slow process," he said.

Recently, water sector trends have shifted from communal treatment facilities to the household, but universal plumbing and individual taps, despite some advances in areas like Madagascar, remain a pipe dream.

"It's still too far way," Seremet said. "It's a struggle right now just with boreholes and community hand pumps."

Buckets of love

Compared to a large operation like CRS, the efforts of Lauter represent a mere drop in the bucket in the realm of water initiatives, but it's with buckets that she and others improve the lives of

filter — catching 99.999 percent of biological contaminants — before emptying into a clean container. The system remains useable for at minimum a decade, and capable of filtering a million gallons, or 500 gallons daily.

But the filtration is only part of the mission. After learning of the "human dynamics" that can emerge through her years visiting the community, Lauter realized the best way to assure the filters remain in use and out of local politics was to give them to the mothers.

"Mothers are the most reliable group to focus on. They're highly focused on the welfare of their children," she said.

Called water women, the mothers are selected through a collaborative process from a pool of mothers, or grandmothers on their own, raising children under age 5. Each woman undergoes a four-hour training session to learn how to use the system, which includes personalizing the bucket by painting it, because "when you put your little stamp of art on something, you have a deeper investment," former art teacher Lauter said.

But the training also includes review of sanitation and hygiene practices, and introduces the spirituality driving the program. Lauter described simple acts of compassion as the strongest way to evangelize, presented to the women through the Gospel story of Jesus and the woman at the well.

"We talk about that, she is the complete unknown, unregarded person ... but she's the first person Jesus sends to evangelize," she said.

The mothers aren't asked to become missionaries themselves, but rather to evangelize through the act of filtering water for, at minimum, three neighbor families as part of their agreement. Many choose to support many more.

In the community outside Tegucigalpa, the impact of the filters is noticeable. A mobile medical clinic can spot immediately which children and families use "Sister Lorraine's filters," by observing their weight gain, fuller hair and healthier skin tone. In an area where parasites easily infiltrate dirty water, families using the filter self-report nearly 100 percent parasite-free.

But Lauter noted the program has provided an unexpected improvement: empowering women and quenching their intellectual thirsts.

"I did not set out to build a program that would enhance women's leadership capacities, but it has been huge for that. It has just been huge," she said.

To date, the Water With Blessings program has distributed about 2,000 filters, and has since spread outside Honduras, mostly through partnering parish-based or other missionary groups. Each agrees to implement the system using the same program Lauter uses in Honduras, though modifications to the overarching biblical story are necessary for areas where hints of proselytizing pose great threats.

Though their footprint appears small compared to other groups, Water With Blessings provides a unique avenue to addressing the global water crisis while spiritually empowering communities.

"If you take the basic principles of sustainable development, and you put in God and mothers, you have something really, super sustainable," Lauter said.

A contribution representing more than just a drop in the bucket.



Lilian Santos, a lead Water With Blessings collaborator, drills a hole in a bucket during a 2011 water women training session in Comayagüela, Honduras.

—Jeremy Ruzich

familiar with the people and their culture. As part of the agreement, the community is expected to contribute to the project, which includes implementing sanitation facilities and promoting hygiene, often through labor, but also financially. A committee collects water user fees, often no more than pennies, Seremet said, "so that there is some money in the communities to purchase spare parts when a repair needs to be made."

A single borehole and pump supports 250 people, but often they become overused, serving as many as 500 to 1,000 people. The additional wear leads to more frequent repairs and a shorter lifespan for the pump. The strain on systems reflects the growth of the areas which they support.

There are many more people now than 50 years ago, Seremet said, offering a reason to the often decades-long CRS presences in areas. Another reason is cost.

"Think of gas prices, transportation costs, moving materials from point A

mothers and their children, gallon by gallon.

In 2009, Lauter brought her first Sawyer PointONE filter system to the community on the edge of a small dump outside Tegucigalpa, Honduras' capital city. She had made the trip twice annually for nearly a decade with a Methodist medical ministry group, which noted the need for much of its treatment could be eliminated if the people had access to clean water.

After consulting with local leaders and women, they sought a solution. And after exploring everything from bio-sand filters to car-battery-powered systems, they settled on the filter originally designed for military use.

The passive, \$60 filter, each paid for through donations, operates simply: "There's no chemistry, there's no electricity, there's no chlorine," Lauter told *NCR*. "It works by gravity."

The filter attaches through a tube into a hole in a five-gallon bucket, into which water is poured and ultimately passes through the .1 absolute micron

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