

PATH's Prototype Water Filter for Household Water Treatment

Health need

The World Health Organization estimates 1.8 million people, including nearly 4,000 children a day, die each year from preventable diarrheal diseases; many of these deaths are attributed to unsafe water. Various products exist today to treat and safely store water. Yet, according to international experts, less than one percent of the 1.1 billion people without access to improved water supplies are being reached with current efforts to promote household water treatment and storage (HWTS). Too few people have access to simple water treatment solutions that could save lives.

Technology solution

In collaboration with outdoor equipment manufacturer Cascade Designs, Inc. (CDI) and India-based design consultant Quicksand, PATH worked to design a prototype HWTS device specifically for the developing-world consumer. Proper assembly and use of the device can be figured out without prior knowledge or experience with water treatment products or practices. The size, shape, and physical appearance of the device are both appropriate and appealing. It meets the water consumption needs of low-income households, and it is a device that consumers aspire to have in their home. There is no chemical smell or taste in the treated water, and the cleaning of the device—a common practice in the developing world for household goods—can be done effectively with hands and fingers.

All of these factors for which we designed the prototype were learned through two major initiatives completed by PATH's Safe Water Project: an extended user study that examined how low-income households in rural and semi-urban areas of Andhra Pradesh, India, used and misused a variety of HWTS products, and the development of design guidelines for HWTS products for developing-world consumers. The prototype is PATH's physical application of the HWTS design guidelines. Many of the insights from these two initiatives are also being used to inform marketing strategies for low-income households who have little experience with HWTS products or water treatment in general.

Current status and results

After a small fabrication run of these preproduction prototypes, 15 prototypes were field tested in Andhra Pradesh, India during a three-month study to better understand its application in a developing-world setting. By testing this preproduction prototype in low-income households, we were able to validate the HWTS design guidelines.

PATH has finalized agreements with three Chinese manufacturers to develop, produce, and sell their own gravity-fed HWTS devices to low-income households. The new devices will follow general design guidelines and lessons learned from the prototype device. Each manufacturer will interpret the reference design style based on its own market knowledge, thus differentiating the products and creating competition between product lines.



PATH/Glenn Austin

The prototype device was designed for low-income households.

PATH has licensed the prototype design to three Chinese manufacturers to create and sell their own household water treatment and storage devices.

Availability

For more information regarding this project, contact Glenn Austin at gaustin@path.org.

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