



Point-of-Use Water Treatment: What Do We Know? How to Move Forward?

Washington, D.C.

November 5, 2010

Introduction

The United States Agency for International Development (USAID)-sponsored meeting: *Household Water Treatment: What Do We Know? How to Move Forward?* was held November 5, 2010 at the Academy for Educational Development (AED) headquarters in Washington, D.C. Attendees, a mixture of water treatment experts, Point-Of-Use Water Disinfection and Zinc Treatment Project (POUZN) project implementers, and donors, came together to share lessons learned from the POUZN projects in several countries, to identify remaining challenges to sustainability and scaling up, and to discuss the way forward for ensuring safe drinking water in the home.

The Social Marketing Plus for Diarrheal Disease Control: Point-of-Use Water Disinfection and Zinc Treatment (POUZN) Project is a 5-year project funded by USAID. The goal of the POUZN program is to expand the use of point-of-use (POU) water disinfection and zinc products for the prevention and treatment of diarrhea through private sector channels. The POUZN project was implemented between 2005 and 2010 by the Academy for Educational Development and Abt Associates, Inc in collaboration with Population Services International (PSI).

Panelists spoke on a variety of topics including challenges, priorities, and needed resources on the research and development front; strategies and results of POUZN projects—including both positive and negative outcomes; affecting lasting behavior change in regards to water and sanitation; and scaling up delivery and use of water purification products. Speakers presented perspectives from the private, donor, and NGO sectors which made for a well-rounded panel of presentations and provoked lively discussion between speakers and attendees.

Welcome and Programmatic Overview

Dr. John Borrazzo, *Maternal and Child Health Division Chief, USAID*

Dr Borrazzo opened the all-day meeting with words of welcome and introduction. He noted that, at a close of the five-year POUZN projects, water treatment at point of use (POU) is in a time of transition. A lot of progress has been made and as a result of the work put forth by implementers, there is increased support for and recognition of the importance of POU from UNICEF and from the International Network to Promote Household Water Treatment and Safe Storage, as well as from USAID. This end of project meeting is very much a starting point, and looking forward, implementing organizations must start thinking about how to integrate POU activities in their ongoing platforms and broader environmental health programming

This field has grown a lot but we still face significant program and policy challenges:

- **Technical challenges:** how do we find ways to measure correct and consistent use of POU so as to achieve health impact? There is still some debate around the efficacy of various POU interventions so more solid data to make this clear is needed.
- **Programmatic challenges:** we have done a great job testing a variety of products, including durable products like filters, but how do we scale up the use of those products? We also need to understand the role of POU at the systems level; E.g., should we have a role in helping improve water systems?
- **Policy challenges:** we need to decide whether POU is a water/environmental intervention, or a health intervention, or both? We tend to promote it as a child health intervention but is it truly effective as such? Funding limitations make it difficult to conduct research that would demonstrate reductions in mortality due to POU so what standard of evidence should we be using? There is also very little consensus on whether this is a public good. Is there enough of a public health benefit in POU? Should it be as heavily subsidized as vaccines? Ultimately we want sustainability but there are those who argue that safe water is a public good and a public right, therefore should it be given away?

Review of Evidence for Effectiveness of POU

Dr. Mark Sobsey, *Kenan Distinguished Professor of Environmental Sciences and Engineering, Department of Environmental Sciences and Engineering, University of North Carolina*

DR Sobsey presented and commented on findings from a recent paper by Thomas Clasen, of the London School of Hygiene & Tropical Medicine that reviewed the evidence of the effectiveness of POU Water Treatment. Research data shows that household water treatment (HWT) used in the right context can lead to health risk reduction. However, there are a number of challenges involved in achieving health improvements through HWTS interventions, including how to measure impact, reach sustainability, coverage and scale, how to target the right users, and how to achieve long-term and sustainable uptake. Dr. Sobsey concluded with the remark that we still need a technological breakthrough in order to establish household water treatment as a life-saving, public health intervention.

Post-presentation discussion

There is disagreement regarding evidence of health outcomes. What studies should we be implementing?

Mark Sobsey: There are many missed opportunities to conduct studies of the health outcomes of HWT. The health sector is not investing in these studies and we have done a poor job of marketing the need. A key issue is to design and build WASH into ongoing child health studies.

We also don't have consensus among the WASH community regarding the type of studies that are needed. There is a lot of talk about method efficacy but what do we need to measure program effectiveness?

Mark Sobsey: I agree that we need more buy-in from the health sector but we should not let the water sector off the hook. They have to take responsibility for delivering safe water to people, and rate payers should be demanding safe water from suppliers.

This presentation dealt with treatment but not so much with storage. Are there studies that focus on storage? For example, can we make boiling more effective by linking it to safe storage?

Mark Sobsey: We have very few studies dealing with storage; most of the information is anecdotal. Storage is very much determined by context and culture. Some cultures keep water hot at all times, others don't. We do need to address storage better. We also have not looked much at copper and other metals and their role in safe storage. More research is needed on storage technology.

Panel One: Seeking Sustainable Behavior Change

Moderator: Merri Weinger, *Program Manager, Hygiene Improvement, Global Health Bureau, USAID*

- **Results and Lessons Learned from the POUZN Project**
Susan Mitchell, *POUZN Project Director, Abt Associates, Inc.*
- **Determinants of Point-of-Use Water Treatment Behaviors: What We've Learned**
Cecilia Kwak, *Child Survival Technical Advisor, Population Services International (PSI)*
- **Consumer Choice of POU Methods and Sustainable Behavior**
Christian Winger, *Senior Program Officer, AED Center for Private Sector Health Initiatives*

Susan Mitchell of Abt Associates gave an overview of POUZN/Abt-PSI project's overall social marketing strategy, results, and lessons learned. The project demonstrated that building POU programs on an existing social marketing platform allows for fast scale-up for relatively small investment. It also found that both liquid and tablet chlorine products can be offered at a price that is affordable to users, and allows for procurement cost recovery. Partnering with the public sector for promotion and distribution was found to enhance the impact of POU social marketing. The gap between trial and current use however, continues to be a challenge.

Cecilia Kwak of Population Services International (PSI) discussed lessons learned from PSI's efforts to affect lasting behavioral change in terms of water treatment and storage. She drew on PSI's experience promoting chlorine-based HWT to identify key determinants of behavior change that were identified across 15 country surveys over the last five years. The significant predictors of HWT behavior were identified as: social support / social norms, self-efficacy (caregivers' confidence in ability to practice the behavior), perceived availability of HWT and perceived threat from unsafe water. Health communications examples to address these behavioral determinants were drawn from emergency and non-emergency situations. She cited the example of PSI's emergency response efforts in Zimbabwe during the cholera outbreak of 2008 and discussed whether the correlation between perceived risk and a higher rate of adoption of positive hygiene behaviors can be leveraged for longer lasting behavior change.

Christian Winger of AED gave an overview of the POUZN/AED project in India—including strategies employed, scaling up efforts and the lessons learned along the way. Specifically, he explained how the POUZN project aimed to provide low-income consumers a choice of affordable water treatment methods, and to create sustained behavior change. He focused on the necessity to let the target audience identify the right product for them and the need to tailor products that would fit these needs. This is especially important because successful behavior change for using POU devices and methods takes time and requires family consensus. The POUZN Project was successful in demonstrating the need for this change by using H₂S water testing kits as a trigger for behavior change, which allowed consumers to see that their water was contaminated. Mr. Winger also noted the use of NGOs as crucial to this behavior change, as they are trusted and unbiased sources of information in the community.

Post-panel discussion

What was your experience in getting HWT into the government guidelines? What happened to use after the cholera outbreak? How do you promote correct HWT use when you have multiple products?

Cecilia Kwak: Data suggests that when people are in high-risk situations they are more likely to adopt behavior change; e.g., trends show a higher adoption rates during a cholera outbreak and higher sales patterns during the rainy season (when cholera is more prevalent). However, it is too early to make definitive assumptions on long-term behavior change, post cholera outbreak. PSI is planning follow-up activities in Zimbabwe and will look into this.

Christian Winger: AED used the three-day demonstration in India to instruct people on the correct use of each method; i.e., how different products should be used with different container sizes. We did not use mass media so relied mostly on interpersonal communication (both group and individual) to describe correct use for any POU method of interest to the household. Using the H₂S water testing kits was the “tipping point” as they were highly effective in visually demonstrating contaminated water and how disinfection products could provide safe drinking water.

What is your definition of sustainability? You seem to be assuming that only product cost recovery is at stake when in fact marketing and promotional costs typically overwhelm product costs. Also, I would question the reliability of self-reporting in your research.

Susan Mitchell: We settled on product cost recovery as a measure of sustainability because PSI had originally said that we would not be able to fully recover procurement prices. I should note that distribution was only subsidized in rural areas and was otherwise implemented through sustainable commercial supply chains. As for AED, they used commercial products that were not subsidized.

I am interested in knowing if there is a model out there for a sustainable behavior change program. What does it take for a program to be able to sustain behavior change activities over the long term?

Cecilia Kwak: That would depend on the country context. But we need more time to answer that question.

Christian Winger: Our partners are continuing to market their product and are expanding to new areas, so our commercial-NGO partnership approach is a sustainable one.

1) Engaging manufacturers. Hindustan Lever said that the price of their filters could not be lowered but eventually came out with a lower price. What does this mean in terms of the way we engage these manufacturers? 2) Aspirational factors: what impact do they have on actual use of POU products?

Christian Winger: Manufacturers are primarily motivated by competition, so we think that working with multiple partners to create a competitive market, is the right strategy. We did not look at continued use in relation to aspirational factors, but our research showed high continued use of filters, although we did not have a large enough sample size or length of time to measure the use of the refill cartridges.

I am trying to understand how you factored in consumer preferences in your product offer. It seems you had already decided on what products to market but what kind of research influenced your decision? Also, did you consider willingness to pay and did you look at whether people were already paying for water?

Christian Winger: We did assess willingness-to-pay. PATH funded some POUZN/AED activity add-ons pertaining to micro-financing to enable target markets to afford the filters. They also funded some price sensitivity and willingness-to-pay studies amongst comparable interventions. We found that on average, people were willing to pay \$20 for a filter. This willingness-to-pay tended to vary with people's perception of the safety of their water.

Susan Mitchell: For us, the choice was limited by what was available in the context of the social marketing model used by PSI.

Mark Sobsey: We need to try and understand consumer choices better. Under the Watershed project, we tried to factor in these constructs. Why launch products that people are not willing to pay for?

Have you been able to work with the Government of India as a way to institutionalize your approach? Also, what was the socio-demographic profile of your target group?

Christian Winger: We did not get much support from the GOI. We had deadlines for the project that prevented working at the government's slow pace. As far as the SES profile, we targeted people below the poverty line in urban slums and low-income rural areas. A lot of our efforts were focused on trying to go down the socio-economic pyramid.

Panel Two: Creating an Enabling Environment for POU

Moderator: Dr. Rochelle Rainey, *USAID*

- **Leveraging Multiple Channels to Scale, Lessons Learned from the POUZN Project**
Megan Wilson, *Child Survival Program Manager, Population Services International*
- **Partnerships for Sustainable Interventions,**
Camille Saadé *POUZN/AED Project Director, AED Center for Private Sector Health Initiatives*

Megan Wilson of PSI discussed the organization's use of the multiple distribution channels to contribute to scaling up POU in PSI countries. Megan offered the examples of Rwanda and Benin where the POUZN project built on PSI's commercial sector distribution, and leveraged alternative distribution channels such as public health clinics, community health workers, schools, and emergency relief, as a way to reach mothers and children under five. National household surveys of caregivers of children under five showed that mothers in Benin and Rwanda increased their use of household water treatment. In a 2010 nationally representative sample in Rwanda, use of household water treatment by mothers in the last twenty-four hours, verified through objective residual testing, grew to from 1 in 2007 to 20 percent in 2010. This means that about half a million caregivers in Rwanda are treating their families' water every day. In Benin, self report current use of household water treatment by caregivers grew to 6 percent from 2008 to 2009. Exposure to POU messages by the project was also found to be positively associated with current and ever use of household water treatment Benin and Rwanda.

One major takeaway message was the need for the public health community to define what constitutes scale and success in the household water treatment area.

- Camille Saadé of AED presented on the POUZN project's creation of public-private partnerships and the role of the different partners in creating affordable and sustainable interventions. In particular, he discussed the targeting of Self-Help Groups, which are collectives of women who meet and provide micro-financing. By partnering with and

educating these Self-Help Groups on the need for POU methods, POUZN was able to reach 1,512 urban and 10,013 rural Self-Help Group (SHG) members, resulting in 71 percent adoption of POU methods, including 64 percent chlorine, 5 percent filters and 2 percent boiling. Because of their access to micro-finance, Camille demonstrated the SHG members are an excellent audience because of their ability to purchase POU products: there was 100 percent reimbursement of micro-loans for filter purchase. Camille also showed a near-final draft of a documentary film *Jal Mitra* that captures the work that POUZN and its private and NGO partners are doing in delivering sustainable POU interventions

Post-panel discussion

What value have governments seen in those programs? In India, there are so many products on the market, some of which are not effective. Will the GOI be able to block the entry of inferior products or certify some products?

Megan Wilson: In Rwanda, we were fortunate that the government was very engaged. They requested that the product be placed in all community health workers' kits and actually recommended SurEAU during emergencies. But Rwanda is unique in this respect. The government of Benin, for example, was not as supportive or involved.

Camille Saadé: The products that we used were approved by Indian authorities. Our commercial partners are responsible for getting their products approved through the registration process.

Are you looking to bid out access to NGOs to commercial companies as part of this new business model?

Camille Saadé: Our connections to multiple sectors are what we bring to the table. We do not over-promise and are willing to share risks as well as returns. Our dialogue with commercial suppliers and NGOs is about commonalities that may exist in our respective strategies. As catalyst in this business model, we make sure the interest of each partner is respected: commercial sector returns are in terms of financial gain; and public/NGO sector returns are in terms of public health outcomes.

Kevin O'Callaghan: The private sector really needs to commit to 2 things: 1) Working with institutions (USAID, EPA, WHO, etc.) and striving for the gold standard. 2) Spending lots of time in the market engaging stakeholders.

Are you seeing the market grow without your intervention? Will this be sustained?

Camille Saadé: I don't think any of this could have happened without POUZN involvement, and now, after our intervention of 4 years, it is sustainable. Initially when we approached Hindustan Unilever, they told us they were happy to focus on the middle class; so the onus was on the project to motivate them to reach for the bottom of the pyramid. Now the

intervention to the BOP is continuing. It should be said that this model is not applicable everywhere.

Megan Wilson: I would really like to go back to the subject of SCALE: what exactly should we be shooting for? If we as a community don't get excited about some of the current achievements then how can we possibly expect the private sector or the donor community to get excited?

Panel Three: Innovations in Water Treatment Technologies, Products and Approaches

Moderator: Dr. Rochelle Rainey, *USAID*

- **What Do We Know? How To Move Forward?**

Kevin O'Callaghan *Sales and Marketing manager, Medentech*

- **Chlorine Dispensers for Safe Water: Evidence and the Innovation Process**

Amrita Ahuja, *Giorgio Ruffolo Post-doctoral Fellow in Sustainability Science, Harvard Kennedy School of Government*

- **PATH Safe Water Project Perspectives**

Glenn Austin, *Director, Safe Water Project, PATH*

Kevin O'Callaghan of Medentech provided a private-sector perspective on water treatment, hygiene, and sanitation including marketing and private-sector investment return. As a for-profit company, Medentech needs to prioritize countries in terms of return on investment (which may not necessarily be a quick return). It is in their best interest, however, to support a "whole market approach" that does not imply promoting only one/their product. Because the goal is to see **overall** increases in demand for POU, general market creation in which the company can compete.

Amrita Ahuja of Harvard University presented on her work on chlorine dispensers at the water source as an innovation. Her presentation focused on:

- The product innovation itself—including the value this approach has as an addition to the toolkit for water treatment.
- Emerging innovations in service delivery and operational models.
- Illustrating the important role of evaluation
- The role evidence plays in an iterative design process.

Glenn Austin of PATH's Safe Water Project's presentation described how the project's "inclusive, market-based approach" provided a framework for self scaling, self sustaining POU interventions. When entrepreneurs are allowed to act as "autonomous, opportunistic actors", these interventions can potentially become "viral" and scale-up. Mr. Austin also described how the project used innovative research tools such as "concept cards" that helped elicit ideas from consumers and improve on product design.

Post-panel discussion

One thing we had not heard about today is how to incorporate water-safety plans into our POU interventions. If we look at water safety at the source, we will have better results overall. There is a continuum when it comes to safe water and we need to encourage users to see it that way.

Kevin O'Callaghan: we always advocate keeping water safe from the source, not just treating it. Our marketing really emphasizes the continuum.

Glenn Austin: I agree that water-safety plans should be integrated with HWT. But we should always look at the whole spectrum of contaminants we have only focused on pathogens; what about arsenic and other contaminants?

We need to be creative when it comes to financing. Should there be a combination of financing sources (private/public)? Should we have a model that is “part Coke, part vaccine”? I also think we should use various levels of outcomes in our monitoring and evaluation, including “cheap to measure” outcomes.

Glenn Austin: We still face outstanding questions: e.g., how do we address the need that people have to clean filter parts that are not made to be disassembled frequently?

Has Medentech done any analysis that shows that promoting multiple products leads to higher use of Aquatabs?

Kevin O'Callaghan: We are far from the “tipping point” when it comes to water treatment practices. We would like to see markets reach 20 percent HWT use, and we cannot do this alone. That’s why we favor an approach with multiple partners. We are prepared to exclusively promote and support our own product once the proper environment has been achieved.

Glenn Austin: One reason Medentech benefits from overall efforts is that they are a “mature supplier” in an “immature market”, meaning that any increase in demand is going to benefit them.

Camille Saadé: It is in Medentech’s interest to make as much “promotional noise” as possible with as many partners as possible.

One question I have heard is whether it is ethical to extend the use of microfinance for non-productive activities like selling filters. Should we focus instead on credit to entrepreneurs rather than to consumers?

Glenn Austin: I have no problem with using microfinance to sell a consumer product, unless it is overpriced or ineffective e.g. a \$50 loan that costs \$15 to finance each month.

I would like to see more studies of the effectiveness of community-based chlorination systems.

Kevin O’Callahan: We are now looking at community-based disinfection; residual chlorine continues to be a major issue. It may not be the answer to all water issues, but we can help address this aspect of the problem.

Amrita Ahuja: Our dispenser has the potential to be highly effective in communities not reached by municipal pipes and we are researching its effectiveness as part of our project.

Moderated Discussion: The Way Forward on Household and Community Water Treatment

Moderator: Dr. John Borrazzo, *Maternal and Child Health Division Chief, USAID*

- Louis Boorstin, *Strategic Opportunities Group, Bill and Melinda Gates Foundation*
- Soma Ghosh Moulik, *Senior Water and Sanitation Specialist, Water Anchor, World Bank*

Louis Boorstin: The reason we like our two grants with PATH and Harvard, is that they are not just about technology. We realize the limits of technology, it is part of the equation but it needs to be combined with a clear understanding of the issues. We have three strategic objectives: Impact, Sustainability and Scalability. We are trying to address three key challenges: users, technology, and delivery systems. We do not assume anything. E.g., we got to the community approach with Harvard (grant) because we saw that individuals were not adopting HWT. With PATH, we are focusing on the target market and understanding its needs and preferences.

The BMGF plans are to focus mostly on sanitation (90 percent of our grants) but we will issue a second grant to the community dispenser project. We are not “dissing” the water aspect and some of our grants will also have a hygiene component. Most of our grantees are also present in the water area.

Soma Gosh: The Bank starts from the premise that we have to help people get what they want. Our goal is to “fix the institutions that fix the pipes”. Our priority is those communities that do not have access to water. The water treatment component is imbedded in this strategy. Our challenge is to provide safe water at scale, make sure that technologies are effective and available, look at the financing options and work with institutions on maintenance issues.

We do have a bit of a different point of view from public health organizations: our focus is really at the source, not the end point. We look at different technologies depending on the source. However, we do have communications programs that encourage people to preserve water safety at the end point.

So, is this a public health problem? And have you engaged the public health sector?

Soma Gosh: This is a difficult question. We do see this as a public health issue but we choose to address it through institutions and the infrastructure. We work with our health colleagues at the Bank when it comes to measuring health impact. Water quality monitoring is part of every water project design (engineering).

Louis Boorstin: I think it is both a public health and a water supply issue. A person without clean water needs affordable, regularly supplied, safe water. And they don't care how it gets to them; we recognize that there is enormous health benefit in improved water, sanitation, and hygiene. We work closely with our health colleagues and we do have other grants that focus on water issues, for example IRC's sustainable water services project in India.

Is the expected outcome "safe water" or "lives saved"?

The marriage of the water-supply and public-health sectors will be brought about by the extremely low cost of water-quality testing. This technology is going to revolutionize the debate because people will have greater awareness of the quality of their water.

Where are the incentives for water suppliers to provide safe water? Not just quantity but quality?

Soma Gosh: This is in fact a very political topic. The Bank is creating incentives by working with communities, which tend to hold institutions accountable for providing them with clean water. We are working on demand-side incentives.

Louis Boorstin: Our objective is to provide safe water with the goal of reducing morbidity and, hopefully, mortality. Our focus to date has been to measure the safety of water, but metrics should also show an improvement in people's lives. We have to demonstrate that safe water improves people's health in order to get internal support for our programs. We are in "competition" with other interventions such as vaccines, and lives saved are ultimately the impact we are looking for. Safe water is the outcome on the way to that health impact. We would like to be able to demonstrate this "once and for all" so we don't have to keep doing it at great expense.

What about our targeting strategies: should we be targeting populations? Geography?

Soma Gosh: From the Bank's perspective, we look at the unserved population first (those who have no access to water), then the partially covered, and finally people who are served (looking at issues of cost-effectiveness and quality). Our biggest challenge is to provide universal access and we try to do this by involving communities in decision-making.

Louis Boorstin: We need to find better ways to provide "sustainable" delivery, not just access. As far as targets, we focus on the poor, not those who can afford a \$50 filter. Can we improve the models for the prices to come down? We don't have all the answers to

questions relating to affordability. We like chlorine because it's cheap. But if we can't demonstrate that safe water can be provided affordably or sustainably then we may have to advocate for government support.

Susan Mitchell: In our project we have targeted certain vulnerable populations but we cannot control who buys the products. Our evaluation however is focused on target populations.

Louis Boorstin: The fact is that the poor are very hard to reach. We may be able to do it through antenatal clinics but we don't know yet.

What about subsidies?

Soma Gosh: We believe that water is a public good and our approach is to subsidize the initial capital investment. HWT, however, is left to the community. We do not work in that area. In general, we are not strong advocates of household subsidies. We prefer incentives over subsidies.

Louis Boorstin: I don't think it is so much a question of subsidies vs. no subsidies, but whether we can use them to get the outcome we want?

Camille Saadé: The key is to target subsidies appropriately. NetMark for example used established systems within the public sector (antenatal care to create demand and supply vouchers), respected and used the supply chain in the commercial market, to channel the nets and accept the vouchers, and cost-shared the vouchers with ExxonMobil, to get to the intended target populations.

Can we hear from manufacturers in the room about their strategies and how they evaluate their progress?

Allison Tummon Kamphuis (P&G): We started with the goal to contribute 1 million liters of water treated per year, and when we quickly reached (and then surpassed) that goal, we reframed our goal: to contribute 2 billion liters of purified water. We challenged ourselves internally to find a way to effectively communicate this goal and its impact: 2 billion liters of purified water saves one life per hour.

Kevin O'Callaghan: Medentech is continuing to develop new products and bring them to the community level. About 25 percent of our sales at this stage are commercial (including social marketing)

Closing remarks:

John Borrazzo thanked the participants and gave the floor to Ryan Rowe, the new Communication Officer for the HWTST International Network, now seated at the Water Institute at the University of North Carolina's Gillings School of Global Public Health. Ryan made an

announcement about the International Network to Promote HWT and Safe Storage. He said that UNICEF will be co-hosting the network with WHO beginning in 2011 and UNC will handle communications. The network has 3 objectives: 1) strengthening the evidence base for HWTS, 2) focusing on the social-behavioral aspects of HWTS, and 3) scaling up at 3 levels: national level policy, national programs, and dissemination of best practices.

Summary: Key Take-Aways from the Day's Presentations and Discussions

- Building on existing social marketing platforms adapted for the local context allows for the relatively fast scale-up of household water treatment programs for an investment \$200-300,000 a year.
- Liquid and tablet chlorine products can be offered at a non-subsidized price that is affordable to caregivers. Filters, on the other end, are more desirable, more conducive to regular use, but more expensive
- By increasing access to important health products and exposure to messages focused on behavioral determinants, it is possible to increase uptake of key health behaviors such as water treatment.
- The significant predictors of household water treatment behavior were identified as: social support / social norms, self-efficacy (caregivers' confidence in ability to practice the behavior), perceived availability of household water treatment and perceived threat from unsafe water. Communications, which focus on these determinants, are more likely to motivate water treatment behavior.
- Exposure to project messaging was also found to be positively associated with current and ever use of household water treatment in Benin, Rwanda, and DRC. Both mass media and interpersonal channels of communication are essential to creating awareness and encouraging correct and consistent use
- Priming the market at the Bottom or the Pyramid is an effective way to attract and keep the commercial sector's sustained involvement in this market
- Innovative approaches to create new partnerships such as the commercial and NGO partnership in India, lead to mutual benefit and sustainability.
- To scale up household water treatment, it is important to build on existing systems, be it an effective public sector, an active commercial sector, well-established NGO, organized community groups (SHG) or traditional social marketing. The key is to leverage alternative supply and demand channels such as public health clinics, micro-distributors, community health workers, schools to effectively reach target consumers
- However, in some countries the gap between trial and current use continues to be significant, so closing this gap should be the focus of future programs.
- Evaluation research is critical to monitor program success and to draw lessons to guide future program design.
- There is an immediate need for a rapid, user-friendly and affordable water testing method. Beyond water testing, it will serve as a tremendous motivator for sustained behavior.