



# Household Water Treatment and Safe Storage in West Africa

## Report of a May 2013 Regional Workshop on Household Water Treatment and Safe Storage and Integrated Household-based Environmental Health Interventions

November 2013



Government of Ghana

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## 1. Abbreviations and Acronyms

AIDS – Acquired immunodeficiency syndrome

CONIWAS – Coalition of NGOs in Water and Sanitation in Ghana

GoG – Government of Ghana

GoL – Government of Liberia

GoSL – Government of Sierra Leone

HIV – Human immunodeficiency virus

HWTS – Household [or, point-of-use] water treatment and safe storage

JMP – Joint Monitoring Programme for Water Supply and Sanitation

M&E – Monitoring and evaluation

NAP – National Action Plan

NGO – Nongovernmental Organization

PLHIV – People living with HIV

PPP – Public-private partnership

UNC – University of North Carolina at Chapel Hill

UNICEF – United Nations Children’s Fund

WaSH – Water, Sanitation and Hygiene

WHO – World Health Organization

WSP – Water Safety Plan

## 2. Summary and key outcomes

From 6-8<sup>th</sup> May, 2013, in Accra, the Government of Ghana in collaboration with the World Health Organization (WHO), United Nations Children's Fund (UNICEF) and the Water Institute at the University of North Carolina at Chapel Hill (UNC) hosted a Regional Workshop for Western Africa on Household Water Treatment and Safe Storage and Integrated Household-based Environmental Health Interventions (the "Workshop"). This report documents the Workshop discussions and outcomes.

The Workshop provided an opportunity for officials from the Government of the Gambia (GoTG), Government of Ghana (GoG), Government of Liberia (GoL) and Government of Sierra Leone (GoSL) to connect with other professionals working in the region and share their experiences on HWTS focusing on topics such as: policy and regulatory frameworks, integration, implementation, monitoring and evaluation. Government officials from Nigeria also attended as observers.

A key outcome of the workshop was a deeper understanding of common challenges in the region, including the following:

- HWTS is only one part of the solution to diarrheal disease, yet it is often implemented independently of other WaSH interventions.
- Emergency situations are a frequent entry point for HWTS and occur regularly in some places yet often times many people remain under-served by preparedness and response plans.
- Low demand and/or awareness of the need for HWTS and product supply chain inefficiencies are major barriers to increasing use.
- Regulatory frameworks are absent, inadequate or ineffective, creating a disincentive for private sector firms to invest.
- Limited data on use of HWTS makes it difficult to assess what is being used where and how, and to develop strategies for reaching those in need.
- Funding is often a major constraint for governments.

A second outcome of the workshop was progress toward the development of national action plans outlining activities, next steps and responsibilities.

A number of themes and messages came out from the discussions including the following:

- National action plans should include SMART (Specific, Measurable, Attainable, Realistic, Time-bound) targets for use and be linked to budgetary allocations. For example, in national health and/or water budgets, there should be line-items dedicated to HWTS to facilitate government spending and support.
- Policy makers should engage the appropriate regulatory authorities for reviewing product conformity with national and/or international regulations.
- Health officials and implementing stakeholders should focus on groups of people that are at greater risk of diarrhoeal disease and more receptive to HWTS messages (expectant mothers, people living with HIV/AIDS).

- Health and water sector officials and implementing stakeholders should include HWTS as a component in the implementation of other WaSH and health efforts in order to maximize health gains.
- Emergency preparedness and response plans should address HWTS, including product selection that considers performance and user preferences, supply chains, and user training and support. If implemented effectively, these plans could catalyse long-term use of HWTS through pre-positioning of supplies and context-specific promotional efforts.
- Policy-makers should review subsidies, tariffs, taxes and product import regulations and standards to identify areas for reform in order to provide appropriate incentives to stakeholders and encourage greater uptake by vulnerable groups.
- Health and water sector officials and implementing stakeholders should strengthen monitoring and evaluation activities by including appropriate indicators in national and regional surveys, conducting water quality monitoring to identify populations in need, and ensuring correct and consistent use.
- Stakeholders seeking to mobilise resources for HWTS should take advantage of creative funding solutions, such as utilising carbon credits, micro-finance, and conducting advocacy efforts around HWTS with donors.

At the conclusion of the workshop, participants were invited to finalise their plans and submit them for seed funding from WHO and UNICEF.

### 3. Background

Worldwide, an estimated 768 million people drink water from unimproved sources (WHO & UNICEF Joint Monitoring Programme for Water Supply and Sanitation [JMP] 2013), and millions more drink contaminated water from improved sources (Onda, Lobuglio and Bartram 2012). Unsafe drinking-water, along with inadequate hygiene and sanitation is a major contributor to over a million deaths each year; many of these in children under the age of 5 (WHO 2012a). While countries work to provide universal access to safe, reliable, piped-in water, WHO has called for targeted, interim approaches that will accelerate the health gains associated with safe drinking-water for those whose water supplies are unsafe (WHO 2011b).

One such approach is the treatment and safe storage of household drinking-water to prevent contamination during collection, transport, and use in the home. A large and growing body of evidence demonstrates that the use of household water treatment and safe storage methods improves the microbiological quality of household water and reduces the burden of diarrhoeal disease in users (Clasen *et al.*, 2007; Fewtrell *et al.*, 2005; Waddington *et al.*, 2009). The methods used must be microbiologically effective, and users should practice them correctly and consistently, and sustain such use over the long-term, in order to achieve the desired health impact.

Achieving tangible results in the scaling-up of household water treatment and safe storage (“HWTS”) and integration into primary healthcare efforts depends, in large part, on the existence of national enabling environments and effective policies. In order to facilitate progress on this front,

the WHO and UNICEF-hosted International Network on Household Water Treatment and Safe Storage (the “Network”) adopted a target to have 30 countries establish policies on household water treatment by 2015 (WHO & UNICEF 2011).

The Workshop is part of a global effort on incorporating HWTS into relevant national water and health policies and strengthening evaluation and regulation of treatment methods. The workshop brought together a wide range of stakeholders to discuss challenges and lessons learned in developing supportive policy frameworks and effective national strategies for HWTS. In 2012, the Network organised a similar regional workshop involving Malawi, Mozambique and Zambia (WHO, UNICEF & UNC 2013), and in 2011, a workshop was held involving Ethiopia, Kenya, Rwanda, Tanzania and Uganda (WHO, UNICEF & UNC 2012). The reports from both these workshops are available online. Other regional workshops are currently in the planning stage.

#### 4. Objectives of the Workshop and this Report

The Workshop objectives were to:

- Provide an overview of current national HWTS policy and the regulatory environment in the participating countries;
- Identify strengths and challenges of the institutional environment as well as specific mechanisms for scaling-up;
- Share lessons learned in policy formulation and implementation and;
- Strategize on overcoming challenges to scaling-up and sustaining HWTS use through the drafting of national action plans on HWTS.

The purpose of this report is to record the discussions and contributions of Workshop participants in accordance with the above objectives and to document the key outcomes. In addition to the report, other Workshop outputs include:

- (1) distribution of the presentations to participants on a USB flash drive and online;
- (2) formulation of draft national action plans on HWTS; and
- (3) momentum for participants to follow-up and engage with the HWTS Network.

Appendices to this report include: Workshop programme of activities ([Appendix 1](#)), Workshop concept note ([Appendix 2](#)), country-specific briefing notes ([Appendix 3](#)), worksheets to guide the development of national action plans ([Appendix 4a & 4b](#)), group photo of the workshop participants ([Appendix 5](#)), list of all participants ([Appendix 6](#)); and a list of the presentations ([Appendix 7](#)).

#### 5. Overview of Workshop Proceedings

The Ministry of Local Government and Rural Development of the Government of Ghana, as Workshop host, welcomed all participants and delivered opening remarks. Then senior representatives of the Ministry of Health, Ministry of Water Resources, Works and Housing, the Coalition of NGOs in Water and Sanitation in Ghana (CONIWAS), WHO and UNICEF endorsed the

efforts of countries to develop a strategy for accelerating the use of HWTS by those in need of safe drinking-water.

The Workshop began with three presentations which provided a global perspective on HWTS: the first provided an overview of recent global initiatives, the second discussed the current state of the research and future areas of inquiry; and the third outlined considerations in scaling-up. In the second session, officials from the governments of the Gambia, Ghana, Liberia and Sierra Leone presented the current status of HWTS in their countries. In later sessions, presenters from government and non-government organisations focused on thematic issues such as policy and regulatory frameworks, integration, implementation, monitoring and evaluation.

In the second half of the Workshop, participants grouped themselves into teams representing the four officially-invited countries: the Gambia, Ghana, Liberia, and Sierra Leone. Groups were tasked with analysing the issues presented, developing a draft national action plan and presenting their conclusions in a plenary. Participants were provided with worksheets to guide them in considering areas such as: formulating national targets; regulation and evaluation; effective implementation; monitoring and evaluation, resources, and timelines. Workshop organisers and facilitators aided the discussions and provided technical assistance. Each group nominated a representative to present their draft national action plans and respond to questions from the audience.

The Workshop host invited closing remarks from its partners and then closed the event with words of prayer.

## 6. Summary of Discussions

The Workshop discussions are summarised in accordance with the objectives outlined in Section 4.

### **Objective 1: Provide an overview of current national HWTS policy and regulatory environment in the participating countries**

This section provides a brief overview of key aspects of the national HWTS policy and regulatory environment and WaSH context in each of the workshop countries.

Country	Policy lead	Policy mechanisms in which HWTS is explicitly mentioned or addressed	Regulatory authorities on products and services	Access to improved water	Access to improved sanitation	National use of HWTS*
The Gambia	Ministry of Health and Social Welfare	None	The Gambia Standards Bureau	89% (1.6m people)	68% (1.2m people)	n/a
Ghana	Ministry of Local Government and Rural Development	Draft National Strategy on HWTS (GoG 2012)	Ghana Standards Authority; Food and Drugs Authority	86% (19.8m people)	14% (3.2m people)	7.5%
Liberia	Ministry of Health and Social Welfare	Basic Package of Health and Social Welfare Services	Liberia Bureau of Standards	73% (2.9m people)	18% (720,000 people)	16%

		(GoL 2008), WASH Sector Strategic Plan 2012-2017 (GoL n.d.)				
Sierra Leone	Ministry of Health and Sanitation	Basic Package of Essential Services (GoSL 2010)	Sierra Leone Standards Bureau	55% (3.3m people)	13% (767,000 people)	8%

Note: Data on access to improved water and improve sanitation is from the 2013 JMP update. Data on national use of HWTS was compiled from national Demographic and Health Surveys: Ghana (GoG 2009), Liberia (GoL 2008), and Sierra Leone (GoSL 2009). The Gambia DHS is currently being prepared and thus the data is not available.

For more detail on the context in each country, refer to the country presentations and the country briefing notes listed in [Appendix 7](#) and [Appendix 3](#), respectively. The country presentations on the current status of HWTS covered the following topics: country overview, burden of disease, national health strategies, water and sanitation, integration of HWTS into health efforts, use and methods of household water treatment and safe storage, policy frameworks, programmatic initiatives, opportunities, and challenges. The country briefing notes provide additional written detail to the country presentations and were prepared by the Water Institute at UNC.

**Objective 2: Identify strengths and challenges of the institutional environment and identify specific mechanisms for scaling-up**

**Strengths and challenges of the institutional environment:** This section provides a brief overview of national policies and regulatory factors which appear to either create barriers or facilitate the scaling-up of HWTS, and are thus characterised as challenges or strengths.

The Gambia has a number of WaSH policies but, according to government officials, there is no policy or policy statement addressing HWTS, and no measures are in place for encouraging routine use. Addressing this gap may increase the perceived legitimacy of HWTS as a preventive health measure. Although the government has a target to reduce diarrhoea by 50% by 2015, there is no baseline from which to measure progress toward the goal. Other challenges include limited product options and a lack of information on where HWTS is currently used and where it needs to be targeted. The country has no national data on the use of HWTS. Studies are needed to assess use of HWTS in the Gambia.

In Ghana, the government has been leading an initiative since 2010 to develop a national strategy on HWTS to increase use from the current baseline of 7.5% (GoG 2009) to meet a range of targets. However, the government lacks funds and human resources to mobilise and engage local health authorities and staff effectively. Although there is a vibrant private sector, the commercial market for water treatment products is small, limiting availability at retail level. During the workshop, there was much discussion about the obligations of manufacturers and marketers with respect to performance claims on improving water quality and reducing microbiological contamination. Private sector and NGO participants called for a more transparent and comprehensive regulatory framework – the absence of which would be a deterrent to further investment.

Although Liberia does not have an official policy on HWTS or a national target, it does have the distinction of having achieved nationwide promotion of an effective HWTS product: WaterGuard.

However, limited success has been achieved due to supply chain constraints and logistical difficulties in distribution. In addition, government officials report limited demand for HWTS in areas outside urban centres.

In Sierra Leone, there is no national committee or body to coordinate and guide the HWTS activities of all stakeholders. During the workshop, the government identified its key challenges as stimulating inter-ministerial communication and collaboration, increasing monitoring of HWTS use and impact, regulating and evaluating the quality, performance, sale and/or use of HWTS options and improving the knowledge and awareness of government officials in how HWTS creates health gains.

All of the Workshop countries have a policy of decentralisation, although they are at varying stages of putting it into practice. In principle, decentralisation could be beneficial for HWTS scaling-up efforts: allowing local authorities to tailor a national strategy in ways that take account of the local context relating to drinking-water access and quality and hygiene behaviour while avoiding the common pitfall of trying to find a “one size fits all” or “silver bullet” for HWTS. However, this would require local authorities to have sufficient capacity to promote and implement HWTS, which Workshop participants cited as a key challenge for their countries. Not surprisingly, all workshop countries cite limited funding, limited technical capacity and competing priorities as constraints to effectively implementing policy directives.

**Mechanisms for scaling-up:** The network strategy and targets refer to scaling up as national-level replication of project-based HWTS. This ‘scaling up’ will be achieved through the adoption of HWTS into policies, programmes and regulations by key stakeholders (WHO & UNICEF 2011).

Most of the Workshop countries have, although in limited form, mechanisms for scaling up HWTS within national health programmes and/or initiatives. The Gambia is at an early stage of developing its national strategy and building government support for HWTS and there appear to be no mechanisms for scaling-up currently being explored.

In Ghana, the development of a national strategy on HWTS has been a three-year multi-stakeholder effort and is intended to carry the same importance as a national policy document. In addition, Ghana has begun implementation of Water Safety Plans (WSPs). WSPs are a framework for systematically assessing and managing risks of drinking-water supplies (WHO 2012c). Under the WSP framework, HWTS is considered a control measure to address hazards associated with unsafe supplies and/or contamination during handling and storage. Ghana is also one of the countries that has included HWTS in its emergency response/preparedness strategies.

In Liberia and Sierra Leone, a number of interventions, including HWTS, have been declared as “essential” and are included in basic health services. Although data on implementation was not provided, it suggests that local health officials and health service providers are empowered to recommend or prescribe the use of HWTS. Liberia also utilises HWTS as a cholera response measure.

Two important issues to support effective scale-up include the selection of optimally performing technologies and the monitoring and evaluation of HWTS. For the former, WHO recommendations

on microbiological performance of household water treatment options provide governments and users with health-based recommendations to inform technology selection (WHO 2011a). For the latter, the WHO/UNICEF toolkit on monitoring and evaluation of HWTS programmes includes tools, indicators, and case studies for policy-makers, researchers and practitioners to consider in improving the effectiveness of their efforts (WHO/UNICEF 2012). Initial efforts are underway to develop training materials to support dissemination and uptake of the toolkit.

### **Objective 3: Share lessons learned in policy formulation and implementation**

This section documents the lessons shared by Workshop participants with respect to developing and implementing policy for the advancement of HWTS.

The Gambia has had apparent success in implementing their expanded programme on immunizations and this could be a potential future platform for integrating HWTS using lessons learned from pilot efforts in Kenya (Briere et al 2012) and Nepal (Velleman et al 2013). Initial efforts in these countries have shown positive results from the integration of hygiene interventions and vaccinations. However the Workshop unfortunately heard no insights shared on the Gambia's success with their immunization program.

In both Ghana and Liberia, technical working groups and stakeholders' consultations are used to gain input for developing national strategies and policies. This practice is also in use outside West Africa too, in countries such as Kenya, with its Technical Working Group on Household Water Treatment and Safe Storage, and Malawi, which recently held a Stakeholders' Consultative Workshop on the Development of a National Action Plan (Rowe 2013b).

Liberia has actively sought technical assistance from USAID and UNICEF in the development of their WASH and HWTS strategies, whereas Malawi has sought assistance from the Water Institute at UNC in formulating its national action plan.

There were no clear examples of lessons learned from the experience of Sierra Leone.

The WHO-convened Task Force urges greater integration of HWTS with HIV, maternal and child health, dengue control, and emergency relief programmes (WHO 2013). The WHO suggested participants could use the statement in their inter-ministerial lobbying efforts.

Although it was not discussed in detail at the workshop, WHO recently published a survey and associated report which provided insights into existing mechanisms of government support (WHO 2012). There are also publications from WHO and UNICEF from which policy-makers could draw examples for their own national efforts, such as a new monitoring & evaluation toolkit (WHO & UNICEF 2012) and microbiological performance recommendations for evaluating HWTS (WHO 2011a).

Officials who intend to lobby for policy change may wish to accumulate supporting evidence in a number of areas. For example, efforts in Malawi to advocate for integration of safe water and maternal health led to requests from policy-makers for evidence on cost-effectiveness, health

impact, sustainability, and feasibility (Rowe, 2013a). Champions of HWTS should be prepared to respond to similar queries.

#### **Objective 4: Strategize on overcoming challenges to scaling-up and sustaining HWTS use through the drafting of national action plans**

This section of the report provides a brief overview of some of the aspects and next steps of the national action plans developed by the groups from the Gambia, Ghana, Liberia and Sierra Leone.

<b>Selected activities from the draft national action plans</b>			
<b>The Gambia</b>	<b>Ghana*</b>	<b>Liberia</b>	<b>Sierra Leone</b>
<ul style="list-style-type: none"> <li>• develop a water quality target</li> <li>• engage Ministry of Health and Department of Water Resources in evaluating HWTS technologies</li> <li>• identify suitable and user-friendly products</li> <li>• utilise health facilities as distribution centres</li> <li>• train water committees to monitor HWTS</li> </ul>	<ul style="list-style-type: none"> <li>• outsource HWTS supply and delivery to the private sector</li> <li>• conduct social marketing and community mobilization to increase demand for HWTS</li> <li>• support targeted research</li> <li>• conduct monitoring and evaluation activities</li> <li>• increase advocacy and dialogue around policy-related issues</li> </ul>	<ul style="list-style-type: none"> <li>• finalise water quality guidelines to include product certification</li> <li>• strengthen Technical Working Group on Hygiene Promotion</li> <li>• integrate HWTS into other programs (HIV/AIDS, Malaria, Nutrition, etc.)</li> <li>• scale up HWTS through targeting cholera hotspots, schools, pregnant women</li> <li>• integrate HWTS indicators into national M&amp;E frameworks and surveys</li> </ul>	<ul style="list-style-type: none"> <li>• conduct supply and demand study</li> <li>• integrate HWTS into existing policies (WSPs, emergency preparedness plan, etc.)</li> <li>• harmonise national WASH indicators</li> </ul>

Note: Due to a high number of participants from Ghana, two working groups were created. Selected recommendations of both have been combined and listed above.

In addition to what is mentioned above, several other ideas for advancing or scaling-up HWTS were raised during the workshop.

In the Gambia, it would be useful to explore why the expanded programme on immunization has had such a high rate of uptake. In addition, there are plans to develop a national sanitation policy and a national directorate for health promotion and education. The Government of will consider including HWTS within the new national sanitation policy and the strategy for the new national directorate for health promotion and education, as it appears to be a logical fit within these initiatives.

Officials in Ghana mentioned their interest in attaching HWTS to a national initiative on community-led total sanitation as a means of integration and stimulating uptake.

The Government of Liberia has established a partnership to invest in the water and sanitation sector with Sanitation and Water for All and the Millennium Challenge Corporation. It may be possible to situate HWTS within these funding frameworks by advocating for an integrated approach to water supply investment. For example, water supply projects could include components of HWTS promotion and implementation for those households at risk of re-contaminating their drinking-water during transport, handling or storage.

The Government of Sierra Leone is undertaking a water point mapping exercise to help with planning and investment. This could be integrated with sanitary risk inspections and water quality monitoring to identify high-risk areas where HWTS intervention is needed.

Given limited funding, technical capacity and time, government officials are advised to focus their attention specifically on vulnerable groups and to seek platforms for integration.

For more detail on the national action plans, refer to the presentations listed in [Appendix 7](#). These presentations are available online at: [http://waterinstitute.unc.edu/hwts/events/2013\\_accra](http://waterinstitute.unc.edu/hwts/events/2013_accra).

## 7. Next steps

Following the group work and presentations, WHO and UNICEF challenged participants to revise their action plans with input from their colleagues and stakeholders in their countries, and then submit them to WHO and UNICEF.

The contact points for each country's national action plan initiatives are:

Country	Responsible ministry	Lead contact
The Gambia	Department of Water Resources	Ms. Anna Haffner
Ghana	Ministry of Local Government and Rural Development	Mr. Kweku Quansah
Liberia	Ministry of Health and Social Welfare	Mr. Amos Gborie
Sierra Leone	Ministry of Health and Sanitation	Dr. Ansumana Sillah

Upon satisfactory receipt of the action plans, WHO and UNICEF would grant a small amount of seed funding to assist in implementing such plans. WHO is responsible for providing funding to the Gambia and Liberia and UNICEF is responsible for providing funding to Ghana and Sierra Leone. At the time of publication of this report, the Gambia had submitted its national action plan and seed funding had been disbursed by the WHO.

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## Appendix 1. Programme of Activities

**WEST AFRICA REGIONAL HWTS WORKSHOP  
LA PALM ROYAL BEACH HOTEL, ACCRA, GHANA  
6<sup>th</sup> to 8<sup>th</sup> MAY 2013**

### PROGRAMME OF ACTIVITIES

TIME	ACTIVITY/TOPIC	PRESENTER	MODERATOR
<b>DAY 1: 6<sup>th</sup> MAY 2013</b>			
8:30-9:00	<b>Registration of Participants</b>		
9:00-10:00	<b>Opening Ceremony</b>		
	<ul style="list-style-type: none"> <li>• Arrival of Guests of Honour</li> <li>• Opening Prayer by Ellen Gyekye, Programme Officer, School Health Education Programme Headquarters</li> <li>• Introduction of Chairman by Suzzy Abaidoo, WASH Officer, Water Directorate, MWRWH</li> <li>• Chairman's Opening Remarks</li> <li>• Welcome Address by Hon. Alhaji Collins Dauda, Minister for Water Resources, Works and Housing</li> <li>• Short Remarks by:               <ul style="list-style-type: none"> <li>○ Hon. Sherry Ayittey, Minister for Health</li> <li>○ Country Representative, UNICEF Ghana</li> <li>○ Country Representative, WHO Ghana</li> <li>○ Ben Arthur, Chairman of Local Organizing Committee and Executive Secretary, CONIWAS</li> </ul> </li> <li>• Cultural Display by LEKMA Schools Cultural Troupe</li> <li>• Objectives and expectations of the workshop by Ryan Rowe, Water Institute at UNC</li> <li>• Keynote Address by Hon. Akwasi Opong-Fosu, Minister for Local Government and Rural Development</li> <li>• Chairman's Closing Remarks</li> <li>• Vote of Thanks by Araba Sam Annan, Ghana</li> <li>• Closing Prayer by Abubakari Wumbei, National Coordinator, Resource Centre Network Ghana</li> </ul>		
10:00-10:15	<b>Group Photograph</b>		
10:15-10:45	<i>Cocoa Break</i>		
10:45-11:30	<b>Session 1: Global perspective on HWTS</b> Presentations on current initiatives, status of the research and an approach to scaling-up.		
Presentation s and discussion	<ul style="list-style-type: none"> <li>• Key initiatives: Objectives, strategies and activities</li> <li>• Current HWTS practices and research</li> <li>• Scaling-up HWTS efforts</li> </ul>	Maggie Montgomery, WHO HQ  Daniele Lantagne, Tufts University  Michael Forson, UNICEF HQ	Samuel Amoako- Mensah, UNICEF Ghana

11:30-12:30	<b>Session 2: Country presentations on current status of HWTS</b> Presentations on status of HWTS regarding policies, national strategies, leadership and enabling environment		
Presentations and discussion	<ul style="list-style-type: none"> <li>Liberia</li> <li>Ghana</li> </ul>	<p>Amos Gborie, Ministry of Health</p> <p>Demedeme Naa, Ministry of Local Government and Rural Development</p>	<p>Akosua Takyiwaa Kwakye, WHO Ghana</p>
12:30-13:30	<i>Lunch break</i>		
13:30-14:30	<b>Session 2: Continued Country presentations on current status of HWTS</b>		
Presentations and discussion	<ul style="list-style-type: none"> <li>The Gambia</li> <li>Sierra Leone</li> </ul>	<p>Anna Haffner, Department of Water Resources</p> <p>Ansumana Sillah, Ministry of Health and Sanitation</p>	<p>Akosua Takyiwaa Kwakye, WHO Ghana</p>
14:15 – 15:00	<b>Session 3: Integrating HWTS into other programmes</b> Presentations on integrated approaches with lessons from a policy perspective		
Presentations and discussion	<ul style="list-style-type: none"> <li>Emergency Response and Cholera in Ghana</li> <li>WASH Splash (HWWS + HWTS + CLTS in Ghana)</li> <li>Integrating Safe Water and Maternal Health in Malawi</li> </ul>	<p>Enoch Ofosu, WASH in Emergencies Committee</p> <p>Emma Joan-Halm, UNICEF Ghana</p> <p>Ryan Rowe, Water Institute at UNC</p>	<p>Sebora Kamara, WHO Sierra Leone</p>
15:00-15:30	<i>Cocoa Break</i>		
15:30-16:30	<b>Session 4: Implementing HWTS and good practices</b> Presentations on implementation methods and good practices with lessons from a policy perspective		
Presentations and discussion	<ul style="list-style-type: none"> <li>Ceramic filters in Ghana</li> <li>Implementation in Nigeria</li> <li>Water Safety Plans in Ghana</li> </ul>	<p>Mary Kay Jackson, Pure Home Water</p> <p>Ajibade Olokun, UNICEF Nigeria</p> <p>Worlanyo Siabi, Community Water and Sanitation Agency</p>	<p>Ben Arthur, CONIWAS</p>
16:30-16:45	<b>Wrap up, announcements and administrative issues</b>		<p>Maggie Montgomery, WHO HQ</p>
16:45-17:30	<b>Facilitators' debrief</b>		
17:30-18:30	<b>Welcome Cocktail</b>		

DAY 2: 7 <sup>th</sup> May 2013			
8:30-8:40	<b>Summary of Day 1</b>	Ryan Rowe, Water Institute at UNC	
8:40-10:00	<b>Session 6: Regulation, control and national standards</b> Presentations on international and national regulation of HWTS		
Presentations and discussion	<ul style="list-style-type: none"> <li>Evaluating the performance of HWTS</li> </ul>	Maggie Montgomery, WHO HQ	Michael Forson, UNICEF HQ
10:00-10:30	<i>Cocoa Break</i>		
10:30-11:30	<b>Session 7: Programme monitoring and evaluation</b> Presentations on approaches to monitoring and evaluation of HWTS		
Presentations and discussion	<ul style="list-style-type: none"> <li>Monitoring and Evaluation tools</li> <li>Monitoring Household Drinking Water Quality through a country survey</li> </ul>	Daniele Lantagne, Tufts University  David Duncan, UNICEF Ghana	Maggie Montgomery, WHO HQ
11:30-12:30	<b>Session 8: Continued Group work on the development of national HWTS action plans, Part A</b> Country-themed break-out sessions focused on the development of national action plans		
Group work	<b>Facilitators</b> The Gambia: Maggie Montgomery (WHO HQ) Ghana: Michael Forson & Samuel Amoako-Mensah (UNICEF), Mary Kay Jackson (Pure Home Water) Liberia : Ryan Rowe (Water Institute at UNC) Sierra Leone: Daniele Lantagne (Tufts University)		
12:30-13:30	<i>Lunch Break</i>		
13:30-15:00	<b>Session 8: Continued Group work on the development of national HWTS action plans, Part B</b>		
15:00-15:30	<i>Cocoa Break</i>		
15:30-16:30	<b>Session 8: Continued Group work on the development of national HWTS action plans, Part C</b>		
16:30-16:45	<b>Wrap up, announcements and administrative issues</b>	Michael Forson, UNICEF HQ	
DAY 3: 8 <sup>th</sup> May 2013			
9:00 – 9:30	<b>Summary of Day 2</b>	Ryan Rowe, Water Institute at UNC	
9:30 – 10:15	<b>Session 8: Continued Group work on the development of national HWTS action plans, Part D</b>		
10:15-10:45	<i>Cocoa Break</i>		
10:45-12:30	<b>Session 9: Country presentations on the national HWTS action plans and next steps</b> Break-out groups present their national action plans		
Presentations and discussion	<ul style="list-style-type: none"> <li>Liberia</li> <li>Ghana – Group A</li> <li>Ghana – Group B</li> </ul>	Christian Yeakula, Liberia Water & Sewer Corporation  Araba Sam Annan, Independent consultant  Shawn Dillard, ProWorld Volunteers	Daniele Lantagne, Tufts University

12:30 – 13:30	Lunch Break		
13:30 – 14:30	<b>Session 9: Continued Country presentations on the national HWTS action plans and next steps</b>		
Presentations and discussion	<ul style="list-style-type: none"> <li>Sierra Leone</li> <li>Gambia</li> </ul>	Ansumana Sillah, Ministry of Health and Sanitation  Anna Haffner, Department of Water Resources	Daniele Lantagne, Tufts University
14:30-15:30	<b>Session 10: Translating plans into action</b>		
Moderated Discussion with all	<ul style="list-style-type: none"> <li><b>Next Steps (timelines, key contacts, commitments, seed funding)</b></li> </ul>		Michael Forson, UNICEF HQ; Maggie Montgomery, WHO HQ
15:15 – 15:30	<i>Cocoa Break</i>		
15:30-16:00	<b>Closing Ceremony</b>		

## Appendix 2. Concept Note

### Ghana Technical Working Group on Household Water Treatment and Safe Storage

In collaboration with

### The International Network on Household Water Treatment and Safe Storage (the “Network”)

### Revised Concept Note and Proposed Workshop Agenda

### *West Africa Region Household Water Treatment and Safe Storage Workshop*

Accra, Ghana

6-8 May, 2013

*Theme: Scaling-up HWTS – National policy environment and integration strategies*

#### Summary

This concept note provides the objectives, expected outputs and arrangements for a proposed West Africa Regional Household Water Treatment and Safe Storage (HWTS) workshop to be held in Accra, Ghana. The workshop will be hosted by the Government of Ghana and its stakeholders in conjunction with World Health Organization (WHO) and the United Nations Children Fund (UNICEF).

#### Background

An estimated 780 million people drink water from unimproved sources, and millions more drink contaminated water from improved sources (UNICEF/WHO, 2012). Unsafe drinking-water, along with inadequate hygiene and sanitation contributes to an estimated 1.9 million annual deaths, many of these in children under 5 years of age (WHO, 2011c). While countries work to provide universal access to safe, reliable, piped-in water, WHO and UNICEF have called for targeted, interim approaches that will accelerate the health gains associated with safe drinking-water for those whose water supplies are unsafe (Sobsey, 2002). One such approach is household water treatment and safe storage (HWTS) to prevent contamination during collection, transport, and use in the home. A growing body of evidence demonstrates that the use of HWTS methods improves the microbiological quality of household water and reduces the burden of diarrhoeal disease in users (Clasen *et al.*, 2007; Fewtrell *et al.*, 2005; Waddington *et al.*, 2009).

Recently, West African countries have made impressive gains in implementing HWTS and sustaining such implementation through integration with other environmental health interventions. For example, Ghana had integrated handwashing with soap, safe excreta disposal and HWTS into a concept called “WASH Splash<sup>1</sup>”. WASH Splash has been rolled out in a number of regions and in emergencies and results indicate in increased uptake of interventions (compared to a vertical approach). In light of these efforts, the workshop would provide a timely

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<sup>1</sup> The “WASH Splash” initiative targets 3 complementary behaviours, which have been proven by global studies to have a high impact on diarrhea-related, child morbidity. The 3 behaviours are Safe Excreta Disposal, Hand Washing with Soap and Household Water Treatment and Safe Storage (HWTS);

forum to share lessons learned, identify the policy and enabling environments, and work towards developing national strategies for integrating HWTS into other public health interventions and its subsequent scaling-up.

Achieving tangible results in the scaling-up of HWTS and integration into critical public health and WASH programmes depends, in large part, on national enabling and policy environments. Therefore, the workshop would provide an opportunity to identify and strengthen national policies and strategies that support HWTS as one of the interventions for reducing diarrhoeal diseases. It will also help the development of actions plans to integrate HWTS into other identified public health interventions and support its effective implementation. Such efforts are in-line with international targets on establishing national HWTS policies which have been articulated in the Strategy of the International Network on Household Water Treatment and Safe Storage<sup>2</sup> (the “Network”) and have been adopted by the World Water Forum 2012.

The Network is using a regional approach to support countries to develop action plans and strategies to scale up HWTS and its integration into other public health interventions. It takes the form of regional workshops bringing together between 3 to 5 countries in same region with similar HWTS situations for planning and development of such action plans. Similar regional workshops were held in Uganda (2011) for the East African Region and in Mozambique (2012) for the South African Region.

The Network has identified Ghana as a suitable host for such a regional workshop for several reasons. The government of Ghana has been able to establish an enabling environment for the uptake of HWTS and will serve as an effective model for south-south cooperation and learning. Furthermore, Ghana is well equipped in regards to meeting and lodging facilities to accommodate participants from neighbouring countries. Finally, this workshop provides the opportunity to broaden Network links to national efforts and vice versa in the West African Region.

### **Goal**

To support participating countries to identify existing policies and develop/strengthen, strategies and regulation of HWTS to support effective implementation and integration with other household environmental health interventions.

### **Specific Objectives**

- Provide an overview of current national HWTS policy and regulatory environment in the participating countries;
- Identify strengths and challenges of the institutional environment and identify specific mechanisms for scaling-up (i.e. HWTS targets, inclusion of HWTS in national efforts to prevent and treat childhood diarrhea, HIV/AIDS & TB, respiratory disease, etc);
- Share lessons learned in policy formulation and implementation and
- Strategize on overcoming challenges to scaling-up and sustaining HWTS use through the drafting of national action plans towards the development of national strategies for implementation

### **Participants**

The workshop will target key government officials in decision making positions from identified ministries that address HWTS. Representatives are also expected from other important stakeholder groups, while keeping the workshop to a manageable size of approximately 60 participants. Participants will be invited from four countries actively working on HWTS and contributing to the Network (Gambia, Ghana, Liberia, and Sierra Leone). These countries are proposed based on their common language and similar needs in regards to safe-drinking water.

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<sup>2</sup> WHO/UNICEF (2011). *International Network on Household Water Treatment and Safe Storage. Funding and Strategy and Proposal.* [http://www.who.int/household\\_water/resources/NetworkStrategyMar2011.pdf](http://www.who.int/household_water/resources/NetworkStrategyMar2011.pdf)

Participants will include national and regional government officials from the Ministries of Health, Water (or equivalent), Public Works, Education and others as relevant, WHO, UNICEF, and organizations implementing HWTS in the selected West African countries. Select global partners and members of the Network, development agencies, and representatives from the informal sector and academic institutions will also be invited. A particular focus will be given to those organizations working on integrated interventions and delivery approaches.

### **Method of Work**

- 1) Identification of relevant background documents and a short briefing note on HWTS national policy environment, as well as a brief overview of implementation and integration activities in the participating countries. This will be done through surveys and desk studies. Country HWTS profiles will be developed based on available information.
- 2) Convening a three-day workshop which will include:
  - Each country will give a presentation of the HWTS environment. This presentation will be led by the government and will highlight key enabling environments and policy shifts towards ownership and integration of HWTS (a presentation template will be provided)
  - Examples of implementation approaches, monitoring and lessons learned from implementers, government and donors;
  - Small working group sessions addressing specific challenges regarding delivery of integrated interventions, supporting and monitoring sustained use and innovative financing mechanisms;
  - Draft national plan of action for implementing national HWTS policies and scaling-up integrated household environmental health interventions;
  - Discussion of implementation of WHO recommendations on evaluating HWT<sup>3</sup>; and
  - Discussion of use of WHO/UNICEF HWTS monitoring and evaluation indicators and tools<sup>4</sup>.

### **Expected Outputs**

- Workshop report with key action points. This report will be presented at the Annual Network meeting in 2013;
- Draft National plans of action for developing/reviewing HWTS strategies for scaling-up and integration into other public/environmental health interventions; and
- Increased capacity for ongoing information sharing in the region.

### **Key agenda items**

The following presents key agenda items. A more detailed agenda will be developed by the local organizing commitment with input from WHO and UNICEF.

### **Day 1: National HWTS policy and regulating environments, and best practices in integration**

- Brief opening remarks by officials from Ministry of Health, WHO, UNICEF
- Status of HWTS in national policies and strategies in Gambia, Ghana, Liberia, and Sierra Leone
- Regulation and technology evaluation-global and national efforts
- Landscape of current HWTS practices and efforts to promote hygiene behaviour change
- Examples of integrated efforts in West Africa

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<sup>3</sup> WHO, 2011. *Evaluating household water treatment options: Health based targets and microbiological performance specifications*. June 2011. Geneva, Switzerland.

<sup>4</sup> WHO/UNICEF, 2012. *Monitoring and evaluation household water treatment and safe storage toolkit*. October 2012. Geneva, Switzerland.

## **Day 2: Integrated efforts and scaling-up**

- Continued discussion of integrated efforts, especially in addressing needs of vulnerable groups (small children, malnourished, people living with HIV/AIDS)
- Effective monitoring and evaluation of HWTS, including water quality monitoring at the household level
- Group work in teams on national action plan

## **Day 3: Action plan for Scaling-up HWTS**

- Group work on action plan
- Presentation of action plans, follow-up actions and discussion
- Resource mobilisation and next steps

## **Workshop conclusion and follow-up**

At the conclusion of the workshop, national teams will be tasked to revise their draft action plans based on input gained during the workshop and from appropriate counterparts in their home Ministries. Once revised and submitted these teams will receive 3,000 USD from WHO/UNICEF to facilitate finalizing the plan for implementation. This may involve hosting a national workshop on one particular item of focus or conducting an assessment in the field.

During the workshop and afterwards, brief surveys will be administered to participants to gauge their satisfaction and knowledge gained. The purpose of the evaluation will be to improve future workshop design and aid in continuing work with the participants.

Finally, a workshop report will be published by the Network documenting the key proceedings and workshop outcomes. The report will be meant to serve as a reference for both workshop participants and the wider global audience of Network participating organizations engaged in HWTS policies development and integration. The report will be made available on the WHO HWTS website where other relevant materials are located including a report from a similar regional workshops held in Uganda<sup>5</sup> in 2011 and Mozambique in 2012<sup>6</sup>.

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<sup>5</sup> WHO/UNICEF, 2011. *Report of a workshop for countries in East Africa: National Household Water Treatment and Safe Storage Strategies and Integrated Household Environmental Health Interventions*. [http://www.who.int/household\\_water/resources/en/](http://www.who.int/household_water/resources/en/)

<sup>6</sup> The Southern African Regional workshop on HWTS was held 20-22 June 2012 in Maputo, Mozambique. The workshop report is being finalized and will be available online shortly.

### Appendix 3. Country Briefing Notes on HWTS

These briefing notes are based on preliminary desktop research and have not been peer-reviewed. The circumstances described within may change with time and thus readers may wish to perform additional research to assess recent developments.

*Gambia* | [Download](#)

*Ghana* | [Download](#)

*Liberia* | [Download](#)

*Sierra Leone* | [Download](#)

Note: All proceedings and workshop materials are available at <http://www.waterinstitute.unc.edu/hwts-events>

## Appendix 4a. Worksheet for Sessions A & B

### National HWTS Policies and Integrated Household Environmental Health Interventions in West Africa Working Sessions A: National Targets B: Regulation/Evaluation

7 May 2013 (11:30-12:30; 13:30-16:30 4 hours total)

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This worksheet will guide participants through working Sessions A and B. After all four working sessions, on day 3 each country will present draft action plans. Nationals will return to their Ministries, revise the plan as appropriate, and submit to WHO/UNICEF for 3,000 USD in seed funding to facilitate implementation of one or more components of their plans and seeking of additional funds.

Draft action plans should address the following components:

- Problem statement concerning diarrhoeal disease, especially among at-risk populations and contribution of HWTS to reducing disease burden
- Summary of existing (or in development) policies/strategies that address HWTS and identification of policy gaps (if any)
- National targets for HWTS
- Regulation/evaluation aspects
- Effective implementation, including targeting at-risk populations and correct and consistent use
- Monitoring and evaluation of HWTS, especially within larger efforts to address environmental health
- Resource mobilisation and responsibilities

Breakout group	Facilitator	Rapporteur
Gambia	Maggie Montgomery	To be decided by group
Ghana 1	Michael Forson	To be decided by group
Ghana 2	Mary Kay Jackson/Samuel Amoako-Mensah	To be decided by group
Liberia	Ryan Rowe	To be decided by group
Sierra Leone	Daniele Lantagne	To be decided by group

#### Group Members' Responsibilities

a) Contribute to discussion in a meaningful and respectful manner, b) listen to others, and c) assist in preparing materials for final presentation.

#### Facilitators' Responsibilities

a) Provide briefing on how the process will work, b) be aware of time constraints c) ensure that a balance of voices are heard, especially quiet people d) help group in identifying a rapporteur and person(s) to present on Day 3.

#### Rapporteurs' Responsibilities

a) Capture key comments and ideas, b) report back to group at the end of the session to ensure all ideas were captured, c) assist in summarizing ideas for final presentation.

#### Instructions:

Before beginning, please read carefully through each of the questions. Then discuss and as a group, formulate responses.

#### Session A: National Targets

##### Aim of Session

Discuss extent of the health problems associated with unsafe drinking-water, identify role of HWTS as one solution to this problem, and discuss targets for HWTS in the context of other national health and safe drinking-water aims.

## **Discussion items**

### **Problem statement**

- What is the extent of the problem regarding access to safe and reliable water supplies? Which populations are most at risk? Where are these populations located in the country?
- What is the morbidity and mortality related to diarrhoeal disease?
- What is the extent of other diseases/conditions closely linked to diarrhoeal disease including HIV, malnutrition, maternal and neonatal mortality, etc?
- What are the highest national priorities for you as they relate to health and development? Where does government allocate most of its attention and /or funding?

### **Contribution of HWTS to national vision and policies**

- What is the development vision for your country? How does / can HWTS contribute to national poverty reduction and the MDGs on child health, maternal health and HIV/AIDs, malaria, and TB efforts?
- How is HWTS addressed (or can be included) in health policies, child health and nutrition and HIV/AIDS programmes, sanitation and hygiene strategies and emergency preparedness efforts?
- How can the health sector work more closely with the water/sanitation sector? What role do international platforms and strategies play in national planning around health and development? For example, the WHO/UNICEF Global Action Plan to Prevent and Control Childhood Pneumonia and Diarrhoea.
- How does/can HWTS contribute to your country's implementation of the UN Universal Human Right to Safe Drinking-Water and Sanitation?

### **Target for HWTS within larger health and/or water quality efforts**

- What existing/draft targets are in place for specific health conditions with a direct link to HWTS (i.e. testing and treatment targets for those living with HIV, reduction of childhood deaths associated with diarrhoea, etc)? How can HWTS be linked to these targets?
- What existing/draft targets are in place for safe drinking-water? Where does household water treatment and safe storage contribute to these targets?
- Does the country implement water safety plans? If not, discuss further the importance of such plans. If so, discuss how HWTS can be positioned as an important control measure (especially from the storage aspect as the majority of rural and urban households, regardless of the type of supply, store water).

## **Session B: Evaluation and Regulation**

### **Aim of Session**

Discuss regulatory structure for HWTS and current approach to reviewing HWTS products and technologies, and consider where these process could be optimizes to facilitate active participation by all stakeholders and contribution to national health and safe drinking-water aims (i.e. an "enabling environment")..

## **Discussion items**

### **Institutional hurdles and solutions**

- Who is the lead authority for regulation of HWTS and what is their working relationship with other entities? Are some entities/ministers missing that should be involved?
- How are products certified and who enforces such certifications? For how long is a product certified? Are there any regulations on product labeling and consumer education?
- What trade barriers or incentives exist that affect the price of HWTS products? Are import duties or taxes causing HWTS products to be less affordable?

### **Laboratories and testing agencies**

- Which laboratories currently test products? What kind of products do they test?

- What parameters do they test for (fecal indicators, arsenic, fluoride, etc)? Do any laboratories examine human pathogens (bacteria, viruses and protozoa)?

#### Key considerations in the WHO Scheme to Evaluate HWT

- WHO proposes to evaluate products sold internationally for which private manufacturers submit their technologies for review. How will countries evaluate local technologies? How can the methodology for testing (based on health-targets) be adopted for such local technologies?
- How can your country avoid or manage overlapping activities at international and national levels?
- How can the evaluation of household water treatment performance both in laboratories and in the field be linked with other water quality surveillance efforts?
- Should there be a rapid review of technologies for emergency situations? If so, how might these be done?

#### Standards for local manufacturers

- Some technologies may vary considerably by differences in local production techniques and materials and affect their performance. How might a country develop quality standards for manufacturing to ensure a minimum standard (i.e. of biosand and ceramic filters)?

#### Summary of existing (or in development) plans and strategies

The following two examples outlines key elements of country action plans from Tanzania and Malawi which may provide ideas/thoughts for your discussion.

#### Example 1: Snapshot of National HWTS Action Plan-Tanzania

The Tanzanian Ministry of Health and Social Welfare has finalized their “Comprehensive country plan for scaling-up household water treatment and safe storage 2011-2016”.

Item	Details	Basis/Supporting actions
National vision and goal/target	To have communities accessing safe drinking-water at the household level. To increase by 20% the usage of acceptable HWTS by 2016.	-Contribution to national strategy for growth and reduction of poverty (Mkukuta II) -MDGs (child health)
HWTS in National Policies	-National Health Policy -Health Sector Strategic Plan III -Environmental health, hygiene and sanitation strategy	HWTS contributes to prevention and control of communicable diseases including diarrhea and opportunistic infections.
Actions to achieve goal	-Establish support system for HWTS -Strengthen coordination -Increase access to HWTS -Create awareness -Mobilize resources -Monitor and evaluation	-Develop guidelines and standards for HWTS -Establish and operationalize technical working group -Integrate HWTS into IMCI, HIV/AIDS, emergency preparedness programmes

#### Example 2: Snapshot of National HWTS Action Plan-Malawi

The Malawi Ministry of Health is in the process of seeking stakeholder input to their National Action Plan for Household Water Treatment and Safe Storage for 2013-2018.

Item	Details	Basis/Supporting actions
National vision and goal/target	- Ensure universal access to safe drinking water at the household level by 2018. - Increase the proportion of the <i>population in need</i> practicing HWTS from 32 percent to 70 percent by 2018.	- Contribution to national strategy for growth and reduction of poverty (Malawi Growth and Development Strategy) - Wat/san expansion, dynamic situations (e.g. emergencies) changes population in need
HWTS in National	- HWTS is recommended as part of HIV prevention and care	- HWTS can contribute to the health impact desired from other programs,

Policies	- Include HWTS as a performance indicator in the annual Joint Sector Review	such as HIV prevention and care, and water supply investment
Actions to achieve goal	- Establish a national coordinating body to identify and tackle critical challenges around implementation of HWTS. -Map HIV program implementers and monitor compliance with guidelines	- Creates multi-sector government support and engagement - Monitoring of HIV programmes will provide a measure of access to HWTS by this vulnerable group

## Appendix 4b. Worksheet for Sessions C & D

### National HWTS Policies and Integrated Household Environmental Health Interventions in Western Africa

#### Working Sessions

#### C: Effective Implementation

#### D: Monitoring and Evaluation, Resources and Timeline

7, 8 May 2013 (15:30-16:30; 8:30-11:30, 4 hours total)

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#### Session C: Effective Implementation

##### Aim of Session

Discuss *mapping of HWTS (who is doing what and where HWTS is used)*, how to target specific populations with particular options, and key issues concerning supply chain and delivery channels.

##### Mapping and Roles and Responsibilities

- Where is HWTS being used? How often? and by whom?
- Who is supporting implementation of HWTS and what is the role of government, NGOs, private sector, academia and international organizations?
- What can you and your organization do to contribute to the significant increase in the uptake of effective and sustainable HWTS?

##### HWTS Options

- What are the different contexts in which HWTS will be used and how does this influence options provided? (i.e. chlorine alone should not be used in programmes targeting those with HIV as it does not remove cryptosporidium cysts, which are a major cause of diarrhoeal morbidity and mortality in those living with HIV).
- How might an immediate response to an outbreak differ from one where an option will be used for a longer-term? What supply chain issues should be considered?
- What about populations that are mobile and/or semi-nomadic?

##### Integration with health efforts

- How can HWTS be included in supply chains that deliver essential medicines, diarrhoeal treatment (ORS), etc to health care facilities nation-wide?

##### Behaviour Change

- What are strategies for increasing correct and consistent use? How can these be adopted (e.g. focus on those at greater risk, provide on-going support, target psychological factors in a given population - risk, attitude, norm, ability, and self-regulation)?

##### Capacity building

- What additional training is needed for health care workers, community water/sanitation officers, school teachers? How can this be streamlined into their existing tasks?
- What resources (nationally/internationally) are available to support capacity building efforts?

#### Session D: Monitoring and Evaluation (M&E), Resources, Timeline

##### Aim of Sessions

*Articulate key indicators to use in M&E and how monitoring can be integrated into other survey efforts to assess health and water quality.* In addition this session will assess *resource needs and milestones and timeline*

##### Discussion items

##### Key indicators and selection

- What are the core indicators to ask in relation to HWTS? What limitations do they have and how can these be addressed? What questions (and answers) will allow you to better measure the success of your work? What questions are *not* important to you, your program, and other stakeholders? Finally, what will you *really* do with the data you collect and will you/how will you disseminate the findings back to the community and other stakeholders?

#### Use of indicators within broader monitoring efforts

- Discuss existing national and household surveys. How can HWTS be included in these?
- Discuss linking with other efforts to monitor the use of insecticide treated bednets, safe cookstoves, exclusive breastfeeding, community care programs for HIV, and/or comprehensive WASH efforts?
- What needs to be done to include such indicators? How can HWTS be used to monitor success of other efforts? (I.e. if HIV individuals correctly and consistently use HWTS, HIV programmes will know these individuals are more likely to regain health faster and become more productive members of society).

#### Resources

- What resources are needed to carry out action plan (human, financial, infrastructure...i.e. HWT technologies)?
- How can these resources be obtained (grants, carbon credits, microfinance, private sector, integration with other public health efforts)?
- How can the seed funding be used as part of a larger resource mobilization effort?

#### Timeline

- What are immediate actions that will be taken after this workshop? Who will be responsible? What support will you need from senior management? Will you need to conduct lobbying efforts?
- What are key dates/events for HWTS (i.e. inclusion of HWTS, along with handwashing with soap in a rotavirus vaccination campaign or completion of a national strategy for water quality?)
- How can the seed funding be used as part of a larger resource mobilization effort?

After the fourth working group session all groups should be prepared to present their draft national action plans. These can be presented either on flipchart paper or with powerpoint; the main objective is to clearly present the key items in **15 minutes**. The following should be addressed:

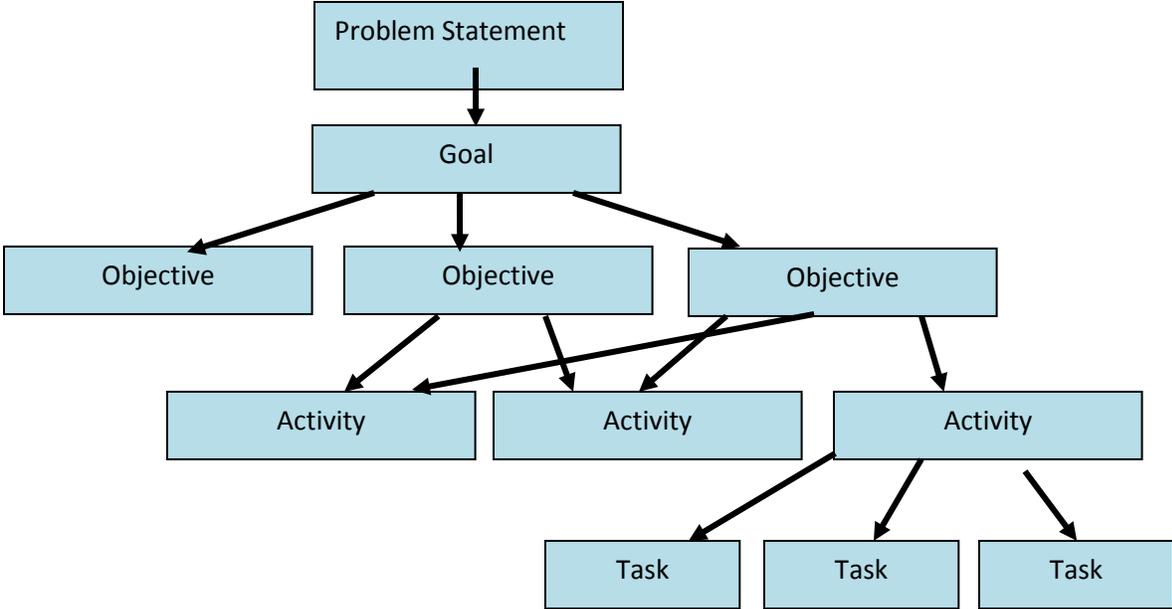
1. Problem statement concerning diarrhoeal disease, especially among at-risk populations and contribution of HWTS to reducing disease burden.
2. Summary of existing (or in development) policies/strategies that address HWTS and identification of policy gaps (if any).
3. National targets for HWTS
4. Regulation/evaluation aspects
5. Effective implementation, including targeting at-risk populations and correct and consistent use.
6. Monitoring and evaluation of HWTS, especially within larger efforts to address environmental health.
7. Resource mobilisation and responsibilities
8. Milestones and timeline

#### Examples of Stakeholder Roles

Stakeholder Group	What we can offer / comparative advantage	What can help us do this
Government	Supportive policies Increased advocacy and coordination between health, water, education, agriculture sectors Reduced tariffs	Clear strategy/goal Effective coordination among ministries

	Certification/recognition of international certification	
NGOs	Implementation Social marketing Monitoring	Alignment of common goals and support for Government policies/priorities Support for M&E
Private sector	Manufacture and supply; build capacity of local entrepreneurs'	Efficient regulation
International organizations	Link national efforts with regional/international work Provide technical inputs	Increased awareness of guidance/strategies Improved capacity building
Donors	Include HWTS in major national health efforts (i.e. in PEPFAR and/or Global Fund Grants) Include HWTS as a control measure in support of water safety plans	Clear government strategy on how HWTS will contribute to health and water quality efforts Recommendations by international bodies (i.e. WHO)
Academia	Conduct operational research key issues regarding behavior change and correct and consistent use, health impact among vulnerable groups	Coordination with NGOs and government South/south; south/north collaborations

It may also be helpful to think about the national plan within a possible structure. Please see the figure below as an example.



Appendix 5. Group photo



Photo of workshop participants, La Palm Royal Beach Hotel, Accra, Ghana. Credit: Ryan Rowe.

## Appendix 6. List of participants

	<b>Name</b>	<b>Organization</b>	<b>Country</b>
1	Juliana Westerblom	UNICEF	Burkina Faso
2	Ruben Um Bayiha	UNICEF	Burkina Faso
3	Anna Haffner	Department of Water Resources	The Gambia
4	Hannah Neumeyer	WASH United	Germany
5	Joseph Addo Ampofo	Council for Scientific and Industrial Research, Water Resources Institute	Ghana
6	Worlanyo Siabi	Community Water and Sanitation Agency, Upper West Region	Ghana
7	Martha Tia-Adjei	Environmental Health and Sanitation Directorate, Northern Region	Ghana
8	Martin Amevor	Environmental Health and Sanitation Directorate, Central Region	Ghana
9	Issahaku Mariam	Environmental Health and Sanitation Directorate, Northern Region	Ghana
10	Francis Abotsi	Environmental Health and Sanitation Directorate, Volta Region	Ghana
11	Asamani Cletus	Environmental Health and Sanitation Directorate, Upper East Region	Ghana
12	Rex Jakpa	Environmental Health and Sanitation Directorate, Upper West Region	Ghana
13	Astrid Van Agthoven	Embassy of the Netherlands	Ghana
14	Wilhelmina Quarcoopome	Food & Drug Authority	Ghana
15	Peter Serinye	Ghana Watsan Journalists Network	Ghana
16	Edmund Smith-Asante	Ghana Business News	Ghana
17	Benjamin Arthur	Ghana Coalition of NGOS in Water and Sanitation	Ghana
18	Ellen Gyekye	Ghana Education Service, School Health & Education Programme	Ghana
19	Kate Opoku	Ghana Education Service, School Health & Education Programme	Ghana
20	Edith Clarke	Ghana Health Service	Ghana
21	Grace Kafui Annan	Ghana Health Service, Health Promotion Department	Ghana
22	Seth Adjei	Ghana Health Service, Health Promotion Department	Ghana
23	Wilhelmina Okwabi	Ghana Health Service, Nutrition Unit	Ghana
24	Beth Devroy	Ghanapreneurs	Ghana
25	Benjamin Lartey	Global Neighbourhood Healthcare Development Organisation	Ghana
26	Araba Sam Annan	Independent Consultant	Ghana
27	Kwaku Amankwah	Media Broadcaster	Ghana
28	Dan Osman	Ministry of Health	Ghana
29	Atinga Ayamga	Ministry of Local Government and Rural Development	Ghana
30	Bernice Darko	Ministry of Local Government and Rural Development	Ghana
31	Cynthia Ivy Amissah	Ministry of Local Government and Rural Development	Ghana

	<b>Name</b>	<b>Organization</b>	<b>Country</b>
32	Demedeme Naa L.	Ministry of Local Government and Rural Development	Ghana
33	Henrietta Osei-Tutu	Ministry of Local Government and Rural Development	Ghana
34	Isaac Dupey	Ministry of Local Government and Rural Development	Ghana
35	Kweku Quansah	Ministry of Local Government and Rural Development	Ghana
36	Levina Owosu	Ministry of Local Government and Rural Development	Ghana
37	Tony Tseketse	Ministry of Local Government and Rural Development	Ghana
38	Vincent Adjato-Ntem	Ministry of Local Government and Rural Development	Ghana
39	Abraham Otabil	Ministry of Water Resources, Works and Housing	Ghana
40	D.A. Banamini	Ministry of Water Resources, Works and Housing	Ghana
41	Daniel Agyei	Ministry of Water Resources, Works and Housing	Ghana
42	Enoch Ofosu	Ministry of Water Resources, Works and Housing	Ghana
43	Frederick Addae	Ministry of Water Resources, Works and Housing	Ghana
44	Patricia Buah	Ministry of Water Resources, Works and Housing	Ghana
45	S.Y. Osei	Ministry of Water Resources, Works and Housing	Ghana
46	Suzzy Abaidoo	Ministry of Water Resources, Works and Housing	Ghana
47	Kwabena Gyasi Duku	Ministry of Water Resources, Works and Housing	Ghana
48	Ruth Arthur	National Disaster Management Organization	Ghana
49	Ebenezer Aidoo	Precision Dx	Ghana
50	Samuel Agyekum Sarpong	ProNet Accra	Ghana
51	Shawn Dillard	ProWorld	Ghana
52	Mary Kay Jackson	Pure Home Water	Ghana
53	Harold Esseku	Rapha Consult	Ghana
54	Abu Wumbei	Resource Centre Network Ghana	Ghana
55	Ida Coleman	Resource Centre Network Ghana	Ghana
56	Habib Yakubu	Sanipath / Center for Global Safe Water at Emory University	Ghana
57	Smile Ametsi	School of Hygiene, Ho	Ghana
58	Peter Yaw Mensah	School of Hygiene, Korle-Bu (Accra)	Ghana
59	Alfred D. Assibi	School of Hygiene, Tamale	Ghana
60	Patricik Apoya	Skyfox Consult Limited	Ghana
61	Benedict Tuffour	TREND Ghana / WASHTech	Ghana
62	David Duncan	UNICEF	Ghana
63	Emma-Joan Halm	UNICEF	Ghana

	<b>Name</b>	<b>Organization</b>	<b>Country</b>
64	Gabriel Adu-Wusu	UNICEF	Ghana
65	Samuel Amoako-Mensah	UNICEF	Ghana
66	Kassim Yakubu Al-Hassan	WaterAid	Ghana
67	Akosua Kwakye	WHO	Ghana
68	Stephen Ntow	WASHealth Solutions	Ghana
69	Emmanuel Nkrumah	World Bank	Ghana
70	Rose Adisenu-Doe	WASH Consultant	Ghana
71	Christian Yeakula	Liberia Water & Sewer Corporation	Liberia
72	Amos F. Gborie	Ministry of Health	Liberia
73	Fatorma K Bolay	World Health Organization	Liberia
74	Ryan Rowe	Water Institute at UNC	Malawi
75	James Aper	Benue Rural Water Supply Agency	Nigeria
76	Atanda O. John	Federal Ministry of Health	Nigeria
77	R.A. Bako	Federal Ministry of Water Resources	Nigeria
78	Emmanuel Awe	Federal Ministry of Water Resources	Nigeria
79	Bade Olokun	UNICEF	Nigeria
80	Saanndo Anum	UNICEF	Nigeria
81	Juliana Kamanda	Adam Smith International	Sierra Leone
82	Anita Caulkool	Ministry of Health and Sanitation	Sierra Leone
83	Dr. Ansumana Sillah	Ministry of Health and Sanitation	Sierra Leone
84	Lamin Souma	Ministry of Water Resources	Sierra Leone
85	Charlene Youssef	Nestbuilders International	Sierra Leone
86	Prince Nallo	Nestbuilders International	Sierra Leone
87	Kazumi Inden	UNICEF	Sierra Leone
88	Sebora Kamara	World Health Organization	Sierra Leone
89	Maggie Montgomery	World Health Organization	Switzerland
90	Laura MacDonald	Johns Hopkins University	United States
91	Daniele Lantagne	Tufts University	United States
92	Michael Forson	UNICEF	United States

Participant email addresses are available upon request to [hwtsnetwork@unc.edu](mailto:hwtsnetwork@unc.edu).

## Appendix 7. List of presentations

### Presentations - Day 1

1. Maggie Montgomery - International Network on HWTS: Focusing on the needs of the most vulnerable | [Download](#)
2. Daniele Lantagne - Evaluating HWTS: From evidence to action - evidence of use and impact | [Download](#)
3. Michael Forson - Scaling up HWTS: The building blocks | [Download](#)
4. Naa Lenason Demedeme - Current status of HWTS in Ghana | [Download](#)
5. Amos Gborie - Current status of HWTS in Liberia | [Download](#)
6. Anna Haffner - Current status of HWTS in the Gambia | [Download](#)
7. Ansumana Sillah - Current status of HWTS in Sierra Leone | [Download](#)
8. Enoch Ofosu - Emergency response and cholera in Ghana | [Download](#)
9. Emma-Joan Halm - WASHSPASH in Ghana | [Download](#)
10. Ryan Rowe - Integrating safe water and maternal health in Malawi | [Download](#)
11. Mary Kay Jackson - Pure Home Water: Lessons from 4 Mass Distributions of Household-Scale Ceramic Pot Filters | [Download](#)
12. Ajibade Olokun - HWTS implementation in Nigeria | [Download](#)

### Presentations - Day 2

1. Worlanyo Siabi - Water safety framework in Ghana | [Download](#)
2. Maggie Montgomery - Household water treatment performance and regulation | [Download](#)
3. Daniele Lantagne - The HWTS M&E toolkit: Work-to-date and way forward | [Download](#)
4. Samuel Amoako-Mensah - Monitoring household drinking water quality through a country survey | [Download](#)

### Presentations by country teams on draft national action plans - Day 3

- The Gambia | [Download](#)  
Ghana #1 | [Download](#)  
Ghana #2\* | [Download](#)  
Liberia | [Download](#)  
Sierra Leone | [Download](#)

\*There were two Ghana presentations due to the high number of participants from that country.

Note: All proceedings and workshop materials are available at <http://www.waterinstitute.unc.edu/hwts-events>