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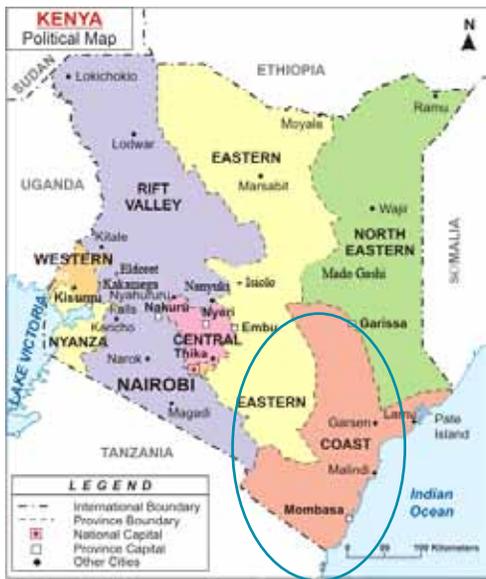
# ASSURING RURAL ACCESS TO WATER TREATMENT PRODUCTS IN KENYA'S COAST PROVINCE

## RESULTS AND LESSONS LEARNED

### PROGRAM CONTEXT

Kenya, located in eastern Africa, has a population of 38.5 million<sup>1</sup> and ranks

**FIGURE 1: MAP OF KENYA AND COAST PROVINCE**



147th out of 182 countries in the United Nations Human Development Index (HDI), 2009. Such a ranking is indicative of Kenya's low per capita income, lower educational levels and the population's relatively short life expectancy. Kenya's economy is predominantly agricultural, with

59 percent of the population living in rural

areas.<sup>2</sup> Life expectancy at birth is 54 years.<sup>3</sup>

Illness among children is relatively high for the region. Child mortality rates have increased over time, from 111.5 deaths per 1,000 live births in 1998 to 128 deaths per 1,000 live births in 2008.<sup>4</sup> This means that annually, 179,000 children in Kenya do not live to their fifth birthday. Deaths are primarily from diarrheal diseases (20 percent), pneumonia (15 percent), and malaria (11 percent).<sup>4</sup> There is high chronic and acute malnutrition – 35 percent of children under five are stunted – and diarrhea exacerbates this, thus compromising a child's ability to grow and survive.<sup>5</sup>

Lack of access to basic water supply and sanitation continues to be a major problem

<sup>1</sup> UNDP. 2009. Human Development Report Kenya. [http://hdrstats.undp.org/en/countries/data\\_sheets/cty\\_ds\\_KEN.html](http://hdrstats.undp.org/en/countries/data_sheets/cty_ds_KEN.html). (accessed June 1, 2010).

<sup>2</sup> UNEP Globalis. 2005. Indicator: Urban Population 2005. <http://globalis.gvu.unu.edu/indicator.cfm?IndicatorID=30>. (accessed June 1, 2010)

<sup>3</sup> UNDP, 2009

<sup>4</sup> UNICEF. 2010. Countdown to 2015. Maternal, Newborn and Child Health. Country Profiles. New York: UNICEF.

<sup>5</sup> Ministry of Health of Kenya. ICF Macro. 2005. Kenya 2005 Demographic and Health Survey. Calverton: ICF Macro.



in both rural and urban Kenya. Transmission of diarrheal disease-causing pathogens is frequently the result of exposure to contaminated water both for drinking and washing hands. Even when water is safe for drinking at the source, it is commonly re-contaminated during collection, storage, and use at home. Household water treatment at the point of consumption or point of use (POU) provides households with the ability to rid their drinking water of microbiological contaminants. Evidence shows that POU water treatment reduces diarrhea prevalence, frequency, and severity in the most vulnerable populations: children under five although more recent literature has identified challenges of correct, consistent and sustained use.

**Coast province**, the focus of this brief, is geographically large (Figure 1) and has a high population density, particularly in key urban areas around the coastal cities of Mombasa and Malindi. The province is home to about 2.5 million people, only 7 percent of Kenya's total population, yet it has the second highest burden of diarrhea: 27 percent of children under five reportedly had diarrhea in the two weeks preceding the 2005 Kenya Demographic and Health Survey. Frequent drought, interspersed with heavy rains and flooding, and limited access to improved water sources make the province and especially its coastal areas prone to cholera and other diarrheal disease outbreaks.

## PROGRAM GOALS

In 2007, the United States Agency for International Development (USAID) provided funding through its Social Marketing Plus for Diarrheal Disease Control: Point-of-Use Water Disinfection and Zinc Treatment (POUZN) Project, implemented by Abt Associates and Population Services International (PSI), to expand PSI's diarrhea prevention program in Coast province. Through the POUZN project, PSI team sought to increase accessibility to and demand for water treatment products by leveraging partnerships with nongovernmental organizations (NGOs), community-based organizations (CBOs), and district-level health officials to expand distribution, promotion, and behavioral messages about the products among poor and vulnerable communities.

The POUZN project sought to decrease diarrhea morbidity and mortality in children by:

- ▶ Expanding the supply of POU water treatment products through private sector channels including kiosks and supermarkets to improve caregivers' access to safe water products;
- ▶ Growing the community-based supply of POU water treatment products by building linkages with commercial sector marketing and distribution and community-based public health approaches; and
- ▶ Improving caregivers' motivation, through mass media and interpersonal communications (IPC) campaigns, to practice POU water treatment by improving their knowledge of diarrheal diseases, knowledge of the effectiveness of water treatment and hygiene practices, and increasing confidence in their ability to treat water.

Community outreach, education, and distribution conducted in concert with partners enabled the project to focus on rural areas that are particularly vulnerable to acute diarrheal disease and face the greatest challenges with regard to water quality.

## TIMELINE

In early 2000, with technical support from the U.S. Centers for Diseases Control and Prevention (CDC), PSI developed a chlorine-based water treatment solution, or safe water system (SWS), marketed under the brand name WaterGuard, to enable vulnerable families to treat their water at home with a safe, easy-to-use, and cost-effective product. SWS consists of the chlorine solution, along with safe storage and improved hygiene behaviors. This was pursuant to the World Health Organization and UNICEF call for approaches to provide safe-drinking water to ensure better health. Introduction of water treatment products in Kenya proceeded as follows:

- In May 2003, PSI introduced WaterGuard with internal PSI funding into the Kenya market.
- In February 2006, PSI introduced PUR®, Purifier of Water, with funding from its manufacturer, Procter & Gamble (P&G); PUR is an alternative water treatment product, particularly for those who rely on turbid drinking water sources such as rivers, shallow wells, and rain water collection.
- In 2007, with support from USAID through both its social marketing bilateral contract and the POUZN Project, PSI/Kenya expanded its safe water program into poor and vulnerable communities in Coast province. Initial focus was on identifying target districts, assessing

partner NGOs and CBOs, and gaining an understanding of the health context and working environment of the province.

- In 2009, with the support of Medipharm, a pharmaceutical distributor, PSI incorporated Aquatabs, the chlorine-based water treatment tablet, into its distribution network to ensure a range of options were available to the target populations.

Through these activities, PSI/Kenya modified its approach to promoting safe water and WaterGuard in Coast province to one that would address key factors that were driving the adoption of POU water treatment products, particularly in targeted, high-risk, but hard-to-reach rural areas. Based on the POUZN project goals (above), activities focused on: 1) commercial sector marketing and distribution and 2) public health approaches to media and interpersonal communication that determine an individual's motivations to adopt healthy behaviors.

## PRODUCTS & PRICES: ENSURING KENYANS HAVE HOUSEHOLD WATER TREATMENT OPTIONS

Prior to the introduction of WaterGuard in 2003, household treatment of water was virtually unknown in Kenya – less than 7 percent of the population had ever used a POU water treatment product.<sup>6</sup> WaterGuard is a chlorine-based water treatment product consisting of a (1.25 percent) sodium hypochlorite solution in a standard 150 ml bottle with a cap that enables appropriate dosing for a 20 liter container. (One capful provides the exact dose needed.) PUR treats water through

<sup>6</sup> Population Services International / Kenya. (2003). [Household water treatment survey]. Unpublished report.

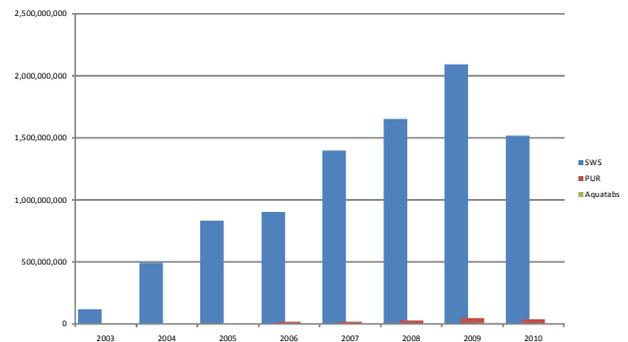


a combined process of disinfection with calcium hypochlorite and flocculation with iron sulfate, and is particularly useful for turbid water sources. Aquatabs effervescent tablets contain the active ingredient sodium dichloroisocyanurate (NaDCC), which rapidly dissolves in water to kill microorganisms that cause diarrhea. In all cases, these products ensure safe, clear, palatable solutions with water ready for drinking after 30 minutes. Table 1 below provides price and dosage information for each of these products.

## DISTRIBUTION: EXPANDING RURAL POU ACCESS IN COAST PROVINCE

By 2006, WaterGuard was distributed solely through Kenya's existing commercial distribution network. Reliance on existing networks meant that availability of WaterGuard was higher in urban outlets than in rural ones: WaterGuard was present in 59 percent of pharmacies/chemist shops and in 50 percent of supermarkets, but less so in small shops and dukas (kiosks) which serve rural areas. Despite these disparities in availability and access, over half of current WaterGuard users were residing in urban areas as compared to rural areas, illustrating the potential for POU water treatment uptake.<sup>7</sup>

FIGURE 2: LITERS OF WATER TREATED BY POU OPTIONS IN KENYA, 2003-2010



Source: PSI data

In 2007, upon becoming a POUZN partner and committing to the project's objective of expanding availability of WaterGuard and PUR in Coast province, PSI/Kenya revised its rural distribution strategy. The program began to enhance linkages with CBOs to increase rural access to POU water treatment products. Meetings with these groups encouraged consumer interest in the

TABLE 1: PRODUCTS, PRICE, LITERS TREATED

Product	Form	Price	# Liters Treated
WaterGuard	Liquid	KSH 20 (US\$0.24)/ bottle	1000
PUR	Powder	KSH 7 (US\$0.08)/ sachet	10
Aquatabs	Tablet	KSH 2.5 (US\$0.03)/ tablet	20

<sup>7</sup> Population Services International / Kenya. (2005). [WaterGuard Situation Analysis, taken from 2003 and 2005 PSI household survey]. Unpublished report.

products and trial use increased as a result. In 2008, CBOs began to sell WaterGuard and PUR. Operating as a village-level revolving fund made selling WaterGuard an income-generating activity that ensured sustainability, while bringing POU treatment products closer to the community. Under POUZN, rural sales representatives served as an important link between the CBOs and neighboring outlets to ensure consistent CBO access to the products. From January through August 2009, 15 CBOs sold 2,800 bottles of WaterGuard in Kwale, Kilifi, Taita, and other districts. In addition, to meet the growing demand, local NGOs such as the Coastal Rural Service Promoters (CRSP) set up new outlets in their program communities through their entrepreneurial innovation program.

Almost two years into this targeted distribution strategy, 81 percent of

those who used WaterGuard in Coast province had purchased it from a duka/ kiosk, illustrating an increase in outlets accessible to rural populations (Table 2). Among households with children under five surveyed, 74 percent knew where to obtain a POU product.

Nationally PSI/Kenya also began to work with rural retail agents who acted as mobile wholesalers, transporting products from sub-distributors to the retail trade and often linking rural retailers to targeted communities.

The POUZN program has made progress in improving rural access to POU products. From 2007 to 2009, WaterGuard sales in the Coast province increased from 197,340 to 225,839 bottles, PUR from 32,638 to 52,908 sachets, and Aquatabs sales totaled 38,880 strips of 10 tablets (Table 3).

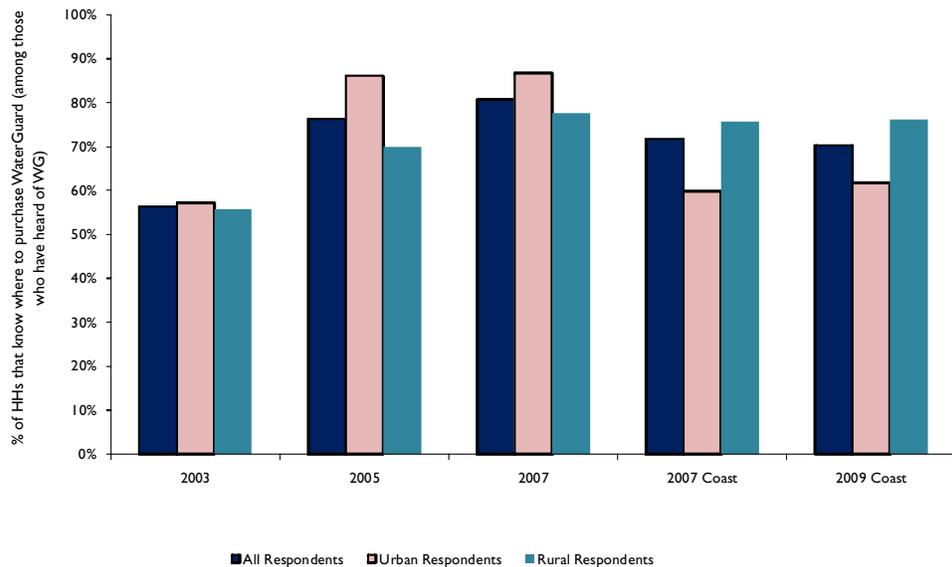
**TABLE 2: PLACE OF PRODUCT PURCHASE (2009 COAST SURVEY)**

Place of purchase	WaterGuard (N =717 )	PUR (N=93 )	Aquatabs (N = 92 )
Duka/ kiosk	81%	54%	41%
Supermarket	8%	27%	22%
Pharmacy	8%	16%	35%
Health center	3%	2%	2%
Youth/ women's group	----	1%	----

**TABLE 3: WATERGUARD, PUR, AND AQUATABS SALES**

Year	Waterguard			PuR			Aquatabs		
	Urban	Rural	TOTAL	Urban	Rural	TOTAL	Urban	Rural	TOTAL
2009	211,679	14,160	225,839	49,200	3,708	52,908	21,600	17,280	38,880
2008	187,008	8,280	195,288	11,520	2,856	14,376	-	-	-
2007	191,232	6,108	197,340	27,214	5,424	32,638	-	-	-
TOTALS	589,919	28,548	618,467	87,934	11,988	99,922	21,600	17,280	38,880

**FIGURE 3: PERCENT OF HOUSEHOLDS THAT KNOW WHERE TO PURCHASE WATERGUARD (AMONG THOSE WHO HAVE HEARD OF WATERGUARD) 2003-09**



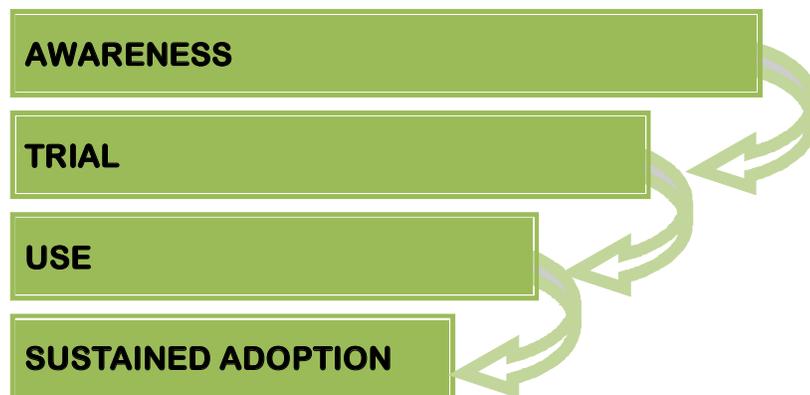
Note: HH=household, WG=WaterGuard

However, perceived availability did not change significantly. Rural distribution, particularly in remote areas that are not easily accessible by road, requires sustained effort and often relies on channels outside of the commercial network. The marketing approach of placing greater emphasis on rural areas is rewarding, but may lead to less than expected uptake, as can be seen above in Figure 3. Data from Coast show that perceived availability of WaterGuard remained stable even though actual availability increased.

## PROMOTION: IMPROVING CAREGIVERS' KNOWLEDGE AND MOTIVATION TO USE POU PRODUCTS

Product promotion and brand awareness are essential steps in influencing the adoption of appropriate behaviors. General awareness of the POU products, and their associated qualities, establishes a foundation upon which trial use and sustained adoption of behavior builds, as shown in Figure 4.

**FIGURE 4: BEHAVIOR CHANGE MODEL**



Media communications that reached across the country prior to 2007 were effective in creating brand recognition and high awareness for the product. After the initial launch in 2003, 27 percent of households had heard of WaterGuard and, by 2007, 78 percent of households knew of the product. However, awareness did not translate into sales. Other key barriers to POU adoption – including the limited association between water quality at the home and childhood diarrhea as well as personal/family threat perception – need to be explored further.

#### A. IMPROVING CAREGIVERS' KNOWLEDGE AND MOTIVATION FOR POU PRODUCTS THROUGH COMMUNITY-BASED OUTREACH

Through personal communications with residents, CBOs play a prominent role in addressing barriers to health behaviors. These groups include women's groups, village health committees and other groups involved in health and civil society activities. They work in close coordination with village elders and chiefs to provide health information in a way that is meaningful and understandable at the community level. PSI/Kenya had a successful experience working with the Safe Water and AIDS Program (SWAP) and other programs and incorporated this partnership model into the POUZN program.

Collaborations with existing and new partners grew in Coast province to promote POU awareness, build self-confidence among caregivers in small-group settings, and build communications capacity and skills of partners. The partnerships evolved in two ways:

**1) Integrating POU water treatment and hygiene promotion into other health programs:** Rather than promote POU as a stand-alone behavior, partner NGOs integrated POU and hygiene messages into existing health activities. Partner NGOs included SWAP, CARE, Sustained Health Enterprise Foundation, Kwale Health Forum, Plan, Kenya Medical Research Institute, World Vision, AMKENI, Family Health International, Mombasa Relief International, Plan International, Aga Khan Coastal Rural Support Program, and the Kenya Red Cross. This approach ensured that safe water and hygiene messages would resonate as part of a more comprehensive child health promotion package and ensure sustainability of POU water treatment after POUZN ended.

#### PSI and the Kenya Red Cross

The Kenya Red Cross (KRC) relies on a network of 4,000 volunteers in Coast province in a range of health and other sector activities. Through POUZN, KRC incorporated safe water and hygiene promotion into existing activities. The "Keep it Up" program focused on malaria prevention. Yet, as communities were demanding solutions to address diarrheal disease problems that they were facing, KRC saw an opportunity to build on malaria prevention messages to incorporate safe water, hygiene, and sanitation.

#### 2) Direct coordination and behavior change communication skills-building among community volunteer groups:

POUZN worked in collaboration with 15 CBOs across nine districts (out of 46 districts) in Coast province (Kwale, Kinango, Samburu, Kilindini, Mombasa, Kilifi, Malindi, Taita, and Taveta). The role of the CBOs was multi-faceted:

- ▶ Facilitating small-group community outreach through a series of participatory sessions,
- ▶ Acting as the implementing arm of cholera response teams and often providing product at the bequest of the district medical or district public health officers (DMOs/ DPHOs),
- ▶ Helping to identify village-level barriers to water treatment behaviors,
- ▶ Providing POU products in rural communities through income-generating activities, and
- ▶ Liaising with village elders and chiefs.

In late 2008, PSI decided to fundamentally revise the POUZN communications strategy from solely product promotion to more participatory behavior change communication. In 2009, PSI adopted a technique called Education through Listening (ETL). ETL as well as magnet (community participatory) theaters allowed community outreach volunteers to establish stronger, more structured relationships with the targeted caregivers as well as follow-up with the groups.

#### Education Through Listening Re-shapes Community Outreach

Developed by Bobbie Pearson at CDC, the ETL technique combines motivational interviewing (a participant-centered counseling technique), behavior change models (such as Stages of Change), and adult learning theory. ETL catalyzes a participatory and productive community dialog that results in behavior change in members of the community.

#### TikoDev: Safe Water “Masters of Knowledge” in Kwale District

Groups like TikoDev have become a safe water and hygiene resource for Kwale district. Dr. Omar, the DMHO of Kwale, called on TikoDev as cholera cases were reported in Kwale highlands. The availability of groups in the district who had been trained in safe water, hygiene, and cholera messages and skilled in participatory theater, is a reassurance to district-level health officials who struggle to communicate messages and respond quickly while resources are mobilized from national level.

The interpersonal communication (IPC) approach focused on enabling CBOs by providing them with the tools needed to engage in participatory communications. The establishment of fewer, quality partners also allowed better integration of safe water and hygiene promotion into existing programs. Beyond building CBO technical capacity to improve the health of their communities, the groups benefited by strengthening their performance and communications skills through training on ETL and magnet theater techniques. These groups often became key holders of safe water and hygiene knowledge for district authorities and partners, and they took on additional roles in community-level outreach.

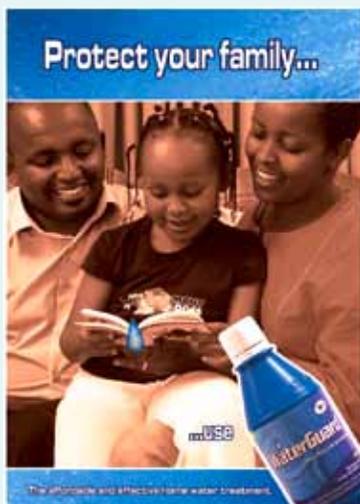
Although the POUZN program initiated the training of CBOs and maintained up-to-date knowledge on communications and safe water and hygiene practices, other projects also began to work with the groups. This ensured a level of sustainability in the messaging and provision of products after the POUZN activities ended.

Targeted communication activities in Coast province ended in December 2009. As hoped for, the established network of CBOs continue to provide products through

their links to the sales representatives and retailers as they share their safe water messages with their communities.

### 2007: WaterGuard, the “caring protector” that every mother needs:

Emphasis on WaterGuard and WaterGuard instructions



and favorable impression of affordability regarding WaterGuard, yet only 45 percent of households with children under five identified contaminated water as a cause of diarrhea and only 39 percent mentioned that children were the most vulnerable to diarrhea. Based on these findings, the POUZN team reoriented its approach to emphasize severity of diarrhea, tackle issues about effectiveness of POU water treatment, and place more emphasis on safe water storage and hygiene practices. With POUZN project and other USAID support, the program shifted from promotion of the WaterGuard brand and correct use to addressing the barriers to water treatment usage. Effective treatment methods and general hygiene related to water treatment such as proper storage were also addressed through mixed media communications and branded campaigns, as described below.

### 2008: Linda Kila Tone Campaign

The Linda Kila Tone campaign ran during the last quarter of 2008. It sought to dispel the assumption that clear water is safe to drink, a key barrier to adopting POU water treatment. The campaign encouraged caregivers to “Guard Every Drop.”

## B. USING MASS MEDIA TO IMPROVE CAREGIVERS’ KNOWLEDGE AND MOTIVATION TO USE POU PRODUCTS

A situational analysis conducted in 2006 indicated caregivers did not make the connection between contaminated drinking water and poor health. Mothers and caregivers did not perceive themselves, or their children, at risk of diarrhea or other illnesses due to unsafe water. The belief was that if “water is clear, it is clean.” There was strong brand awareness

### 2009: Malezi Bora Campaign

In 2009, the program aired diarrheal disease prevention campaign radio spots as part of a broader child health campaign in Kenya – the Malezi Bora Child Health Weeks was led by the Ministry of Health and UNICEF. The Malezi Bora initiative ran for two two-week “bursts” in May and November. The initiative sought to increase health seeking behaviors. Integrating messages on POU water treatment into the broader campaign ensured water treatment as a key child health message and practice.



Campaigns aired across national media as well as local radio stations. Over time, perceptions of risk and knowledge associated with unsafe drinking water have improved with media communications

positively impacting broader POU practices, as found in the 2009 follow-up survey in Coast province.

### C. IMPROVING CAREGIVERS' KNOWLEDGE AND MOTIVATION FOR POU THROUGH EFFECTIVE POLICIES AND COORDINATION WITH DISTRICT MINISTRIES OF HEALTH

The POUZN team actively participated in stakeholder forums at the district level in Kilifi, Malindi, Kwale, and Kilindini districts to strengthen linkages to the MoH's strategy. Due to the decentralized nature of the public health system in Kenya, active collaboration and buy-in at the district level is essential to achieve behavior change. The partnerships with DPHOs resulted in the inclusion of "safe drinking water for all" into District Annual Operation Plans and creation of linkages between DPHOs and CBOs that serve as a future safe water and hygiene communications resource for the district. These partnerships also led to involvement in implementing MOH-led activities such as the following:

- ▶ Malezi Iso Bora Child Health Weeks in May and November 2009, including placement of radio spots on one national station and nine regional stations;
- ▶ Coordination of clinic outreach activities with POUZN theatrical groups in three districts in Coast province; and
- ▶ Global Handwashing Day, celebrated on October 15, 2009, in Kilifi district (Coast province), with safe water messages disseminated to 10,000 participants.

The POUZN program was seen as supporting the MOH in moving toward safe water provision. The role of PSI/Kenya in coordinating cholera response

communications and emphasizing safe water and hygiene at stakeholder meetings was seen as a major outcome of these collaborations by district-level medical officers, public health officers, and partners who often do not receive adequate attention or resources that come down the chain from national discussions.

#### Supporting Districts' Cholera Response Efforts

During cholera outbreaks, through POUZN support, PSI partnered with the Department of Public Health in Likoni and Changamwe districts (Coast province) to ensure cholera-prone areas had supplies of WaterGuard and PUR. PSI served as the primary distribution coordinator and dispatched communications teams to do outreach.

## PROGRAM RESULTS AND CONCLUSIONS

Household water treatment practices in Kenya have increased significantly since being introduced in 2003. PSI/Kenya has worked closely with the commercial sector to develop and manufacture POU products (WaterGuard) as well as tap into commercial distribution and marketing efforts as the portfolio of water treatment expanded to include PUR and Aquatabs. This has led to trial of POU products by 45 percent of the population and recognition of POU as an approach to preventing diarrhea in Kenya. As a result of the promotion of WaterGuard and overall increase in knowledge about home treatment of drinking water, a number of imitation brands and other POU products have made their entry into the Kenyan market. However there are concerns about quality control of these other brands. The POUZN program achieved several notable results:

**INCREASED USE OF HOUSEHOLD WATER TREATMENT IN COAST PROVINCE:**

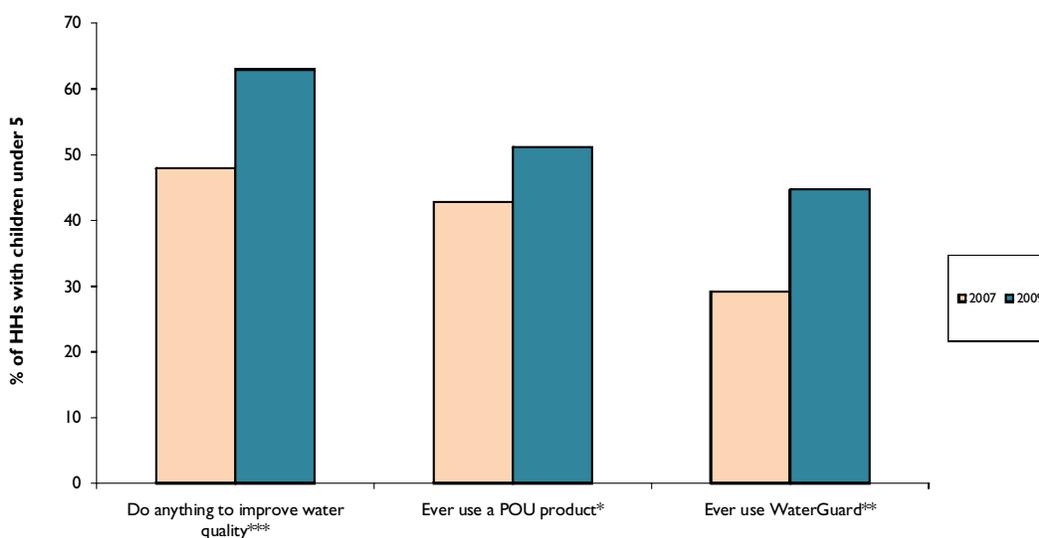
In Coast, the program intervention zone, caregivers of children under five improved their water-treatment behaviors between 2007 and 2009. The percentage of caregivers who had ever used a POU water treatment product increased from 43 percent to 51 percent during the period (Figure 5). A similar trend was found for individual POU products: there was substantial increase in use of WaterGuard among caregivers, from 30 to 45 percent. Use rates of PUR and Aquatabs also increased, albeit at much lower levels because of the products' later introduction. For PUR, ever use by caregivers of children under five grew from 0.8 percent in 2007 to 2 percent in 2009. Aquatabs was added to the PSI portfolio only in 2009--data show that 3 percent of those surveyed had at one point used the product.

To assess current use, the POUZN team measured chorine residuals in caregivers' water at the time of the 2009 survey.<sup>8</sup> This test, which offers an objective measure of water treatment with chlorine in the past 24 hours, showed that around 29 percent of households surveyed had treated their water with chlorine that day. This is a substantial percentage of the population and is consistent with other countries that have had long-standing household water treatment programs such as those in Madagascar (13 percent self-reported use)<sup>9</sup> and Rwanda (21 percent self-reported use).<sup>10</sup>

Four behavioral determinants were associated with the use of POU water treatment in Kenya. Caregivers of children under the age of five tended to be more likely to use a POU product if they 1) felt it was something their friends and neighbors did (social norm), 2) knew that children under the age of five are most likely to die from

**FIGURE 5: GROWTH IN USE OF WATER TREATMENT PRODUCTS**

**Increased POU Behaviors in Coast, 2007 - 2009**



<sup>8</sup> 2009 was the first time that chlorine residuals were measured in Kenya, so there are no comparison 2007 data

<sup>9</sup> Population Services International / Madagascar. (2008). [Household survey]. Unpublished report.

<sup>10</sup> Population Services International / Rwanda. (2010). [Household survey]. Unpublished report.

diarrhea, 3) felt it was their responsibility to treat their families water (high locus of control), and 4) were from an urban area.

### **INCREASED AWARENESS AND KNOWLEDGE ABOUT POU WATER TREATMENT:**

Today, awareness of POU water treatment is high in urban areas and growing significantly among rural communities. The intensified efforts in Coast province expanded availability of the range of all three POU products – WaterGuard, PUR, and Aquatabs – through partnerships with CBOs, extended rural commercial distribution, and enhanced safe water and hygiene communications through IPC techniques. The POUZN team worked to integrate safe water into other health programming as well as push for district and national MOH adoption. Table 4 provides information on changes over time on

WaterGuard knowledge and awareness that were measured in Coast Province.

Through various outreach channels, combined with mass media, knowledge and understanding of WaterGuard increased among caregivers of children under five. Most impressively, the number of caregivers who had heard of WaterGuard and knew where to purchase it increased significantly. In a 2009 survey of Coast province, 88.4 percent of households with children under five had ever heard of WaterGuard, 69 percent knew that diarrhea can be contracted from water, and 80.3 percent knew where to obtain WaterGuard.<sup>11</sup>

Through mass media and IPC techniques, enhanced by strong partnerships with local NGOs and CBOs, the safe water program has not only improved use, but also has had an impact on those behavioral determinants that will continue to influence gradual adoption of water treatment practices. Media communications, particularly branded radio spots, focused on other determinants of WaterGuard use, in particular, self-efficacy or confidence in one's ability to use WaterGuard correctly. Exposure to these messages permeated communications channels and led to improved practices around water treatment. Up to 41 percent of households in Coast saw or heard messages on treating water in the six months prior to the 2009 PSI survey and they were more likely to do something to improve water quality, as shown in Figure 6.

**TABLE 4: INCREASES IN AWARENESS AND KNOWLEDGE OF WATERGUARD, 2003–09**

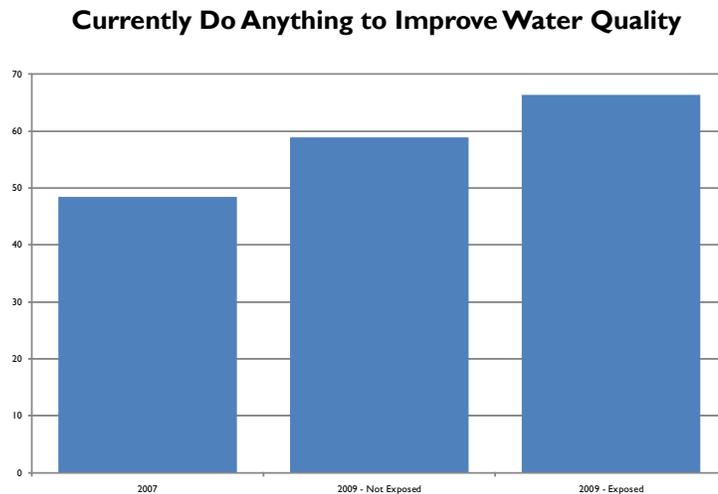
<b>Indicator (among all HHs with children under 5)</b>	<b>Coast, 2007</b>	<b>Coast, 2009</b>
% Have heard of WaterGuard	78	88
% Know WaterGuard is a water treatment dawa*	68	N/A
% Know where to purchase WaterGuard	72	80
% Believe that the price of WaterGuard is either cheap or just right (affordable)	93	N/A
% Identify contaminated water as a cause of diarrhea	45	69
% Know that children under 5 are most vulnerable to diarrhea	39	21

Sources: PSI/Kenya household surveys for 2003, 2005, 2007, and 2009

\* In Swahili, a dawa is a medicine, or treatment. In this case, the significance is viewing WaterGuard as a treatment for water.

<sup>11</sup> Population Services International / Kenya. (2010). [Coastal province household survey]. Unpublished report.

FIGURE 6: PERCENTAGE OF RESPONDENTS TREATING THEIR WATER



## LESSONS LEARNED

**Lesson 1: Both the private and the public sectors are effective distribution channels for household POU water treatment.** However the private sector is especially important in its role of expanding a market for and increasing availability of the treatment products. Use of both public and private sectors to distribute safe water solutions proved effective in Kenya. Maximizing availability of WaterGuard and PUR proved to be an effective way to reach caregivers of children under five.

**Lesson 2: IPC and mass communication are both important channels in encouraging new behaviors.** IPC is an important communication channel to “pick up” where mass media communications leaves off. Mass media communications generate awareness on a broad, national scale, while IPC reaches communities on a more individual level to tackle the barriers to adopting POU practices. However, human resource constraints continue to challenge

IPC scalability. Programs should understand that methodologies used to evaluate IPC interventions are not necessarily the same as methodologies to evaluate mass media communications.

**Lesson 3: Integrating POU into other health sector programs ensures a level of sustainability of messages and POU promotion.** Training of local resource people (e.g., youth groups, CBOs) in outreach techniques builds capacity in communities that can be leveraged for safe water outreach activities by other organizations as well by other health areas, e.g., promoting nutrition, breastfeeding etc. There are often only marginal costs to integrate POU into existing health activities such as malaria prevention promotion and Child Health Weeks.

**Lesson 4: It is important to understand regional variations in water quality and consumption when designing communications messages,** especially IPC messages. The 2009 PSI household survey in Coast province showed that households often collect, treat, and

use drinking water over a two-day period. This behavior conflicts with the definition of consistent use (treating water every 24 hours) and thus the promoted message of treating one's water every day. However, residual chlorine, particularly in a safe storage container, will keep drinking water safe for more than 24 hours,



as chlorine demand in water is lower in areas without turbidity. Therefore, consistent water treatment might be better measured as “do you treat all of your drinking water?” or as a cross-tabulation of the length of time that drinking water is consumed and the frequency of water treatment. In light of these water storage and consumption patterns, communications messages should stress safe storage, and use of covered containers and appropriate tools to retrieve water to prevent recontamination.

**Lesson 5: There is a link between coordination of cholera response at the provincial and district level and sustained access throughout the year.**

As the role of household POU water treatment becomes clearer at the national and district level, health officials and NGOs begin to supply POU during emergency

response to minimize spread of cholera outbreaks. Such integration is key to raising awareness and improving the profile of POU. Ongoing programs and emergency response efforts can be better coordinated to ensure consistent messages, build on program communications around safe water and hygiene, and ensure continued availability and awareness of POU after the vulnerable periods.

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## **ABOUT POUZN**

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