

PATH Safe Water Program

An Overview of PATH's Sanitation Efforts

A Common Need

Every person, regardless of where they live or how much they earn, shares the same basic need for safe sanitation. Lack of access to sanitation creates serious health risks for individuals and their communities. Despite the ongoing efforts of many governmental and nongovernmental stakeholders, large gaps in access to sanitation remain, creating a health burden that is concentrated in communities least able to cope with the problem.

During 2009 PATH conducted a landscape analysis to examine the primary barriers to safe sanitation in low-resource settings and to identify the sanitation technologies and systems that hold the most promise for expanding access. Many latrines provided to these communities have fallen out of use, with members of the community choosing to practice open defecation instead. Issues such as smell, filth, flies, child safety, and women's needs for privacy and security are often cited as reasons, but these factors are rarely addressed by latrine designs that are affordable in low-resource settings. PATH has identified an opportunity to advance low-cost, modular designs for latrines, incorporating user input to make them more appealing and encourage continuing use.

The Opportunity

Innovative sanitation solutions designed for low-resource settings can reduce illness and increase dignity for billions of people living in poverty. To have a sustainable impact, however, they must enable safe management of excreta (feces and urine) from one end of the Sanitation Value Chain to the other (see Figure 1). The latrine design should incorporate the benefits of research and development, take into account manufacturing limitations and advancements, and take into consideration the marketing

and installation components that are appropriate for desired health benefits and the community context.

From a latrine user's perspective, the first two steps in the chain are the capture and storage of excreta, both of which largely depend on latrine design. The next step is transport, to prevent unsafe overflow and maintain clean, sanitary conditions.¹ Frequently, households rely on informal and unsafe transport services that do not adequately contain and treat the waste, simply transferring the health risks to others as households usually do not want to pay for it once the excreta—and the associated health risks—have been physically removed from their immediate vicinity. The design of facilities should both enable potential options for excreta reuse and emphasize the benefits of balancing public and ecological health. The nutrient-rich materials can be beneficial commodities for either agricultural or energy production and reuse can generate demand for treatment as well as produce an income stream to pay for it.

Proposed sanitation solutions need to address gaps and barriers in the Sanitation Value Chain. They should consider key behavioral, technical, and market factors that can help meet the needs and satisfy the preferences of latrine users, while also offering attractive opportunities for sanitation service providers, including the workers who install latrines and transport excreta. An end-to-end analysis of the Sanitation Value Chain suggests that decentralized, and in some cases non-piped or dry sanitation systems, should be favored over conventional waterborne sewage systems going forward. Expansion of current waterborne models are not optimal or sustainable given the increasing scarcity of potable water, the large number of people in developing countries who are in need of safe sanitation, and the high density of informal

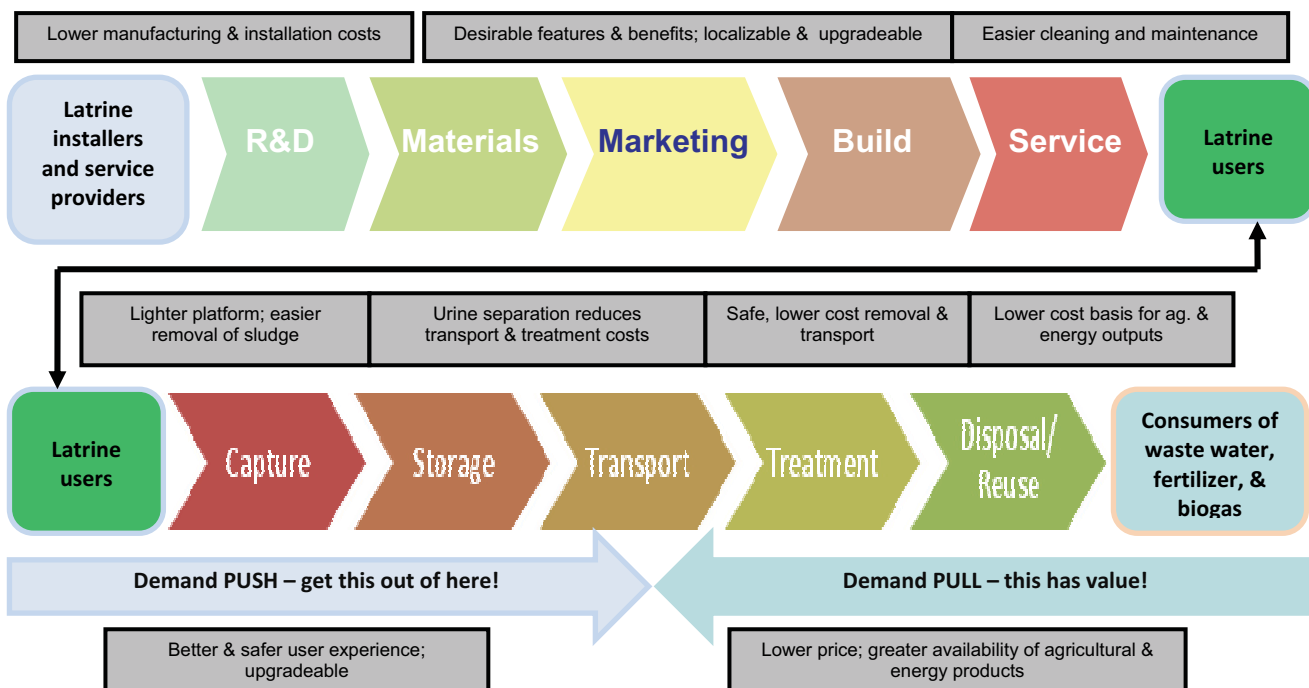
¹ Many promising dry sanitation models incorporate treatment in the storage stage, making it easier to transport and re-use the by-products of the sanitation system.

peri-urban settlements where many of them live. Decentralized systems offer opportunities to reduce contamination of water supplies, decrease the cost of treatment, and increase the potential for reuse of waste.

PATH was recently awarded funding from the Laird Norton Family Foundation with matching funds from PATH's Fund for Health Technology and funding from PATH's Health Innovation Portfolio to take a critical first step towards a sustainable sanitation solution for developing countries. The project will focus on designing an improved sanitation platform with primary input from latrine users and incorporating input from users along the value chain. The platform will act as a sanitary barrier between the user and the stored excreta and will adapt for a toilet or squat plate interface, depending on user preference. This platform would also offer a sturdy, secure support for the latrine shelter.

PATH's preliminary design process will explore user needs and preferences, as well as ongoing maintenance requirements, focusing initially on the Mekong region and eastern Africa. The project will build on current leading designs to begin development of a sanitation platform that is affordable, upgradeable, scalable, pleasant to use, and easy to maintain. Project outputs will include virtual computer models of proposed sanitation platforms, a protocol for incorporating user needs into an improved design, and a modular strategy framework for use by other stakeholders interested in addressing gaps in the Sanitation Value Chain. Better functioning, lower-cost sanitation options that address user and community needs will help communities scale up sanitation and reduce the global disease burden.

Figure 1. The Sanitation Value Chain



About PATH

PATH is an international, nonprofit organization that creates sustainable, culturally relevant solutions, enabling communities worldwide to break longstanding cycles of poor health. By collaborating with diverse public- and private-sector partners, PATH helps provide appropriate health technologies and vital strategies that change the way people think and act. PATH's work improves global health and well-being.

For more information

PATH

MAILING ADDRESS
PO Box 900922
Seattle, WA 98109 USA

STREET ADDRESS
2201 Westlake Ave. Suite 200
Seattle, WA 98121 USA

info@path.org
www.path.org

To learn more about global water resources:
http://www.path.org/projects/safe_water.php

