

have an idealized view of people who treat water regularly but doubt that they can emulate them, either because they lack the resources or the discipline. Messages need to explain how commercial HWTS products can enable “ordinary” people to achieve their aspirations, including safeguarding their family’s health and investing in their children’s education.

their strategies to different audience segments and their disparate beliefs, concerns, and motivations.

Some of the groups that have the greatest influence over household decisions to treat water—such as rural women and older people—question the very need for treatment. Overcoming their resistance to routine treatment will require basic education on the actual quality of water, the impact of contaminated water on health, and the benefits of treating water with effective products.

Other groups, such as urban men and women, already feel motivated to purify their drinking water but are concerned that year-round treatment is too expensive and time consuming. To persuade consumers to invest in commercial HWTS products, businesses must design appropriate, attractive, affordable products, build distribution networks, and create financing options that respond to the consumer preferences revealed in this research—and then promote the convenience and affordability of their solutions.

Conclusion

There is little knowledge of and even less experience with commercial HWTS methods in Andhra Pradesh, but people do recognize the need for at least occasional filtering and boiling of their drinking water. This suggests that there is a viable, if limited, market for commercial products. To change prevailing attitudes towards water treatment and generate demand for commercial products, marketers must tailor

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>> PROJECT BRIEF



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

JUNE 2009

Formative Household Research in Andhra Pradesh

Background

Many people in rural, periurban, and urban areas of India lack access to safe water. While the government has set ambitious goals for the public provision of potable drinking water, the private sector can also play a role by providing effective and affordable household water treatment and safe storage (HWTS) products. These enable families to improve the quality of their own drinking water. PATH’s Safe Water Project seeks to facilitate commercial markets for HWTS products that meet the needs of low-income consumers in India.

New marketing campaigns and approaches to behavior change may be needed to prompt



PATH/Greg Zwisler

Indian families to adopt HWTS products. PATH contracted RTI International to conduct formative household research in the state of Andhra Pradesh to inform the development of a commercial marketing strategy that will appeal to consumers’ perceived needs, motivations, and aspirations. The research had two objectives: first, to gain an in-depth understanding of middle- and low-income consumers’ perceptions, attitudes, knowledge, and practices related to

Many women in rural Andhra Pradesh feel that traditional water treatment methods, such as boiling and cloth filtration, are adequate.



water treatment and storage; and, second, to suggest which consumer segments would make good targets for HWTS marketing efforts.

Research Methods

Data sources

The research began with a Rapid Assessment Process (RAP) in January 2008. Over a three-day period, teams of fieldworkers conducted three focus groups discussions, six in-depth interviews, and about ten hours of direct observation in each of eight study communities. Participants included men and women, low- and high-income households, and rural and urban dwellers. This qualitative research process produced a rich description of households' HWTS practices, the beliefs and motives underlying those practices, variations across subgroups and across seasons, and barriers to adopting practices.

The RAP findings helped researchers develop a series of quantitative data collection instruments, which were fielded in April–May 2008. A household survey collected detailed information on knowledge, attitudes, and practices regarding the collection, storage, and treatment of drinking water and related issues, such as sanitation and health, from 1,000 households in 50 communities. Half of the survey respondents also completed a stated preference module, which asked them to choose between pairs of HWTS products with varying product attributes; these attributes included different features, costs, and sales outlets. Data from this module can be used to measure consumer

preferences and willingness to pay for various commercial HWTS product attributes.

To better understand the local context, field workers interviewed an official in each community surveyed—a member of the *Gram Panchayat* in rural areas and a ward officer in urban and metro areas. They asked about the community's demographic characteristics, economy, infrastructure, water sources, sanitation, and other topics of interest.

Fieldworkers collected samples of drinking water from 8 of the households surveyed in each of 25 communities, for a total of 200 samples. Samples were also taken from 37 community water sources, including private and public taps, private and public wells, surface water, tanker/vendors, and commercial water purification plants. The community samples were not matched to households. Both the household and community water samples were tested for total coliforms and *E. coli*. The community samples were also tested for physical and chemical indicators of contamination, such as pH, nitrates, fluoride, calcium, iron, sulfates, chlorides, and total dissolved solids.

To complement the water testing, researchers reexamined data on water quality collected by previous RTI studies in Andhra Pradesh and the neighboring state of Maharashtra. The larger size of these datasets permits an analysis of the relationships among actual water quality, perceived water quality, and HWTS practices.

During the final phase of the research, nine follow-up focus group discussions (FGDs) were

conducted to fill in gaps and probe further into certain findings. Participants included men and women of varying socioeconomic status from peri-urban and rural communities. Two discussion guides addressed triggers for treating water, influences on treatment behavior, perceptions of commercial HWTS products, attitudes toward different sales outlets, and other topics of special interest.

The survey sample

The household survey included 20 households from each of 50 communities, for a total of 1,000 respondents. To ensure that the sample was representative of the population of Andhra Pradesh, communities were first stratified by region, the existence of water quality problems, metro versus non-metro area, and rural-urban setting. Most (72%) of the sample was rural, while 20% came from urban areas. The remaining 8% came from Andhra Pradesh's three metro areas, which comprise the state's largest cities. Urban and metro areas are combined in the findings reported here.

Household heads made up 36% of respondents and had an average age of 44; their spouses comprised 48% of respondents and had an average age of 37. The rest were adult children of the household head who were involved in household decision-making. Almost half (46%) of all respondents were female; 48% had no education.

Because a large majority (93%) of households fell below the poverty line, the analysis used four other measures to indicate socioeconomic status:



Naveena Ambatipudi and A. Mahender

Water is often collected and stored in traditional metal bhindas. Wide-mouthed and lidless, bhindas are not ideal for preventing contamination.

Safe storage

Common water storage practices increase the risk of contamination. Educational campaigns can draw on the concerns of the older generation to promote the following behaviors:

- **Storage vessels:** Water should be stored in covered, narrow-mouthed containers, ideally with spigots to dispense the water.
- **Cleaning:** Storage vessels should be washed regularly with soap as well as water.
- **Water handling:** People should avoid dipping their fingers when drawing water out of a container, and they should not use the same cup for dipping and drinking.

Financing and sales

How and where HWTS products are sold also affects purchase decisions. Companies should consider:

- **Offering installment plans:** Installment plans are the most widely accepted way for low-income consumers to finance the purchase of household goods.
- **Selling through santas, department stores, and mobile salespeople:** Consumers want a wide selection of products, competitive prices, good service, and product guarantees when they shop for HWTS products; these are not available at local kirana shops.

Demand creation and marketing

Carefully designed messages can combat many of the common obstacles to household water treatment. To reach as many people as possible, marketing campaigns should employ both the mass media (especially television and newspapers) and trusted authorities

(such as doctors and teachers) to disseminate the following messages:

- Water quality is a year-round concern, even when water appears to be safe. Consumers do not fully understand the link between water and health. Explaining that the risk of illness is present year-round, describing how water treatment can prevent illness and safeguard children's health, and raising concerns about invisible contaminants in the water may cause people to reassess their confidence in the water supply and consider treating water routinely.
- Commercial HWTS products can save time and money. Consumers assume that treating water is time consuming, inconvenient, and—if commercial products are involved—expensive. They may be influenced by messages that promote the speed and ease of operation (including the ability to incorporate safe storage and water handling) of certain commercial HWTS products. It is also important to explain how HWTS products can save money over the long term by preventing illness, reducing medical expenses, and decreasing time lost from work.
- Commercial HWTS products are effective and reliable. Experience with these products is so limited that it is understandable why women are wary of buying them. Emphasizing a product's effectiveness and durability, offering warranties, and getting BIS certification and doctors' endorsements can increase consumer confidence.
- Treating water can help families achieve a better life. Consumers

Advertising and promotion

Six in ten survey respondents had heard messages about treating and safely storing water at home. Television, doctors, and family and friends were the most trusted sources of information on household water treatment and other water-related issues (Figure 5).

The follow-up FGDs revealed more detail about the influence of family members. In both urban and rural areas, children play an important role in encouraging mothers to treat water because they pass on treatment messages from teachers. Husbands are also a positive influence, especially in urban areas. However, older family members typically discourage household water treatment, calling it unnecessary and a fad. They believe that younger people who routinely treat water are being overly cautious and that the focus should be on storing water safely.

In the follow-up FGDs, male and female participants were equally aware of commercial HWTS products. Women generally got their information from television, while men also mentioned newspapers, radio, and teachers. Over half of the FGD participants had seen advertisements for commercial HWTS products on television and in newspapers, although they could not recall brand names. They found the ads credible and convincing, and both urban and rural participants agreed that the ads made them more inclined to purchase the product. They also regarded the ads as a good source of general information about the importance of treating water.

Implications for Marketing HWTS Products

Given widespread confidence in the quality of drinking water, misunderstandings about the link between water and health, and concerns about the expense and feasibility of year-round treatment, the market for commercial HWTS products in Andhra Pradesh is likely to be small initially. However, the findings suggest effective strategies that can help businesses establish and eventually broaden the market for commercial HWTS products among low-income consumers.

Targeting audiences

Certain groups are more likely to treat water and more open to commercial HWTS products. Marketers should consider targeting:

- **Urban residents:** They typically have greater incomes, access to markets, and exposure to commercial HWTS products. They are also more likely to believe in the need for treatment, either because they perceive the source to be unsafe or store water for many days at a time.
- **Household heads age 30 or younger:** They are more likely to be educated, literate, and open to water treatment messages. They are also more likely to have children who carry home water safety messages from school.
- **Households that rely on an untreated water source:** They are more likely to question the safety of their water and thus to consider home treatment.

- **Households that do not invest much time or money on their water supply:** They are more willing to devote additional resources to treating water.
- **Men:** They feel less confident than women about the safety of the source water and the effectiveness of traditional methods. They are also more likely to see a link between water and health and to believe that commercial products are highly effective.

Product design

The stated preference exercise clearly shows the impact of product design on purchase decisions. Manufacturers need to recognize and respond to consumer preferences regarding:

- **Product type:** Consumers prefer filters and other durable products to consumables. They are also wary of chemical additives, so extra care must be taken when explaining and promoting combination products.
- **Product features:** Consumers place a high value on effectiveness, shorter treatment time, and ease of operation and maintenance. Because water aesthetics are also important, products should be designed to make water look, smell, and taste better.
- **Familiarity:** Consumers feel more comfortable assessing and buying goods they are familiar with. They may be more likely to buy HWTS products that resemble existing filters, are made of familiar materials, and have familiar functions.

- **Caste:** According to government definitions, almost one-quarter (23%) of respondents belonged to Scheduled Castes and Scheduled Tribes, which generally have the lowest socioeconomic status. Two-thirds belonged to Other Backward Classes, which are also considered socially and educationally disadvantaged. Six percent belonged to open castes, which are better off and ineligible for special government benefits.
- **Home construction:** About eight in ten households lived in pucca houses, that is, homes constructed of good-quality materials.
- **Socio Economic Classification (SEC):** The Market Research Society of India classifies households into five urban and four rural SEC groups based on the education and occupation of the household head. About half the sample was either in the bottom rural or bottom urban classification.
- **Asset index:** Researchers created this index to proxy wealth and defined the bottom quartile as low income and the top quartile as high income.

Findings on the Water Supply

Water sources

Safety is a key consideration in how people choose their source of drinking water. The households surveyed had access to four different community water sources, on average, but most used only one (37%) or two (53%) sources. Nine

in ten households selected their source of drinking water based on its perceived safety. Safety concerns were also the main reason that households gave for using certain water sources only for washing and not for drinking.

Households did not always take action, however, even when they believed a source was contaminated. Respondents reported that 32% of the water sources available to them were contaminated with chemicals, minerals, germs, sewage, or other substances. Among the households affected, 34% either stopped using the contaminated source entirely or treated the water first—but over half of households did not change their use of the contaminated source.

Most households rely on a private (41%) or public tap (37%) for drinking water. According to the RAP, people prefer tap water for drinking and cooking because it is likely to be treated at the source with bleaching powder by the government or to come from a source considered safer than the other alternatives. Two-thirds of survey respondents who rely on private and public taps reported that the water was treated at the source, as did about half of those using water from tanker trucks, water from commercial purification plants, and bottled water.

About half of survey respondents (54%) were very satisfied with their main source of drinking water, 38% were somewhat satisfied, and only 7% were dissatisfied. The latter two groups were asked what they would like to change about the drinking water situation. Two-thirds mentioned improvements in the availability of or access to existing water sources. Far fewer raised quality issues, such as protecting

water sources from contamination (16%) or treating water at home (4%). Opinion was divided over who should be responsible for improving water quality and paying for those improvements: a small majority pointed to the government (60% and 55%, respectively), but more than one-third believed these were family responsibilities.

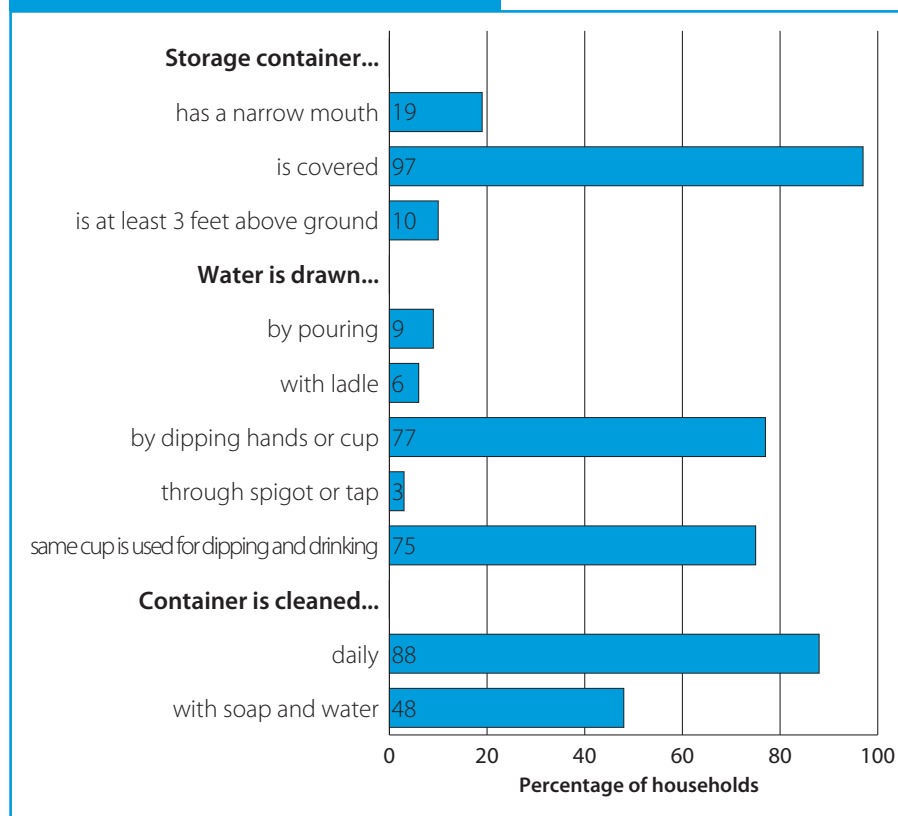
Most community officials ranked the water supply as either the first or second most important improvement needed in their community. By contrast, just one in ten survey respondents said the household water supply was the most important improvement that they would like to see in their community over the next decade. One in four felt that water quality was the most important water and sanitation problem facing their community.

Storage practices

Nearly all households (95%) store drinking water at home, but not always safely (see Figure 1). People typically collect and store water in the same vessel, mostly broad-mouthed metal pots called *bhindas*. Only 17% of households safely store their drinking water; that is, they store water in a covered narrow-mouthed container and do not dip hands or cups into the water.

Seven in ten survey respondents were aware that dipping dirty hands in storage containers can contaminate the water. However, over 75% reported dipping hands or a cup into the storage vessel to draw drinking water. Three-quarters of households use the same cup for dipping and drinking. Only 3% own a storage vessel with a spigot.

Figure 1: Household water storage practices



Eighty-eight percent of households clean their storage container daily, and 11% do so twice a week—but only about half (48%) of households use soap as well as water to clean them. In the follow-up FGDs, older participants were especially concerned about keeping storage containers clean and covered; they believed this was far more important than home water treatment.

Perceived versus actual water quality

According to the follow-up FGDs, people judge the quality of water

based on its color, smell, and taste. By these standards, nine in ten household survey respondents rated their water as excellent or good (see Figure 2). This may explain why nearly all respondents (97%) believed their water carried little or no health risk, even though 32% acknowledged the presence of contaminants. When judging the safety of the water supply, women—but not men—also consider other factors, such as how long the water was stored, family health, and treatment at the source.

People are more cognizant of chemical than biological

contamination. Nineteen percent of community officials in rural areas and 7% in urban areas reported problems with the quality of major community water sources, mostly involving fluoride and other chemical contaminants. Few believed local water sources had microbial contaminants.

In contrast to common perceptions about water quality, 15% of household water samples tested positive for fecal coliforms, as did 24% of community samples (all from public rather than private sources). In addition, among the 37 community water samples tested, 49% exceeded Indian standards for calcium, 41% for fluoride, 24% for chloride, and 22% for sulphate. Fluoride was more prevalent in the south, while the other chemical contaminants were more prevalent in rural areas.

An analysis of larger datasets from Andhra Pradesh and Maharashtra found that respondents' perceptions of water quality are not correlated with actual water quality. But it is these perceptions—whether accurate or not—that drive behavior; households with lower perceived water quality are more likely to treat water at home. Households are more likely to believe that their water quality is poor if they:

- Belong to a higher socioeconomic group, as measured by either income or caste.
- Understand the link between water quality and diarrhea.

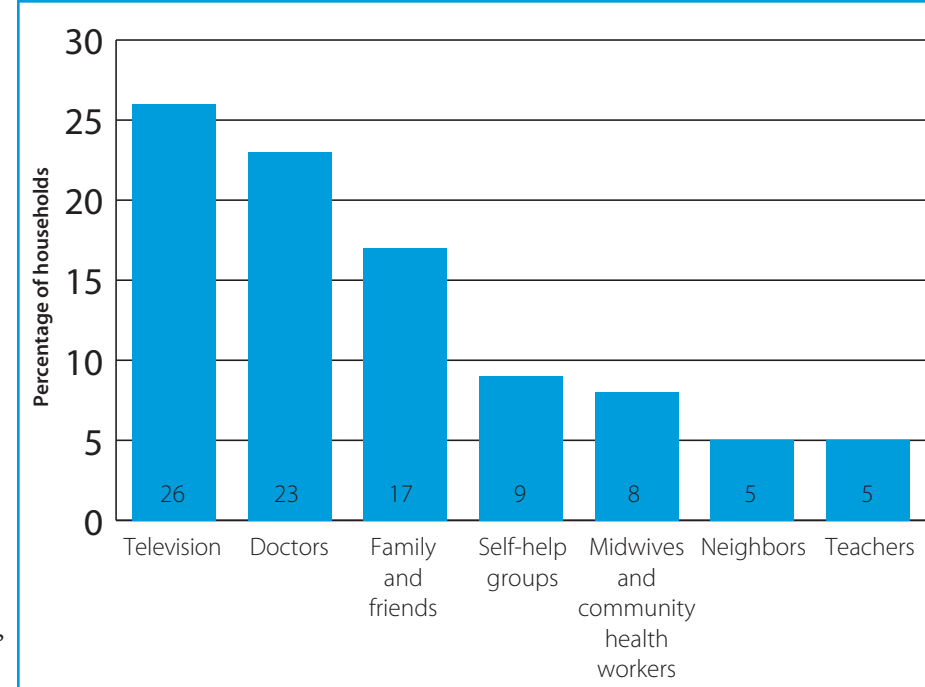
prefer department stores. Both of these outlets offer a wide selection of products, good service, and competitive prices. Mobile salespeople are the first choice of rural residents, Scheduled Castes and Tribes, Other Backward Classes, and people living in lower-quality housing. Mobile salespeople have the advantage of familiarity and are also known to return and replace broken or malfunctioning products; people feel capable of judging their trustworthiness.

It is possible to quantify and compare the relative importance of these factors by calculating marginal willingness to pay (WTP). Although WTP is expressed in monetary terms, it does not represent actual prices. Rather, WTP is a way to measure perceived utility to the consumer—in other words, the magnitude of consumer preferences for different products and product features. The results of this analysis show that, keeping all other attributes the same, respondents are willing to pay:

- Rs 1,060 (US\$25) more for a filter.
- Rs 545 (US\$13) more for a product that removes all germs.
- Rs 240 (US\$6) less for a product that takes one hour longer to treat water.
- Rs 1,065 (US\$25) less for a product that is sold in a kirana shop.

Figure 4 illustrates how respondents view the trade-offs between different factors. The graph shows that the proportion of respondents who would likely purchase a commercial HWTS product declines as the purchase price rises from 0 to 4,000 rupees, as monthly ongoing

Figure 5: Most trusted source of information about home water treatment



costs increase from 20 to 200 rupees, and as treatment time jumps from one to four hours. Depending on the price point, however, consumers may prefer a slow but affordable product over an expensive but efficient product.

Financing

Because the cost of commercial HWTS products is a common concern, the follow-up FGDs inquired about buying goods on credit. People strongly believe that installment plans are suitable for purchasing HWTS products, but loans are not. Loans carry some social stigma, are difficult to pay off, and are only considered appropriate for business, agriculture, and personal (e.g., wedding) expenses. In contrast, people feel comfortable buying household goods on installment plans and regularly do so from mobile salespeople, local shops, and department stores. A

few participants noted that HWTS products have not been available on installment and thought that many people would buy them if they were.

Confidence in HWTS products

FGD participants expressed a preference for familiar products, such as traditional methods and ceramic filters. Women are especially reluctant to trial or purchase unfamiliar goods.

FGD participants also reported that they would feel more confident buying HWTS products that:

- Are sold by a well-known and reputable company.
- Come with a guarantee or warranty.
- Are certified by the Bureau of Indian Standards (BIS).
- Have passed product tests.
- Are endorsed by doctors.

"We cannot see any impurities, so I say confidently that my water is pure." Female FGD participant, Vavilathota

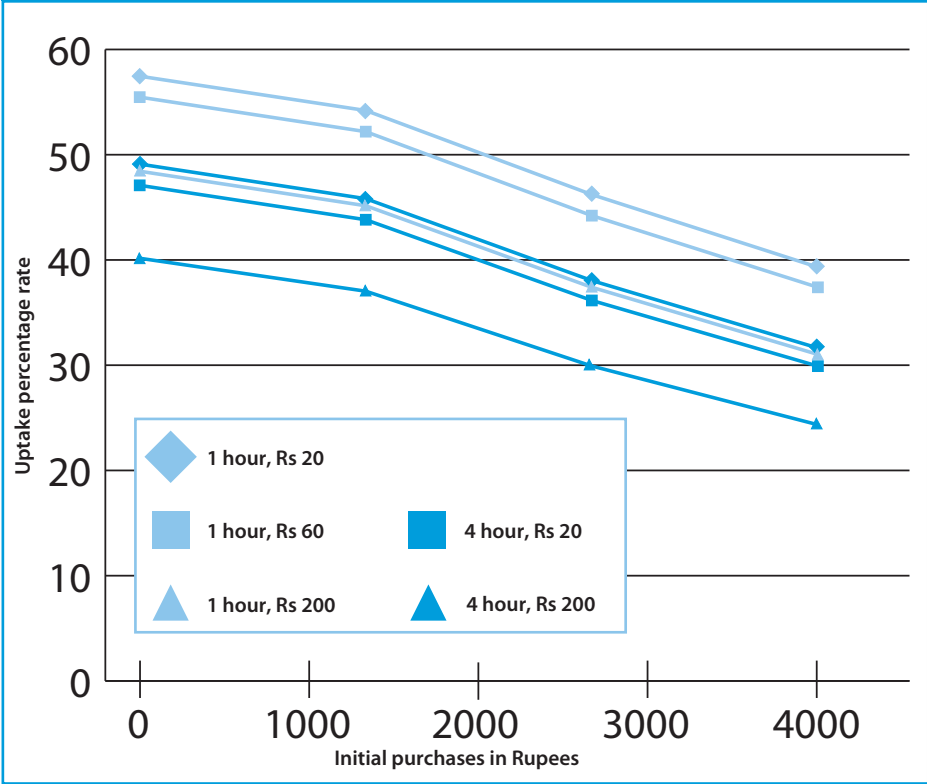
Findings on the Demand for Commercial HWTS Products

Product preferences and willingness to pay

The stated preference module found that consumer purchasing decisions are influenced by the following five factors:

- **Cost:** Consumers are less likely to select a HWTS product as its cost rises—either the initial purchase price or monthly ongoing expenses. Large increases in the upfront cost appear to reduce the likelihood of buying a commercial HWTS product more than small increases in ongoing costs. This suggests that spreading payments for HWTS products over time may increase product uptake.
- **Type of product:** Consumers strongly prefer durable products, such as filters, to consumable products, such as packets of disinfectants. They appreciate the taps and storage capabilities of durable products and worry about the potential dangers of chemical additives.
- **Effectiveness:** Consumers prefer products that kill all (rather than most) germs, worms, and microbes and thus produce

Figure 4: Impact of initial purchase price, monthly ongoing costs, and time to treat on likelihood of respondents purchasing a filter from a mobile salesperson that eliminates all germs



safer water. Open castes, people living in pucca houses, and rural residents place a higher value on effectiveness than others.

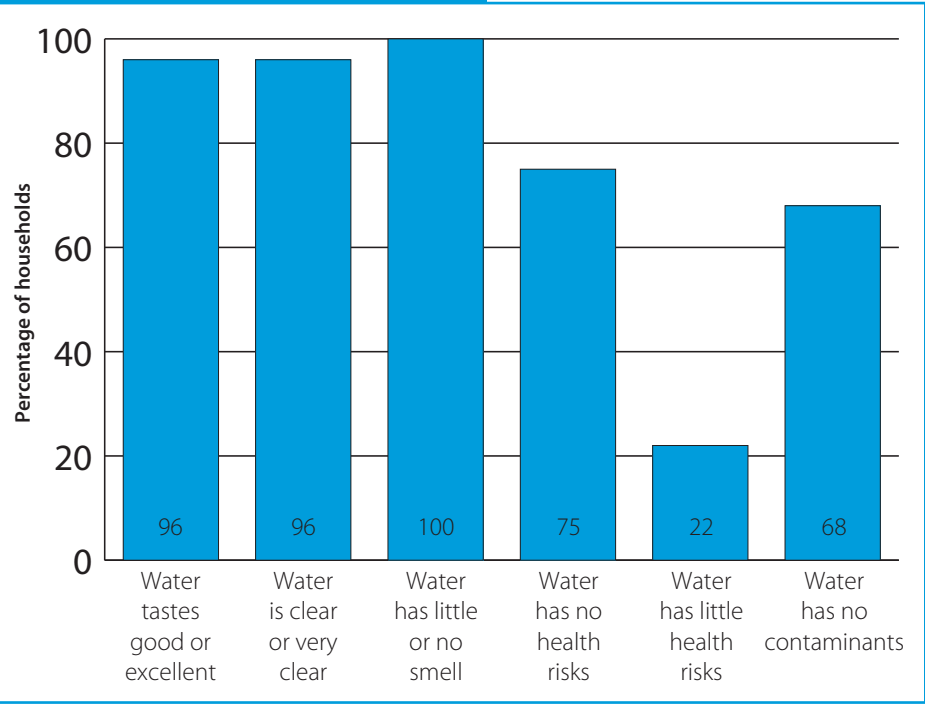
- **Treatment time:** The longer a HWTS product takes to treat water, the less likely people are to choose it. Open castes, people living in lower-quality houses, and women are more sensitive than others to treatment time.

- **Sales outlets:** Consumers agree that they would rather not buy HWTS products from local kirana shops, which FGD participants say are expensive, have a limited selection of products, and rarely offer guarantees. Men, urban dwellers, open castes, and people living in good housing prefer to buy HWTS products at santas (weekly markets), while women

“Filtering with cloth and boiling are easy methods...because they involve less expenditure. I went to my neighbor’s house, there I saw a machine fixed on the wall.... It is very good. It cleans water...but it is costly. If it is cheap, then we will buy.”

Female RAP interviewee, Mamadapalli

Figure 2: Perceived quality of drinking water



Health concerns

Popular understanding of the link between water quality and health is contradictory. On the one hand, the overwhelming majority (93%) of survey respondents believe that consuming unclear or bad water causes health problems, notably watery or loose motions (71%), cough and cold (55%), and joint pain (47%). On the other hand, the follow-up FGDs found that people viewed treating water as a way to care for people after they became sick, not as a routine measure to prevent illness.

With probing, many FGD participants—especially men—acknowledged the possibility of invisible germs in the water. Rural participants were uncomfortable with this line of questioning because it challenged their confidence in the water supply and raised doubts about whether they were drinking safe water.

Water-related expenses

Families in Andhra Pradesh spend considerable time and money on coping with inadequate water and sanitation services. People who use public taps and wells pay little for the water itself: less than Rs 3 (US\$0.07) monthly. Households relying on private taps spend an average of Rs 138 (US\$3.29) each month. The cost of water from tanker/vendors and retail purification centers falls in between (Rs 72 [US\$1.72] and Rs 92 [US\$2.19], respectively).

This does not include the cost of collecting, storing, filtering, and boiling water. In most households adult women are responsible for collecting drinking water, although men do help in certain circumstances. Households make an average of two trips daily to collect water, one of which is for drinking water. Each trip takes 20 minutes, on average, including

walking and waiting. When the cost of storage containers, filters, and fuel for boiling is added to the value of the time spent collecting water, the average monthly total per household is Rs 135 (US\$3.21). This is equivalent to approximately 2.5% of average monthly expenditures.

Waterborne illness imposes additional costs on families. The survey found that 7% of households had experienced a case of abdominal pain and illness during the preceding two weeks, over half involving a child under age five. Each episode lasted five days, on average, and families sought treatment in inpatient or outpatient settings for 85% of cases. The total cost of the illness—including money spent on treatment and income lost when adults were too sick to work or had to care for sick children—was Rs 1,630 (US\$38.81) per household affected. When averaged across all households, the monthly cost of abdominal pain and illness is Rs 114 (US\$2.71), or about 2% of monthly expenditures.

Findings on Household Water Treatment

Current practices

Only 39% of surveyed households treated water at some point during the year, and many did so seasonally or occasionally rather than year-round. Virtually all of the remaining households had **never** treated drinking water. Households are more likely to treat water during the rainy season than the dry season (38% versus 28%).



A girl improves the aesthetics of her water by using a plastic sieve. Water treatment is usually triggered by events such as the rainy season or an illness in the family.

Probing during the follow-up FGDs revealed that treating water is not a routine practice for most people, regardless of socioeconomic status or rural-urban residence. Rather, treatment is triggered by visible changes in the water (such as increased turbidity during the rainy season), sickness in the family, or disease in the community. Treating water is also considered appropriate when water has been stored for more than a day, as is often the case in urban areas, perhaps because visible sediment begins to accumulate in the storage container. Some people mentioned treating water in response to a health provider's recommendation or the expectations of visitors.

Many men in the FGDs did not know whether their drinking water was treated at home because it is a woman's responsibility. However, men were aware of the triggers for water treatment and reportedly advised their wives to treat when they received messages that the water was unsafe to drink.

Barriers to treatment

Both the survey and FGDs found that most people—especially older people—do not perceive a need for household water treatment, either because the water looks and tastes good or because it is already treated at the source. Some skeptics pointed to families in the

community who do not treat water and nevertheless remain healthy.

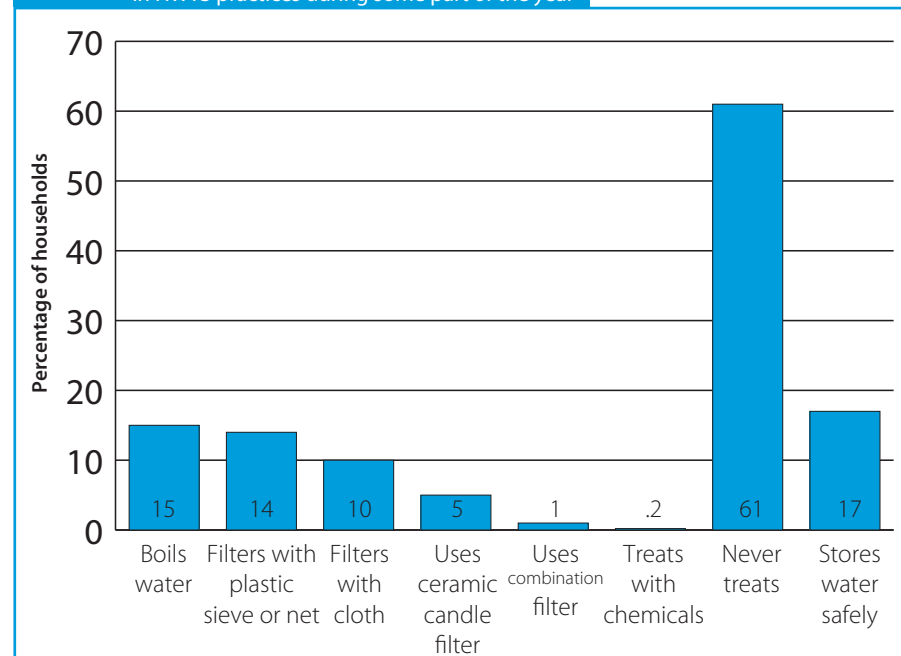
The time, energy, and expense required to treat water also present an obstacle. Most participants in the follow-up FGDs, regardless of their residence and socioeconomic status, did not think it possible to treat water year-round because of the amount of time required. Some participants admitted that they just did not want to make the effort, while others said it was too expensive. A minority said that better products were needed to treat year-round, but that these kinds of commercial HWTS products were too expensive.

Treatment methods

Traditional treatment methods, which include boiling, plastic sieve or net filters, and cloth filters, are universally known. So is one commercial method; ceramic candle filters. Few people, and only those in urban areas, are aware of more advanced HWTS methods, such as ultraviolet radiation.

Traditional methods are far more widely used than commercial HWTS products. The survey found that people are twice as likely to filter water in some way as boil it (30% versus 15%). Among those who filter water, most use a plastic sieve, net, or cloth to do so (see Figure 3). About 5% of all households use a ceramic candle filter, while a little over 1% use a

Figure 3: Percentage of households engaging in HWTS practices during some part of the year



high-tech combination filter that also disinfects water and has built-in storage and taps (e.g., AquaGuard, Pureit, or ZeroB). Most households that filter water do so daily and for all household members. Boiling is more likely to be limited to the rainy season and for sick household members. Just two of the 1,000 households surveyed used chemical treatments—alum and potash—and only during the rainy season.

Participants in the follow-up FGDs viewed commercial methods as more expensive than traditional methods, but less time consuming. Rural residents and men also tend to believe that commercial methods are superior to traditional methods because they purify water more completely and have built-in taps and storage tanks that limit contact between dirty hands and water. In contrast, women generally feel that traditional methods provide adequate treatment and are skeptical of the reliability and effectiveness

of unfamiliar commercial products. Traditional methods are also respected as long-standing customs.

Likelihood of treating water

A multivariate analysis of the survey data found that some groups are more likely to treat water than others. Water treatment is significantly more common in households that:

- Live in the southern region of Andhra Pradesh (perhaps because of a greater perception of chemical contamination).
- Live in urban and metro areas.
- Are headed by a person with a secondary school or higher education.
- Are headed by a young person, age 30 or less.
- Live in a pucca house.
- Practice handwashing.
- Pay less for water.

- Spend less time collecting water.
- Think the source water lacks clarity.

The analysis found no correlation between household water treatment and the asset index, SEC group, recent expenditures on abdominal pain and illness, the belief that one of the household's water sources is contaminated, and the vaccination of young children and pregnant women. Groups that are more likely to engage in household water treatment are not always more likely to practice safe storage.

Perceptions of people who treat water

The FGDs revealed mostly positive perceptions of people who treat drinking water. Participants tended to idealize them as knowledgeable, health-conscious, healthy, and wealthy. They said that fewer episodes of illness in the family enabled such people to work without interruption and earn more, while spending less on health care; as a result, they could invest more in their children, especially on education. FGD participants also noted that people who treat water are more disciplined and conscientious than the average person, but perhaps overly cautious and distrustful of source water quality. Notably, few participants thought that they themselves fit this description.

"We will definitely purify water when our children are sick. Having pure water throughout the year is not possible, and we do not have so much time to do it." Male FGD participant, Mangasamudram