

This is part of a series of project briefs discussing the activities, research findings, and field experiences of PATH's Safe Water Project.

OCTOBER 2011

Household water treatment and safe storage in Vietnam

Exploring commercial strategies to market safe water products

Background

Safe drinking water is essential to good health and quality of life. Waterborne diseases remain an issue of public health concern in Vietnam, and water-related diseases pose a serious threat in areas prone to seasonal flooding. Polluted drinking water sources and swampy conditions substantially increase the risk of diarrhea due to cholera and other waterborne pathogens. More than 70% of Vietnam's nearly 86 million people live in rural areas.¹ While a large majority of rural inhabitants have access to improved water sources, there are great disparities in access to clean water. For example, only 13% of people have access to clean water in some remote and mountainous provinces where ethnic minorities live.² Though boiling is a common practice in Vietnam, contamination during storage in the home poses a problem. One study in Vietnam found that 60% of stored drinking water that had been boiled was contaminated with fecal bacteria—almost 25% at a level indicating medium

or high risk. The study provided evidence that the source of fecal bacteria in the treated water is recontamination rather than poor boiling practices.³

Household water treatment and safe storage (HWTS) products are among the most simple, acceptable, affordable, and effective methods of getting safe drinking water to people who need it. Since 2007, PATH has been conducting an innovative safe water project with the goal of learning how best to produce, distribute, sell, and maintain effective HWTS systems. The PATH Safe Water Project is a five-year project, implemented in India, Cambodia, Malawi, Kenya, Tanzania, and Vietnam. In Vietnam since 2008, the work has encompassed a scan for available HWTS products, market research studies, pilot projects, and awareness-building activities. This project brief summarizes PATH's Vietnam-based activities and findings in the area of HWTS.

Project Activities

Research

PATH started its Safe Water Project work in Vietnam with a situation analysis. The first activity was conducting a **HWTS product scan** in 261 retail outlets to determine what types of products were available in Vietnam. This analysis was conducted in eight provinces within the

three regions of Vietnam in Spring 2008. It looked at both fast moving consumer goods like tablet and liquid chlorine additives, and durable goods such as filtering devices that were sold through commercial channels.

In the summer of 2008, the product scan was followed with a **product distribution channel analysis**. The purpose of this research was to answer the following questions:

- Who are the key players in HWTS product distribution in Vietnam?
- What are the business incentives?
- What other factors affect distribution?

The study involved numerous meetings and interviews with a range of players, including private manufacturers, distributors, and promoters; nongovernmental organizations; microfinance institutions; nonprofit water programs; and social marketing programs.

Following the product distribution channel analysis, a **consumer study** was conducted to evaluate the practices, perceptions, and preferences of members of the Vietnamese public in relation to household water treatment. In-depth interviews, focus group discussions, and observations were the research tools used to gather information from communities in four provinces— Son La in the northwest, Binh Dinh in the central region, and

Vinh Long and An Giang in the Mekong Delta. The study targeted low- to middle-income households—from US\$2 to US\$6 per day—and families with small children. The sampling included communities both with and without treated water sources, which included piped water and purchased bottled water.

Finally, starting in late 2009, PATH commissioned a **market segmentation study** designed to build upon the consumer research, in order to provide marketing guidance on key adoption levers, messaging, and delivery of these products to specific categories of consumers. Methods included in-home observations and interviews with both consumers and suppliers in 16 provinces throughout Vietnam. Research focused on two categories of product: durable products such as mineral pots and fast moving consumer goods such as powder/liquid/tablet additives.

Demonstration

Data from the variety of market research activities above were shared with regional and global stakeholders, and also informed pilot projects to promote and distribute HWTS products. The first activity of this type was a **project to improve HWTS practices in Thoi Son District, An Giang Province**, conducted in 2009. Under this project, PATH surveyed the local market to understand whether sufficient HWTS products were available in the community for access and use. We supported commune health centers to organize local events to raise public awareness of the importance of treating water and inform families about recommended practices. Finally, we trained commune health care workers to promote safe and hygienic HWTS practices and to offer Aquatabs®, a chlorine-based water treatment product, for direct sale in their daily contact with community members. In this pilot, an emphasis was placed on families with



Mother and child with a HWTS container.

children less than five years of age, as these children are more susceptible and more adversely affected by waterborne disease than the general population.

Building upon the lessons learned in An Giang, PATH conducted a second pilot **project to improve HWTS practices in Can Tho Province** starting in late 2010. To initiate the project, PATH and staff from provincial and district health departments conducted community promotion events in two districts to raise awareness about safe HWTS practices, especially targeting poor families with children less than five years of age. Safe storage containers were provided to attendees in half of the communes to test whether the containers had an

impact on product uptake and correct and consistent use. PATH and partners conducted training for commune health workers, and health workers began a program to sell Aquatabs® to families during home visits. Researchers conducted endline surveys to evaluate the effects of pilot interventions on the knowledge and awareness of correct water treatment and storage practices, and the uptake, correct use, and consistent use of Aquatabs®.

In support of the Can Tho pilot, PATH conducted several specific activities to raise awareness in the public about the importance of safe water treatment and storage, and create demand for HWTS products. In October 2010 with local partners, PATH organized initial social marketing events in more than 20 communes in Vinh Thanh and Co Do districts to emphasize the importance of HWTS and to share information about Aquatabs®.

In April 2011, in cooperation with the National Center for Rural Water Supply and Environmental Sanitation and Lien Aid, large social events were conducted in each district at which community leaders and health professionals presented information about the importance of clean water for health, different methods for safely treating water, and proper storage practices. Image 3 shows a poster developed for the events. Nationally known comic actor Xuan Bac, UNICEF Goodwill Ambassador for Water, Sanitation, and



A mineral pot is a common example of a durable HWTS product.

Hygiene, participated in the events, and starred in a nationally aired TV spot that helped spread the word about safe practices for HWTS. In addition, billboards with safe water treatment messages were created and posted at strategic locations throughout the districts, and the commune loudspeaker broadcasting system was used to issue monthly messages about safe water treatment and storage.

Key Findings and Results

Research

Existing products and market channels

The HWTS product scan and distribution channel analysis yielded very useful information about the availability and movement of different products for water treatment and storage in Vietnam. *Table 1* below shows the results of the product scan.

The channel analysis helped the PATH team and its partners better understand how the products above



Poster displayed at social events featuring Xuan Bac, well-known comic actor and UNICEF Goodwill Ambassador

move from the manufacturer to the consumer in Vietnam. The following specific findings from the channel analysis research helped shape the pilot activities that followed:

- Commercial distribution in Vietnam is heavily influenced by political structure and authority. Government players have influence at each administrative level—national, provincial, district, and commune.

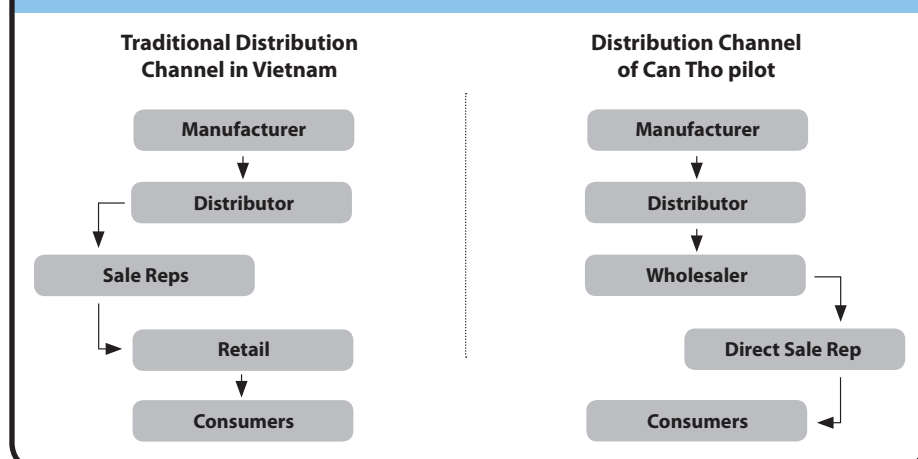
- Sub-distributors are common in the Vietnamese context, serving local or regional geographies. They typically have a good network of outlets within their geography.
- Sales representatives play an important role in generating product demand. They are employed either by distributors or manufacturers. They generally work for salary, sometimes for commission.
- Retailers in Vietnam are usually family-run shops, sometimes with larger showrooms in cities, often roadside stands in villages. Larger retailers receive visits from sales representatives from large companies, but there is a large segment of small retail outlets that simply buy their wares from district or provincial markets and take them back to the village to sell.

Research showed that the number-one motivation for distributors and retailers is profit. They are generally passive, tending not to push products, and prefer to carry products they can turn over quickly. Therefore, in order to successfully move HWTS products, it is helpful to generate demand among consumers. Configuration of sales representatives and public promotion are key to overcoming passive channels. *Table 2* illustrates how the pilot project in

Table 1. Findings from HWTS product scan (n= 261 retail outlets)

PRODUCT	FREQUENCY FOUND IN SCAN	PRICE
Alum (<i>does not kill bacteria</i>)	Very common, sold in bulk at market	US\$0.0625/1kg (~\$.000005/treated L)
SafeWat (<i>liquid hypochlorite solution</i>)	Found in 3 pharmacies	US\$0.25/150mL bottle (~\$.00025/treated L)
Water treatment powder	3 products, found in 4 pharmacies	US\$0.31/10 sachets (~\$.000155/treated L)
Chloramine/Clonazone	Not found in any outlet, pharmacies can order	US\$0.036/tablet (~\$.036/treated L)
Candle ceramic filters	7 products in multiple outlets	US\$7-\$18
Ceramic, cartridge, mineral stone filters	69 products in multiple outlets	US\$9.5-\$20 Filter replacement: US\$1-\$7
Ceramic, cartridge, mineral stone filters requiring electricity	4 products	US\$20-\$70
44 products	44 products	<US\$50

Table 2. Typical distribution channel compared with pilot project distribution channel.



Can Tho applied this lesson in reshaping the typical distribution channel structure that is found in Vietnam by inserting sales representatives at the critical point between the supplier and the buyer.

Consumer knowledge and practices

Along with understanding the supply side of the HWTs product landscape, as described above, the consumer study was the first step in helping PATH to better understand and characterize the demand for HWTs products. The study found that although respondents across the study sites understand that ingesting unsafe water causes waterborne diseases and diarrhea, especially among children, many people still drink water directly from contaminated sources. Boiling drinking water is either not done consistently because it is time and energy intensive, or it is not done correctly. Where piped water is available, there is a high level of confidence in its cleanliness and safety, when in fact it is not always safe and often requires further treatment.

Findings further indicate that middle-income households tend to use commercial household water treatment methods more than low-income ones, and most respondents preferred water filters because of ease of use and safety. Some low-income households consider water

filters too expensive. There is some interest in using purifying powders and solutions as a cheaper alternative, but the process is considered burdensome.

Findings from all study sites indicate that women are responsible for collecting, transporting, treating, and storing water for household use, although decision-making is generally discussed between men and women.

Through this research, several strategies were developed for marketing and introducing HWTs products. These strategies were:

- Make use of local community meetings, target both men and women.
- Involve public and private health facilities.
- Use endorsement by trusted leaders to lend credibility.
- Demonstrate and trial products to help convince consumers of the product's effectiveness.
- Focus communication strategies on drinking safe water, hygienic household practices, and appropriate self-treatment of mild diarrhea.

Market segments

The market segmentation study returned some valuable information about consumer

attitudes, market segments, and potential marketing messages. The study found that nearly all respondents (>99%) claimed to treat their drinking water, yet upon observation, only 75% of respondents demonstrated proper steps in their respective method. The study looked at the relationship between demographics and attitude about water treatment and found that wealth, migration from countryside to cities, and having children under the age of five in the household were strong determinants of awareness and tendency to treat water at point-of-use.

The segmentation analysis divided the market for HWTs products into five segments, which are described in Table 3 below. This analysis can be used by public- or private-sector stakeholders who are selling or encouraging use of HWTs products. The data help a HWTs product marketer prioritize the consumer segments most relevant to a specific product, and indicate which messages will most clearly resonate with those consumers. In order to make this information more accessible, a segmentation tool was developed (see Figure 1). This easy-to-use Excel-based tool distills the data from the analysis and allows a user to access different information about consumer preferences, key messages, and distribution channels using page tabs and pull-down menus. (This tool is available from PATH by request.)

The market segmentation research revealed an interesting finding related to chlorine-based additive products. The market study determined that while awareness of these types of water treatment products were very low by the total market (those who had not used this product), the respondents who had used these products reported higher satisfaction in almost all categories. This finding suggests that it is challenging to encourage trial of chlorine-based water treatment products, but that if this challenge can be overcome, then some level of satisfaction could be anticipated, and hypothetically, uptake could be substantial. This finding guided the team toward its

Table 3. HWTS consumer segments

	DESCRIPTION	IMPLICATIONS
Aspirers (34%)	This segment is the most strongly motivated by brand and aesthetics and are looking for the latest in technology , for which they are willing to pay more. They look out for visible, palpable proof of water quality – clarity, taste, and smell	Product: Good-looking product, visible high technology Marketing: strong, reputable brand
Convenience Deal Seekers (19%)	Strongly motivated by good deals – i.e., discounts, extra accessories Find boiling very inconvenient They are less likely to be surrounded by water treatment vendors	Message and product: eliminates need for boiling Marketing: in-store promotions Distribution: direct sales?
Practical Nurturer (18%)	Family health top priority – bacteria and unclean water are strong concerns – government certification is reassuring They actively look out recommendations from friends and salespeople They value easy-to-use products with easy to find spare parts	Product: easy to use, spare parts Message: family health, bacteria Marketing: in-store retailer push; word of mouth
Uninvolved (16%)	They tend to boil water They are less motivated buy water treatment products compared to other segments They are more likely than other segments to be lapsed users of durable HWTS products	Reaching this target would require extensive investment in communications and marketing to increase enthusiasm in category
Established Middle Class (13%)	This segment is in a highly competitive retail environment with easy access to water treatment products They seek guidance on the right product to buy through media, advertising, and salespeople recommendations. They appreciate high quality, good looking products, and a good deal	Marketing: info-advertising that cuts through noise, in-store retailer push and promotions

next activity—putting some of the market research recommendations to the test in pilot projects that sought to increase awareness of safe HWTS practices and promote a chlorine-based water treatment product through social marketing.

Demonstration

Water treatment and safe storage pilots in An Giang and Can Tho provinces

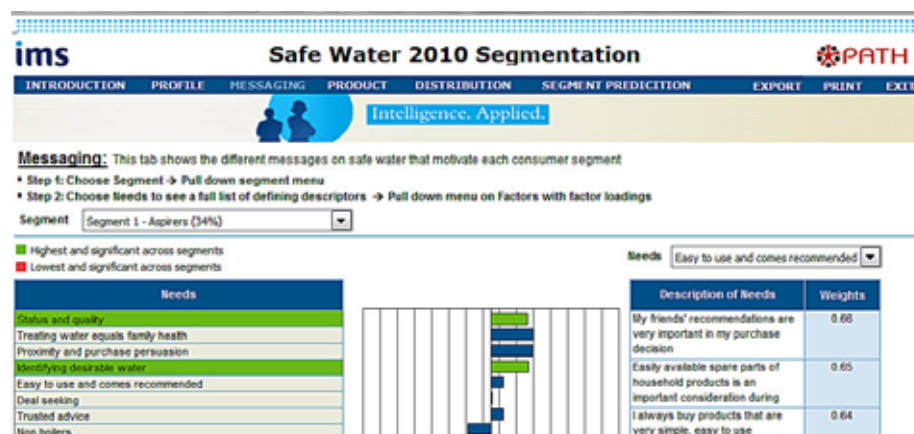
The pilot projects provided a valuable learning opportunity while also aiming to raise awareness and improve safe water practices in the selected communities. Though the pilots were similar, the first project in An Giang was the smaller of the two. This early project showed that awareness-raising and social marketing activities could encourage trial use of a chlorine-based product, though adoption of the product for ongoing use was rare. It also highlighted some lessons to take forward to the second pilot, such as the importance of good training for the health care worker sales representatives.

The Can Tho project was larger and more extensively analyzed. The following are some of the key findings:

- Awareness of proper HWTS practices and Aquatabs® increased over the course of the intervention, though overall uptake of Aquatabs® was small in the project population (<1% reporting current use).

- The number one deterrent to consistent use of Aquatabs® was its chlorine smell and taste. This finding persisted despite an improved product with reduced smell compared to the version used in the An Giang pilot.
- In the pilot, nearly 25% of households approached by collaborators chose to purchase Aquatabs® after receiving their initial free supply.

Figure 1. Market Segmentation Tool



- Word-of-mouth marketing by commune health workers, family, and friends is more effective at increasing awareness than billboards or loudspeaker announcements.
- Sales data showed approximately equal sales in communes that received free storage containers and those that did not, indicating that it is not commercially advantageous to provide free storage containers.
- The collaborators' incentive structure was weighted heavily toward stipends, which were more significant than the commissions earned per unit sold. However, when asked whether they would continue selling Aquatabs® after the project stipends end, the most successful collaborators indicated that they were willing to continue.

Relevant Learning

After nearly four years of project implementation, with strong support from local government partners and positive collaboration with key private-sector partners, PATH has shown the following:

1. In the populations we studied, there is room to improve safe water treatment knowledge and practices.
2. Some HWTS products are present in the retail market at all levels—in big cities, provincial and district centers, and the commune level.
3. There is growth potential for HWTS products in both durable goods and fast moving consumer goods categories though chlorine-based treatment products face consumer-acceptability challenges in the market.
4. Local health workers are viewed as trusted sources of water safety and hygiene information by households and can be a reliable mechanism through which to educate the population and distribute effective HWTS products. Proper incentives for health workers as sales persons requires careful attention under this system.
5. Providing messages about waterborne diseases and information about proper methods for treatment and storage can help improve knowledge and practices and build demand for HWTS products.

Given the importance of safe water to public health, and the importance of addressing diarrhea-related deaths in children less than five years old, these are important findings for Vietnam. PATH's activities have laid the groundwork for future activities by government, donors, and organizations seeking to make an impact in this area. **For more information and contact details, please visit PATH's website or email us: www.path.org | info@path.org.**

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- Zuellig Pharma, Medentech.

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