
Dengue's re-emergence may be partially the result of the continuing shortage of clean water and sanitation that plagues the world's poor. This shortage has been worsened by the increasing urbanization of poverty, where makeshift villages and urban ghettos often rise up near job sites, already plagued with ground and water contamination from industrial manufacturers.

Cleaning up these unsafe and unsanitary urban outposts has been hampered by government indifference, the high cost of installing adequate sewer infrastructure, and the lack of adequate housing sites nearby.

The WHO estimates that 1.8 million people die each year from diarrheal diseases, about 88 percent of which are caused by unsafe water supply, sanitation and hygiene. As is often the case with such a public health threat, children are the most common victims.

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Chapter 5

Water and sanitation

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PHIL LAMPRON



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Anara Dikanbaeva stands beside a new toilet built with the help of Habitat for Humanity outside her house in the village of Kyzyl Suu, Kyrgyzstan. Waste from the toilet is collected and used as fertilizer. With the old toilet, behind her, the waste went into the ground, creating a potential health hazard.

sources, compared with just 77 percent in 1990.

Unfortunately, that’s not the case with sanitation. Nearly 40 percent of the world’s population, or 2.6 billion people, live without access to improved sanitation. The worst problems are in sub-Saharan Africa and Asia. With less than five years remaining to reach the U.N.’s Millennium Development Goals of “halving the proportion of people without sustainable access to safe drinking water and basic sanitation,” much work remains. (It should be noted that even if the goal could be met, an estimated 1.7 billion people would still lack access by 2015.)²²

Advocates for improved shelter in both rural and densely populated urban areas are constantly adapting standards to keep pace with developments in how best to supply clean water and appropriate sanitation. Those efforts are increasingly turning toward an “eco-sanitation” approach for latrine construction that uses little or no water and has the potential to turn human waste into fertilizer and other useful products.

While the concept of eco-sanitation has been around for 15 years or more, the use of these new approaches in poverty housing around the world is relatively new. The concept is based on using no water—or as little as possible—to effectively create a “dry” sanitation system. It often involves collecting and disposing of urine and feces in separate holding facilities and then converting the waste for other uses. Many projects using dry sanitation are in their infancy, but the early results are encouraging.

“One of our basic problems is that there is so little good research on dry sanitation,” said Christine Moe, director of the Center for Global Safe Water at Emory University in Atlanta, Georgia. Interesting projects are taking place in Vietnam, Mexico and El Salvador, she said, that should provide some scientific backing for future sanitation work, but much more needs to be done. “This is definitely an area where housing, public health and sanitation advocates can and should collaborate,” Moe said.

22 WHO/UNICEF joint monitoring report 2010: “Progress on Sanitation and Drinking Water,” www.who.int/water_sanitation_health/monitoring/fast_facts/en/index.html.



HABITAT FOR HUMANITY/TAJIKISTAN

Olufta Kabutova pours water into a purifying filter outside her house in the district of Kumsangir, Tajikistan. The family bought the filter with a microloan from Habitat.

THE HEALTH-HOUSING CONNECTION

Tajikistan: Clean water eases fear of typhoid

Olufta Kabutova lived in fear that one of her five children might die of typhoid fever, the same disease that killed her husband in 1999. For years, the family's only source of water was a dirty and bug-infested ditch near their two-room adobe house in the district of Kumsangir, in the south of Tajikistan. "Due to using unhealthy water, my children became sick very frequently," Kabutova said.

More than 3.5 million people worldwide die each year from water-related disease such as typhoid, and 84 percent of water-related deaths are of children 14 and younger.

In Tajikistan, a mountainous country in Central Asia, much of the population lacks access to clean, safe water. A 2008 survey of the district where Kabutova and her family live identified 140 cases of typhoid, 120 of hepatitis, 450 of diarrhea and 260 cases of dysentery among the residents.

But Kabutova and her family no longer have to worry about what they are drinking. Since 2008, she and her sons, two daughters-in-law and their children have access to water purified by a filter they bought with a microloan from Habitat for Humanity Tajikistan.

The filter is built with layers of gravel and sand that the water passes through before coming out clean and ready to use for drinking and cooking. The family was trained in how to use and maintain the filter. "It is very easy to use, and its maintenance does not require additional expenses," she said. "Now we have no problems with fresh water."

Kabutova raises vegetables and fruits in her garden to feed her family of eight, and two of her sons send money earned from jobs in Russia—the family's only source of income. With a price tag of \$250, it would be almost impossible for Kabutova, and many in the village, to afford a filter. But the family can afford Habitat for Humanity's \$4 monthly microloan repayment rate.

Habitat for Humanity Tajikistan won the national Energy Globe Award 2010 for the water filter project.



A concrete drainage ditch built by Habitat in Moramanga, Madagascar. Habitat helped build concrete drainage ditches along the major streets, which keeps the heavily traveled roads from turning into solid mud slicks when it rains.

THE HEALTH-HOUSING CONNECTION

Madagascar: Holistic projects in health, housing

In Madagascar, off the southeastern coast of Africa, 93 percent of the population lives in overcrowded, unsanitary slums. Staking out plots of land off the main roads, families erect makeshift housing out of reeds and grasses, metal, plastic and any other material they can find, creating a cramped maze of tiny walkways between ramshackle huts.

The slum residents have no electricity, even though they may be only meters from a municipal grid, so they use paraffin and candles for lighting. Families of six, eight or even 10 share one-room shelters, which often have no foundation. They collect water from city taps, but they have no toilets. Often, a latrine consists of a hole in the ground with a tire around it. In the rainy season, the houses flood. The children play in the muddy pathways, which are flooded with feces and other waste. Malaria-bearing mosquitoes and waterborne diseases are only a few of the threats to these children's chances of reaching adulthood.

Habitat for Humanity Madagascar is taking a holistic approach to promote healthier communities. In 2009, Habitat and its partners—UN Habitat, local and municipal governments, and communities—launched a pilot project in a slum in Moramanga to build 62 houses and renovate 15. Families took out loans they can afford without undue financial stress, whether for a new one- or two-room house or for incremental improvements. The project also built six water points and two public latrines; created two garbage collection points, paved pathways and added drainage ditches and pipes to drain contaminated floodwater quickly.

Families were trained in basic financial literacy and loan management, and mosquito nets were distributed. A second project followed in Toliara.



Men, women and children scavenge a dump, now closed, in Steung Meanchey, near Phnom Penh, Cambodia, for trash that can be repaired and sold, a main livelihood for families living at the dump.

THE HEALTH-HOUSING CONNECTION

Cambodia: A new life

Habitat for Humanity Cambodia, 21 families and the Cambodian government partnered together for the 2009 Jimmy & Rosalynn Carter Work Project. The project was as much about health as housing.

All 21 families previously lived alongside the notorious Steung Meanchey dump in Phnom Penh—a dump that absorbed nine tons of garbage a day. Parents and children alike scavenged for items they could salvage and sell. Many who are now Habitat partner families made a living by repairing shoes found at the dump.

That living came at a cost. The rotting stench and stinging smoke constantly rising from the dump caused health problems. Phnom Penh officially closed the dump in the summer of 2009, but long after the ground nearby still seemed to move—alive with flies, fleas and putrid streams of water.

The 21 partner families who moved to a new Habitat site in Oudong city named their neighborhood the New Life Community. It's in Sra Por village, about 45 kilometers—and seemingly a world away—from the dump. Immediately to the west of the new community, rice fields stretch to the horizon. Just a few kilometers to the east, four temple tops rise from Preas Reachtrop Mountain.

HoutTera, a 23-year-old single mother, had survived by scavenging the dump for items she could resell. But once she had daughters, she started worrying for their health. Both baby Da Lali and Srey Pov, 5, have had frequent respiratory problems and bouts with diarrhea.

"I had to leave the baby at home with others while I would go out and work, and I sometimes got hot and didn't feel well," she says. "When I nursed my baby, the baby got sick."

When she moved her family to Oudong, Tera said, "I am most excited because I think the fresh air will improve our health. I know this will be a better place."

Habitat Cambodia will build with 52 more families relocating from the dump over the next three years. Partner families are also being trained in new, sustainable ways to make a living.