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HOUSEHOLD WATER TREATMENT AND SAFE STORAGE

MEASUREMENT AND
PRIVATE SECTOR PARTICIPATION



A FAMILY WITH VARIOUS WATER STORAGE AND COLLECTION PRODUCTS



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ABBREVIATIONS AND ACRONYMS

BASIS	Basic Sanitation Information System
BCC	Behavior Change Communication
CBV	Community Based Volunteer
CLTS	Community-Led Total Sanitation
CWSA	Community Water and Sanitation Agency
DA	District Assembly
DCD	Department of Community Development
DCE	District Chief Executive
DICCS	District Inter Coordinating Committee for Sanitation
DMTDF	District Medium-Term Development Framework
DRP	District Resource Person
EHA	Environmental Health Assistant
EHO	Environmental Health Officer
EHSD	Environmental Health and Sanitation Directorate
GoG	Government of Ghana
HWTS	Household Water Treatment and Safe Storage
HWWS	Hand Washing With Soap
IEC	Information and Education Communication
KM	Knowledge Management
M&E	Monitoring and Evaluation
MLGRD	Ministry of Local Government and Rural Development
MSWR	Ministry of Sanitation and Water Resources
MWH	Ministry of Works and Housing
MWRWH	Ministry of Water Resources, Works and Housing
NDPC	National Development Planning Commission
NDWQF	National Drinking Water Quality Framework
NGO	Non-Governmental Organisation
ODF	Open Defecation Free
PSP	Private Sector Participation
REHO	Regional Environmental Health Office
RICCS	Regional Inter Coordinating Committee for Sanitation
SHEP	School Health Education Programme
SWN	Safe Water Network
TOT	Training of Trainers
TREND	Training, Research and Networking for Development
UNICEF	United Nations Children's Fund
WASH	Water Sanitation and Hygiene
WD	Water Directorate
WinS	WASH in Schools



EXECUTIVE SUMMARY

The Government of Ghana (GoG), with support from UNICEF, has developed a national strategy document to guide water, sanitation, and hygiene (WASH) stakeholders on how to mainstream *household water treatment and safe storage* (HWTS) awareness in their routine field activities. This was developed in pursuance of the overall need for improved HWTS promotional frameworks for effective implementation and future scale-up. The GoG has rolled out the implementation of HWTS across regional, district, and community levels in Ghana since 2014.

The GoG and UNICEF, in collaboration with Safe Water Network, carried out an assessment of HWTS promotional activities, strategies and guidelines, skill capability of HWTS promoters, and private-sector participation in HWTS promotion. Key informant interviews, focus group discussions, observation of HWTS facilitators, products and practice, and socio-economic survey administration to households aided this assessment.

This report presents an output of an assessment of the measurement of HWTS, as well as opportunities for private-sector participation.

The following are some key achievements observed:

- HWTS focal persons at the national level institutions including the Environmental Health and Sanitation Directorate (EHSD), Water Directorate (WD) and Community Water and Sanitation Agency (CWSA) have good knowledge about the on-going national HWTS campaign, which is an indication that the potential for mainstreaming HWTS into other sector activities is high.
- Roles and responsibilities for stakeholders involved in the HWTS promotion from the national to the community levels have, to a large extent, been defined by the national HWTS strategy document. This can help avoid duplication of efforts and related wastage of resources by stakeholders.
- The publication of a national HWTS strategy and its related private sector participation framework as well as the scale-up model provides a standard framework for nationwide HWTS promotion.
- Workshops and training programs required for effective implementation of roles and responsibilities have been delivered to all stakeholders.
- In all the communities visited by the study team, community members generally demonstrated good knowledge, skills, and/or changes in HWTS behavior due to their participation in HWTS sensitization processes and awareness creation sessions.
- Monitoring to ensure that HWTS plans are followed at the district and community levels can be said to be fully integrated into the program activities.

A key lesson learned from this assignment is that availability of appropriate HWTS products is a key determinant of effective safe water practices. Thus promotion of products which are unavailable is not an effective way to ensure HWTS practice.

Some key challenges facing the promotion and practice of HWTS include the following:

- Lack of a functioning coordination platform to bring together and coordinate the efforts of the various institutions envisaged by the HWTS strategy document to play key roles for the achievement of effective implementation of HWTS.
- Limited government ownership of the national HWTS promotion leading to it being handled as a donor project, without whose funds nothing appears to happen.
- The reliance of field facilitators on generic action plan with same predetermined HWTS promotion activities for all communities might not lead to addressing unique needs of communities as no two communities are the same in terms of baseline situations and needs.
- District Assembly (DA) level non-skill related challenges such as inadequate office space, transport, motivation for staff working in the communities, untimely release of project funds etc. constitute barriers to the full realization of the capabilities of staff for timely execution of HWTS project activities.
- The delayed installation of HWTS related questions on the Open Data Kit (ODK) did not augur well for HWTS promotion measurement, as some facilitators were not encouraged to embark performance tracking without their phones.
- The unwillingness or inability of the private sector to engage in HWTS product business or expand their businesses to include HWTS products without external support is a hindrance to private sector participation (PSP).

The following recommendations are made, the implementation of which will address the identified challenges above.

- The defunct national HWTS technical committee, which coordinated the development of the national HWTS strategies, needs to be reactivated to ensure the coordination of efforts of all stakeholders for effective implementation of HWTS.
- It would be important that the GoG, especially the DAs, show ownership of the HWTS by making budgetary allocations to cover costs that occur outside the planned UNICEF-sponsored activities, such as extra follow up visits to needed communities.
- Since no two communities are the same, there is the need for the development of appropriate action plans that match each community's needs. The generic action plans provided by UNICEF should be deemed as foundations for developing specific community action plans. In connection

with this, community baseline reports should be made available to the field facilitators and the communities.

- There is the need to revise the national strategy documents, and in doing so implementation has to be considered at every step so that a realistic national action plan for HWTS could be developed.
- Using electronic means to collect data is laudable but the fact that mobile phones go off while under use calls for the need for back up batteries for the phones and back-up templates in hard copies.
- Considering the comparatively limited focus on HWTS, it might be useful that additional specific impetus in terms of vigorous HWTS promotional activities, similar to that of the national handwashing with soap (HWWS) campaign, is required to generate public demand and position HWTS products, through the private sector, well in the market place.



**RAIN
HARVESTING
AS SOURCE
OF WATER
FOR
DRINKING
AND OTHER
USES.**

1. | INTRODUCTION

The Government of Ghana (GoG), through the Environmental Health and Sanitation Directorate (EHSD)—previously in the Ministry of Local Government and Rural Development (MLGRD) and now in the Ministry of Sanitation and Water Resources (MSWR)—and with support from UNICEF, has rolled out the implementation of *household water treatment and safe storage* (HWTS) across regional, district, and community levels in Ghana since 2014. The GoG and UNICEF, in collaboration with Safe Water Network, have carried out an assessment of HWTS promotional activities, strategies and guidelines, skill capability of HWTS promoters, and private-sector participation in HWTS promotion.

1.1 | Context to this Assignment

The Ministry of Local Government and Rural Development (MLGRD), with technical and financial support from UNICEF, conducted a national assessment of HWTS behaviour and practice in Ghana in 2010¹. The assessment found that only about ten percent of the population in Ghana practiced HWTS. This implied that more than twenty-two million people in Ghana could have been drinking re-contaminated water at the point of use even though the water was safe at the source. The assessment observed that most of the affected population are those either underserved by the main water supply or off the main water supply grids. It is important to understand how water service providers can ensure safe water access for these segments of the population, and how water can be safely treated, transported, stored even when safe water supply is available in the event of re-contamination.

In connection with this, a national strategy document to guide water, sanitation, and hygiene (WASH) stakeholders on how to mainstream HWTS awareness in their routine field activities was developed and published in 2014. It was developed jointly by MLGRD in partnership with the Ministry of Water Resources, Works and Housing (MWRWH) with support from UNICEF, after various stakeholder consultations in 2013. The National Strategy for Household Water Treatment and Safe Storage in Ghana (2014) and its related Private Sector Participation Framework, as well as the Scale-up Model, built on existing national policies including the Environmental Sanitation Policy, the National Water Policy and the National Health Policy.

The main themes of the national HWTS strategy as captured in the presentation National HWTS Strategy - Status of Implementation at a HWTS Stakeholders Meeting held in Accra on March 2-3, 2016 are:

- **Behaviour first:** Adoption of the behaviour is central to sustainable adoption of HWTS practice.
- **Focus:** Promotion of activities in households, as well as, schools and health institutions.

- **A regulatory framework for HWTS:** Establishment and enforcement of product safety and performance standards, certification and product labeling system.
- **Institutional capacity building:** Establishment of a leadership body, training on HWTS technology promotion, selection and use.
- **Improved coordination:** Development of a coordinating committee and integration with other WASH sector initiatives.
- **Local manufacturing of HWTS technology:** Development of simple, acceptable, and affordable HWTS technology for low-income and remote population.
- **Increase understanding of the need for HWTS:** Conduct a long-term campaign, increase the profile of HWTS, and establish a website for knowledge management (KM)
- **Information, education, and communication (IEC):** Use of quality, culturally appropriate IEC materials integrated with other behavior change communication (BCC) efforts, such as hand washing with soap (HWS) and community-led total sanitation (CLTS) to build awareness and demand for HWTS.
- **HWTS in emergencies:** Improve the use of HWTS in emergencies by comparing options based on performance, cost, ease of delivery and acceptability.
- **Research:** Undertake relevant, practical, and rigorous research to improve targeting, performance, delivery and adoption of HWTS.
- **Financial support for the implementation of HWTS:** Secure financial support through budgeting and planning for government with support from development partners (DPs) and private sector engagement.

This assessment was carried out in the Biakoye and North Dayi districts in the Volta region and Asikuma-Odoben-Brakwa (AOB) and Gomoa East districts in the Central region. Key processes applied included engagement with relevant stakeholders at the national, regional and district level, community level data gathering, analysis and reporting.

¹ Kyomuhendo, M, (2010): Assessment of HWTS in Ghana

1.2 | Objectives of the Assignment

The overall objective of the assignment is to assess and determine existing gaps in: the HWTS strategy document; the national HWTS promotion and promotion measurement activities; the skill capability of HWTS promoters; and private sector participation to inform the review of the National HWTS strategy and retraining of HWTS promoters and to stimulate Private Sector Participation (PSP) in the HWTS campaign.

1.3 | Output of the Assignment

The main output of the assignment is to provide recommendations, in the form of report, for possible review of the National HWTS strategy, retraining of HWTS promoters, and stimulation of private sector participation in the national HWTS promotion.

1.4 | Methodology

1.4.1 Start-Up Activities

The study team reviewed relevant documents for the assignment. Key among the documents was the National Strategy for Household Water Treatment and Safe Storage and the related Private Sector Participation Framework and the Scale-Up Model

1.4.2 Desk Study

The assembled documents (available upon request) were reviewed to obtain as much information as possible to enable best decisions on the scope of required information and strategies for information collection. This review brought to light the roles of the target groups for the assignment. The National Strategy for Household Water Treatment and Safe Storage and the Private Sector Participation Framework were particularly useful in enabling a clear appreciation of the roles and responsibilities of the various stakeholders. Unclear points in the documents were clarified through various discussions with HWTS focal persons at relevant institutions.

1.4.3 Tools Used for Information Gathering

The desk study provided insight into the type of tools required for the data collection. In view of the numerous stakeholders needed to be consulted for the assignment, it was essential that approaches and tools were designed to ensure that the fieldwork was completed in good time with some few days for cleaning up data collection operations. This required working in groups rather than conducting individual interviews in most cases. Based on the above, the team agreed on a combination of the following tools for data collection at the national, regional, district and community levels.

- Focus group discussion guides and structured questionnaire designed to collect information from key individual informants to determine their understanding of HWTS promotional activities and how these activities are measured (guides and questionnaire available upon request), and
- Structured questionnaire with checklists for socio-economic household level interviews to determine household's income levels, willingness and ability to pay, pricing and affordability of HTWS products, among others.

1.4.4 Organizations Engaged for Assignment

The study team engaged the following stakeholders for consultations, observations, surveys and presentations at the various levels:

National Level: Safe Water Network, UNICEF, WD, EHSD, CWSA and TREND

Regional Level: Regional Environmental Health Unit (REHU), Regional CWSA and regional DCD

District Level: HWTS promoters/Focal Persons, District Assembly (DA) staff and private sector HWTS product dealers (producers, importers, distributors - wholesalers and retailers – and potential dealers)

Community Level: HWTS promoters (community based volunteers - CBVs) and household members.

2. | HWTS PRE-PROMOTION AND PROMOTION ACTIVITIES

2.1 | Background to the National HWTS Promotion

To reduce water related diseases and contribute to achieving health for all Ghanaians, the Government of Ghana (GoG) with support from UNICEF has launched a National Household Water Treatment and Safe Storage (HWTS) promotion. The aim is to increase knowledge, awareness and practice of HWTS and ensure good hygiene practices and positive behaviour change at the household level. The GoG, as owner and manager HWTS campaign, with UNICEF playing only a supporting role, has essential role and significant responsibilities in optimizing the promotion of HWTS. To achieve the objectives of the National HWTS promotion, the GoG has developed a national strategy and related promotional scale up and private sector participation (PSP) documents, taking into account existing conditions and other public health priorities in the country. The strategy implementation targets areas where HWTS will be most applicable and successful; the initial focus is on the most WASH-burdened regions, which are also the 5 poorest regions of Ghana, namely: Volta, Central, Upper East, Upper West and Northern regions.

2.2 | Stakeholders in HWTS Promotion

Many stakeholders, cutting across national, regional, district and community levels, have been assigned different roles in the promotion of HWTS. Exhibit 1, page 18 of the scale-up model of the national strategy for HWTS (2014) provides the defined broad roles and responsibilities of all stakeholders in the implementation of the national HWTS strategy.

National level: The Environmental Health and Sanitation Directorate (EHSD), working through its regional departments and district environmental health units is assigned performance management of the overall programme including policy/strategy facilitation, target setting, implementation tracking and progress reporting. The EHSD is responsible for reporting on the implementation progress of the HWTS strategy as part of its quarterly and annual reports. Copies of these reports are submitted through the ministry (MLGRD but now MSWR) to the National Development Planning Commission (NDPC). The EHSD, with technical support from UNICEF, provides capacity building for institutional focal persons and regional level stakeholders such as the Community Water and Sanitation Agency (CWSA) and DCD staff. A national HWTS technical committee was constituted with representatives from the above-named institutions to function as a coordination platform for effective implementation of HWTS.

Regional level: The trained regional level stakeholders (REHO, CWSA and DCD staff) in turn, provide capacity building for district level staff, including district field facilitators to ensure effective implementation at the district and community levels. Planning steps and strategies required for successful HWTS implementation and achievement of widespread coverage and

uptake are presented and discussed at the district level training events. The general issues involved in the discussions include creating demand, supplying products and services, monitoring and improvement, building human capacity and programme financing, options for treating and storing water at the household level.

District and community levels: The district level focal persons zone the district and allocate lots to the field facilitators in the districts for strategy implementation. The field facilitators provide technical support to community based volunteers (CBVs) to carry out HWTS promotional campaigns in the communities. With technical support from the district level facilitators, CBVs develop community level action plans and carry out HWTS promotional campaigns, sensitisation and follow up dialogues.

2.3 | HWTS Pre-Promotion and Promotion Activities

2.3.1 Dissemination of National HWTS Strategies

Pursuant to its role of facilitating HWTS promotion, tracking and reporting on the implementation of the HWTS campaign, the EHSD has disseminated the National HWTS Strategy at sub-national levels through the National Technical Working Group by means of regional level dissemination workshops. Participants from Environmental Health, Ghana Education Service, CWSA, DCD, the Ghana Health Service and UNICEF were represented at these workshops. Disseminating the strategy was particularly important because the newly published HWTS strategy and scale-up model are not explicitly mentioned in any of the existing sector policies.

2.3.2 HWTS Promotion Activities at the Community Level

The HWTS promotion related activities at the community level generally include the following:

- Community entry and current status assessment, involving baseline data collection on prevailing HWWS and HWTS methods and practices as well as identification of CBVs and community water sources, among others.
- Community meetings to (re)sensitize and draw action plans for HWTS.
- Community dialogue meetings with chiefs, elders and dedicated focus group and house-to-house interactions to create awareness on appropriate HWWS and HWTS methods
- Training of community based volunteers (CBVs) to support HWWS and HWTS promotional activities
- Innovative HWWS and HWTS promotional activities, such as video shows, local drama, demonstrations etc.

2.3.3 Activities of Community Based Volunteers

The trained CBVs, with support of the district field facilitators, embark on awareness creation through community level dialogue sessions and dedicated focus group meetings (e.g. men, women, children, other identifiable groups etc.) to make community members aware of how water can be polluted, how polluted water can be treated, and how to keep water clean with the aim of making water safe at the household level and, thus, minimize disease occurrence. During the awareness creation, the CBVs introduce HWTS and make the case for managing water in the home by presenting evidence on the effectiveness of HWTS in preventing diarrheal and other water-related diseases. The awareness and education are needed to also create demand and convince households of the need and benefits of HWTS.

2.3.4 Community Actions after HWTS Awareness

It is important that communities identify actions to take after sensitization, and to achieve this, rapid surveys (baseline data collection) to help communities to develop their own action plans for HWTS and to monitor results for reporting are administered in each community. There is value in ensuring that community action plans for HWTS reflect the experience and lessons from their environment and these rapid surveys help to identify these experiences and lessons.

A mobilized and sensitized community on general hygiene and sanitation practices including HWTS are expected to exhibit knowledge about HWTS and its implications on their general health status as well as to practice HWTS. To practice HWTS calls for the requirement of additional and special containers for treating and storing water; this often constitutes a financial burden for some households.

2.4 | Capability of HWTS Promoters and Training Programmes on HWTS

Development of knowledge and skills of HWTS promoters is part of building the overall sector capacity required for the implementation HWTS campaigns. Equally important are non-skill or training capacity issues such as working space, transport, and other logistics which can either impede or facilitate the full realization of the skill capabilities of the promoters.

Several training programmes have been organised for stakeholders involved in the HWTS promotion at the various levels. The objective of these training programmes is to create a common understanding and knowledge of best practices in HWTS implementation as well as helping stakeholders to identify their roles in supporting the promotion of HWTS.

The training programme include, among others:

- Regional level training of trainers (ToT) for regional environmental health staff and district resource persons (DRPs).
 - These trainees, in turn, train district level officers.
 - The regional level also undertakes monitoring and verification/assessments of district level activities.
- District level ToT for district facilitation teams including district Environmental Health officers and district DCD officers.
 - These trainees then train the community level stakeholders. They identify between five and ten community members as CBVs in all participating communities and train them in hygiene management of water at source, during transportation, and during storage.
 - The district level undertakes promotion, monitoring and verification/assessments of community level activities.
- Community level training of volunteers (community-based volunteers) who undertake HWTS promotional activities in various communities. Specifically, their training focuses on identification of sources of water, protection of water

sources, pollution pathways for water, protection of water during and after collection, treatment of polluted water, different water treatment products, safe transportation of water, appropriate storage of water, selection of the right containers for fetching and drinking.

- Capacity building of extension staff (environmental health officers (EHOs), environmental health assistants (EHAs), Community development officers, School Health Education Programme (SHEP) staff, etc.) who undertake community level promotional activities.

2.5 | Key Observations on HWTS Pre-Promotion and Promotion Activities

Based on the above information on HWST pre-promotional activities emanating from the desk review and stakeholder interviews, the following observations are made.

2.5.1 Key Observations Related to Institutional and HWTS Implementation Planning Issues

- Focal persons at the national level institutions including the EHSD, WD and CWSA have good knowledge about the on-going national HWTS campaign. This indicates that the potential for mainstreaming HWTS into other sector activities is high.

ON THE DOWNSIDE:

- The strategy envisages the involvement of a variety of ministries, agencies, authorities and research institutions within government, as well as the participation of NGOs and the private sector for effective implementation of HWTS. Government has an important role in bringing together and coordinating the efforts of all these stakeholders. Practically, however, there is no functioning coordination platform in place to achieve effective implementation of HWTS. The HWTS Technical Committee which actively coordinated the development of the national strategy is no more functioning.
- Overall government ownership, including district and community level of the HWTS promotion is not conspicuous. Currently, HWTS is being handled as a project belonging to UNICEF and without project funds available from UNICEF, nothing appears to happen. This situation does not augur well for sustainable HWST promotion. The Abura Asebu Kwamankese District GoG-UNICEF WASH Programme monthly report on the Implementation of WASH Interventions (February 2017) states that

“UNICEF has still not transferred funds for HWWS/HWTS implementation, even though implementation is ongoing using CLTS funds.” The GoG is generally, neither making budgetary allocations nor pre-financing HWTS activities. At the community level, some community members feel that clean water is a social essential service and, therefore, expect the government to provide products like Aquatabs™ and clean materials (clothes) for filtration for free as was done by the Danish International Development Agency (DANIDA). They do not understand why the government is giving free immunizations but cannot do same for safe water products.

- Related to the above is the seemingly systemic weak institutional linkage between the lower and higher levels of organizations. For example, a loose relationship between the national level EHSD regional and district level structures. Implementation progress reports from the sub-national government institutions for instance go to UNICEF as financier of the HWTS campaign rather than to the EHSD at the national level. As mentioned already, the national HWTS technical committee which was constituted to function as a coordination platform for effective implementation of HWTS is no more functioning.
- Facilitators have generic action plans with the same suggested activities for all communities. These are prepared based on a predetermined list of activities supplied by UNICEF prior to the facilitators' entry into the communities. It is, however, observed that no two communities are the same in terms of baseline situations and needs. HWTS may require a different focus in different communities. Even though HWTS addresses contamination throughout the water delivery chain i.e. source, distribution, collection, and storage, the issue may either be safe storage/handling, safe storage/handling plus treatment, source protection or safe transport. Unfortunately, community specific baseline reports have not been available as a basis for facilitators' work plans. Facilitators generally do not keep any records aside from their field notebooks, which is not always comprehensive.
- “Household Water Treatment and Safe Storage” word search in the Volta regional EHSD 2016 annual report and Sector annual action plan for 2017 did not yield any results. HWTS appears mainly in plans and reports on GoG-UNICEF WASH Programmes. This seems to suggest that, the national HWTS promotion does not have a firm footing to stand on and should the current GoG-UNICEF WASH programme,

which has no exist strategy ends abruptly, HWTS will end with it.

- Even though the scale up strategy document has a section on work plan, it does not appear that the intended activities reflect in the plans of some national level institutions such as the Water Directorate and the CWSA. The HWTS focal persons do not have action plans to see how the HWTS strategies are working in the field.
- Different understanding of a couple of issues among stakeholders was observed during the national level stakeholder interviews. Terminologies such as HWTS focal person, HWTS promoters, field facilitators, volunteers, observers appear to be used differently for similar situations. This sometimes creates confusion and misunderstanding in conversations on HWTS.
- It is observed that the current HWTS campaign, which is practically donor driven, has no exist strategy and this makes the future uncertain as to what could happen to the promotion should the support end abruptly.

2.5.2 Recommendations to Improve HWTS Institutional and HWTS Implementation Planning Issues

- The defunct national HWTS technical committee needs to be reactivated to ensure the coordination of efforts of all stakeholders for effective implementation of HWTS.
- Since no two communities are the same, there is the need for the development of appropriate action plans that match each community's needs. The generic action plans provided by UNICEF should be deemed as suggested activities, which should be adapted to match each community's needs as identified by the baseline survey results.
- To avoid the confusion and misunderstanding in conversations on HWTS associated with lack of clarity of and misinterpretation of some HWTS related terminologies, it would be important that a glossary of relevant HWTS terminologies is developed and disseminated to all stakeholders for ease of reference.
- Implementation of HWTS promotion plans, like other WASH plans, requires consistent and long-term sustainable funding to ensure that programme activities are executed without disruption. Apart from funds from UNICEF, it would be important that the GoG, especially the DAs, show ownership by making budgetary allocations to cover costs

that occur outside the planned project budgeted activities such as extra follow up visits to needed communities.

2.5.3 Key Observations Related to the HWTS Strategy Document

- Role and responsibilities for stakeholders involved in the HWTS promotion from the national to the community levels have, to a large extent, been defined by the national HWTS strategy document. This can help avoid duplication of efforts and related wastage of resources by stakeholders.
- The publication of a national HWST strategy and its related private sector participation as well as the scale-up model provides a standard framework for nationwide HWTS promotion.

ON THE DOWNSIDE:

- The dissemination of the HWTS strategy and related guidelines to stakeholders mainly at workshops and at training programmes might not be enough to ensure improvement of stakeholders' knowledge, familiarity and implementation with such documents. For instance, it was observed that some institutional focal persons' knowledge and familiarity of the national HWTS strategy documents is not complete. Focal persons know about the main strategy document and to a limited extent the related scale up document but not so with the PSP framework, even at the national level. At the district levels, apart from some DEHOs who have copies of the national HWTS strategies, all other officers have not even ever seen the strategy documents.
- Even though the HWTS Strategy and the private sector participation framework as well as the scale-up model build on existing national policies (National environmental sanitation, National water and National health policies, HWTS is not been explicitly mentioned in any of these existing sector policy documents. This is also the case with the district medium term development plans (DMTDP). This might be a contributory factor to the current side-stepped of HWTS in sector programming.
- The strategy documents, like the national level stakeholders, mentioned various HWTS products such as Aquatabs™, ceramic filters, kettle jars with filters, chlorine, etc. and indicated that these are available in shops. In this regards, various HWTS training have included as a topic 'Different Water Treatment Products'. In the field however, apart from alum (and camphor) the team did not come across a single dealer of these products, be it manufacturer, wholesaler

or retailer. The fact is, promotion of products which are unavailable is not an effective way to ensure HWTS practice. The effective demand in some places for HWTS products without supply availability has not resulted in improved HWTS practice.

- The following statements are picked from the strategy documents to show their non-implementation of the intended actions so far.
 - Government will make the necessary financial commitments towards implementing relevant sections of the aforementioned policies that relates to HWTS: No evidence of specific financial commitments by government.
 - The Ghana Statistical Service shall conduct periodic surveys on HWTS knowledge, practices and attitudes: No budgetary allocations have been made for this and the Ghana Statistical Service (GSS) has not been engaged on this yet. It is not clear who will instruct the GSS to initiate action on this.
 - The private sector is expected to adequately assess and determine the market size for the various HWTS products and services and develop effective marketing strategies to promote their adoption and usage: Private sector is not engaged and there are no effective initiatives in place to attract the private sector.
 - The private sector is expected to invest in research, development and deployment of effective and appropriate HWTS solutions that create opportunities for reducing costs and ensuring sustainability of HWTS technologies. As much as possible, government will support investments in relevant research that leverage partnerships with appropriate public sector institutions and academia: Very little government support has been observed, and there is no evidence of private sector investment in research.
 - The private sector is expected to develop and implement innovative financing products, including micro-credit schemes, to support the uptake and use of HWTS products and services: It might be challenging for the private sector to develop and implement innovative financing products including micro-credit schemes at this stage without any stimulus from the public sector. It is not clear who will trigger the private sector to take such initiative).



**THE
TRANSPORTATION
OF WATER IN A
CONTAINER.**

2.5.4 Recommendations to improve the HWTS Strategy Document

- There is the need to revise the national strategy documents, and in doing so implementation has to be considered at every step so that a realistic national action plan for HWTS could be developed. Involvement of stakeholders, especially the private sector, in the process should go beyond mere consultations.
- To improve on stakeholders' knowledge and familiarity with relevant documents and templates for HWTS, it would be important that draft versions are disseminated to all stakeholders for written inputs rather than presentation of such documents mainly at workshops and at training sessions.
- Considering the comparatively limited focus on HWTS, it might be useful that additional specific impetus in terms of promotional activities similar to the national HWWS campaign, which started with intensive television and radio programmes. Intensive advertisement in different media especially radio which reaches all communities is required to generate public demand and position HWTS products, through the private sector, well in the market place.
- There is the need to effectively integrate HWTS in the national water and sanitation policies and at the district level, in the district medium term development plans (DMTDPs) in order to facilitate the prioritization of HWTS in the WASH sector.

2.5.5 Key Observations Related to Capability of HWTS Promoters and Training Programmes on HWTS

On the basis of the analysis of the general mandate of HWTS promoters, a couple of issues were identified:

- Workshops and training programmes required for effective implementation of roles and responsibilities have been delivered to all stakeholders (HWTS focal persons, promoters and facilitators etc.), most of whom are professionally trained health and community development officers and have sufficient capacities and skills to implement HWTS efficiently.

ON THE DOWNSIDE:

- It was observed that individual capacity needs assessment, needed to identify specific individual capacity gaps and design appropriate solutions to addressing such gaps has not been done in any of the districts.
- Some of the field facilitators who are implementing the HWTS in the districts and communities are new and lack first-hand information and understanding of some of the HWTS processes and concepts needed to build their confidence in the field.
- The various tools and guidelines being used for the planning and implementation of HWTS were all not developed at one time. They were developed as and when the need arose to address emerging challenges. They are sometimes understood differently by field officers. In one district, four facilitators explained “designated vessel(s)” differently as follows: (these were responses to a question as to whether they observed or not that there was a designated vessel(s) for collecting water from the general storage).
 - Designated vessel is the main container*
 - Designated vessel is the barrel or poly tank*
 - Designated vessel is anything used to fetch water from main storage*
 - Designated vessel is a larger cup with a long handle from which water is served into individual smaller cups for drinking*
- Different lessons are learned during the implementation of the HWTS by different implementers at different locations. Even though platforms for sharing progress reports among stakeholders exist, they do not appear to mainstream the sharing of lessons learned irrespective of their potential usefulness for replication in going forward.

- Other issues observed at the DA level include non-training/skill issues such as inadequate office space, transport, motivation for staff working in the communities, non-timely release of funds for timely execution of project activities, inadequate preparations ahead of implementation kick-off, and other field logistics. These constitute barriers to the full realization of the skills capabilities of staff. Thus, the officials faced with these challenges are unable to implement HWTS not necessarily due to lack of or limited skill capacity. There were some trained community volunteers who were still idle as money for follow up was not ready during and after their training.

Recommendations to Improve Capability of HWTS Promoters and Training Programmes

- Even though new facilitators have the opportunity to learn in the field as they roll out the implementation of HWTS, acquisition of first-hand information and understanding of the processes and concepts related to HWTS would be helpful in building their confidence in the field.
- Whenever new tools and strategies, such as those for integrating CLTS/HWWS/HWTS are introduced, it would be important to discuss them with both old and new facilitators together to deepen their appreciation and understanding of when and how to apply them.
- It would be helpful to create a special purpose sharing of lessons learned platforms to mainstream the practice in the HWTS promotion campaign as such practice has high potential for replication in going forward.
- To address the non-training capacity issues (office space, transport, and other logistics), there is the need to ensure DA level management and ownership for the HWTS campaign. It would be important that a tailor-made orientation is designed and delivered to key DA staff, especially the Finance officers to ensure for instance, timely release of funds. Such orientation should include ways of strengthening the will-power of the officers to implement their designated roles considering the fact that enormous professional capacity and skills to implement HWTS already exist.
- Both individual skill capacity and DA level non-training skills need to be assessed to identify specific needs for which appropriate tailor-made solutions should be designed to address.

3. | HWTS AND HWTS PROMOTION MEASUREMENT AND REPORTING

3.1 | Introduction

HWTS promotion measurement includes updates on implementation from the districts in terms of work done to date, results, lessons learned, challenges etc. To be able to assess the extent to which households know about and practice HWTS, many templates to support the planning, implementation, implementation monitoring and reporting processes have been provided by UNICEF and are presented to key stakeholders at training sessions. Programme implementers using such tools visit and revisit communities to evaluate community acceptance and practice of HWTS promotional messages, to receive feedback and to re-educate as needed. All these are done to evaluate the overall promotion process to ensure the effectiveness of the processes that have been carried out, including community dialogues, training and implementation of related work plans etc. It is important to note that evaluating the promotions occurs through evaluating the outcomes of the promotion.

3.2 | Measurement of HWTS Practice, Knowledge and Awareness

To measure HWTS practice (treatment and storage) and knowledge and awareness, field facilitators, in particular, and other stakeholders undertake field monitoring, using project developed measurement templates.

Frequent joint district level and community level monitoring are carried out by Regional Inter-Coordinating Committee for Sanitation (RICCS) and District Inter Coordinating Committee for Sanitation (DICCS) members respectively. The RICCS, for instance, visit every district at least once a month during which they interact with the DICCS and visit a number of communities from each district.

DICCS and other district level stakeholders, on the other hand, visit every community at least once a month. HWTS facilitators visit their assigned communities weekly, using appropriate templates and guides to assess and capture information for reporting. The facilitators submit information to district monitoring and evaluation (M&E) officers and/or District Resource Persons (DRPs), often through telephone calls, making reference to their field notebooks. District M&E officers and/or DRPs consolidate the field information onto weekly track sheets and submit to UNICEF.

To assess and determine the existing gaps in the measurement of HWTS promotion activities, the assignment focused on the district and community level activities with regard to current practice of HWTS promotional activities. The DAs, through their Environmental Health and Sanitation Units are responsible for the overall district level HWTS promotion planning and performance management, including zoning of the districts and allocation of lots for implementation, target setting and implementation tracking and progress reporting.

District level plans relevant to HWTS include District medium term development plans (DMTDPs), Environmental Health and Sanitation Unit annual and quarterly action plans, work plans for community level activities towards open defecation free (ODF) attainment (out of which HWWS/HWTS promotional plans and measurement activities are elaborated).

3.3 | Means of HWTS Measurement

Information for the measurement of HWTS are collected and/or reported by field facilitators through:

- Facilitator's field notebooks;
- Soft templates, dubbed ODK, which is a mobile phone installed software used to collect data on UNICEF-GoG sanitation interventions; and
- Weekly and activity track sheets.

The following specific templates used in the measurement and reporting of HWTS were identified at the district level during the study team's field work.

- Baseline survey template - designed to establish initial conditions of communities against which endline condition is compared;
- Endline survey template - designed to establish end of intervention conditions of communities against which baseline condition is compared;
- Check-List for rapid survey – used for the measurement of results of community level promotion of HWTS at any given time;
- CLTS-HWWS/HWTS Monitoring Checklist for RICCS - used by RICCS to monitor UNICEF supported sanitation and hygiene interventions;
- Sanitation and Hygiene Intervention Consolidated District CLTS Indicator Report – Collated CLTS report at the district level;

- Sanitation and Hygiene Intervention District Monthly Progress Report - Reported monthly out of district's sanitation and hygiene intervention quarterly/annual plan;
- Households practicing HWTS facility and follow up track template – cumulated number of HWTS facility (up to reporting period);
- District Environmental Health Sanitation Unit CLTS Facility Tracking Sheet – tracked household latrine and hand washing facilities at the community level;
- District Environmental Health and Sanitation Unit annual action plan/budget – costed annual work plan for DEHU;
- District Environmental Health and Sanitation annual report – annual progress report on DEHU's annual work plan implementation;
- (Facilitators) Routine monitoring visit report;
- Activity reporting template - Collated district level report encompassing all facilitators' activities undertaken;
- HWTS monthly planning, monitoring and reporting template designed to capture monthly planned activities and implementation status;
- HWTS community activity plan template – designed to guide the development of facilitator's community action plans.

3.4 | Implementation of HWTS Measurement

HWTS measurement is mainly carried out by field facilitators during their routine weekly visits to their assigned communities. UNICEF has supported the design of soft templates and installed these templates on mobile phones which are used to collect relevant data and submitted electronically to UNICEF. This electronic platform, referred to as ODK, has templates for community baseline survey, community endline survey and check-list for the measurement of results of the community level promotion of HWTS. In addition to the use of the ODK, facilitators use their field notebooks and other operational templates to capture field information, through observations, discussions, and questions and answers. The information collected with ODK are sent directly to UNICEF while non-ODK collected data are provided to district level personnel (DEHO, M&E Coordinator and District Resource Persons – DRPs) for collation and onward transfer to UNICEF through the District coordinating directors, often for accounting and requesting for reimbursement of funds.

UNICEF analyses and provides feedback on the ODK raw data received from the districts. The feedback goes to the districts for validation. Districts verify and validate the feedback data by checking with field facilitators through telephone calls and field visit where necessary. After confirming or otherwise, and making relevant corrections, it is sent back to UNICEF as the final version, this time in hard copies in the form of BASIS Data Verification and BASIS Data Acceptance forms with District Chief Executive's (DCE's) endorsement. Final ODK version is sent back to the district, often addressed to the DRP.

3.5 | Key Observations on HWTS and HWTS Promotion Measurement

The following key observations have been made on HWTS measurement:

- In all the communities visited by the study team, households confirmed being part of HWTS sensitization processes and awareness creation sessions. Community members generally demonstrated good knowledge, skills, and or changes in HWTS behaviour. It is evident that some households are practicing aspects of HWTS and some achievements are being realized, with respect to safe storage and handling practices. Households could tell the importance of HWTS and its linkage to reduction in diarrhoeal diseases. They could also name at least one effective HWTS option. Specifically, all communities visited are aware of at least one of the following HWTS options:
 - i) Alum for sedimentation,
 - ii) Clean cloth for filtration,
 - iii) Chlorine for disinfection (limited to communities with Safe Water Network water systems) and
 - iv) Safe storage containers for water storage.
- Follow-up observations in the communities with facilitators and volunteers brought to light that:
 - At the point sources, households use clean containers to fetch water. Some of the containers have lids while many others do not. The implication is that clean containers without lids can easily lead to contamination.
 - People consciously try to avoid putting their hands in the water while fetching,
 - Households have additional containers for storing drinking water fetched from safe sources in secured places inside their bedrooms. In some few cases, however, some containers were not properly cleaned which could lead to contamination of the clean water.

- Almost all the communities mention camphor and alum as the two water treatment products that they are familiar with and use. While alum is used to get turbid water clear, camphor is used for dealing with taste problems even though they have been advised by field facilitators not to do so since it could be harmful.
- Baseline survey was done in all participating communities across the two regions. Follow up monitoring by field facilitators and DICCs has also been going on in all the communities as part of measures to ensuring that households are supported and encouraged to perform HWTS.
- Monitoring to ensure that HWTS plans are followed is fully integrated into the programme activities at all levels.

ON THE DOWNSIDE:

- Generally, there was little evidence of treatment. Many factors account for the non-practice of treatment, including, appropriateness, acceptability, availability and affordability. There appears to be a poor perception about some chemical products. Aquatabs™, for instance, is perceived by some community members as a form of contraceptive. Traditionally, women boiled available water to make it drinkable, but this requires time and fuel (which has become scarce and expensive). This coupled with increasing demand of household chores on women has rendered boiling a non-option. There is also unavailability of products and private sector producers and distributors in any place in the communities, even after several months of implementation of HWTS promotion. Combination of 'treatment' and 'safe storage' in HWTS programming might not augur well for a balance attention during promotion.
- Until May 2017, questions on HWTS were not installed on the ODK. Some facilitators in North Dayi district uploaded the HWTS related questions on their phones during the time of this assignment; many others were yet to upload.
- While administering HWTS questionnaire on the ODK in Emmanuel Healing community, the battery of the facilitator's phone went off. The administration of the questionnaire continued from memory without recording responses, even though the facilitators had their field notebooks with them. The issue here is that, over reliance on technology without preparation for alternative back-ups can jeopardize HWTS promotion measurement.

- The ODK has a small set of indicators on HWTS that can be collected without becoming an additional burden, keeping data collection simple and manageable for each visit. The development of the small set of indicators might have occurred as an effort to avoid the collection of too much data, which can be overwhelming and often not of practical use. Due to the above i.e. the effort to avoid collecting too much data, not enough data is being collected on household perceptions. It should be noted, however, that household perceptions can be important to monitor as they are a good indicator of success and can help with creating demand when scaling up. Testimonials from households are often more effective in promoting understanding of the success and impacts of a programme. For example, issues like those presented below have not been captured in any reports and follow ups have not addressed them.

- "I discourage my husband (a pastor) from working as a volunteer because of insults from some community members";
- "community members hate the idea of non-indigenes leading processes and this has put some hesitation and fear in strangers to take up leadership positions";
- "All non-indigene members on the WATSAN Committee have been asked to step aside"

The failure to add these in reports is irrespective of the fact that the ODK has room for "OTHER" issues. Monitoring and follow-ups often check on progress in numbers rather than present concerns of communities and volunteers.

- Baseline survey has been done in all communities; endline survey, however, is yet to be done in most communities. Endline survey started in some communities but had to stop due to directives from UNICEF with regards to financial year closure and its related administrative implications for UNICEF.
- Facilitators have not aggressively promoted chemical treatment products for HWTS due to their unavailability. According to some of them, getting such products for their community level training sessions was extremely difficult.
- It was observed during the survey that field facilitators' follow up visits to communities mostly focus on the construction of latrine and HWWS facilities and challenges emanating from CLTS implementation with little attention on HWTS. This is due to the competing demand to declare communities ODF. As a result, HWTS is lagging behind CLTS and HWWS.

3.6 | What Can be Done to Improve HWTS Promotion and Measurement?

- Using electronic means to collect data is laudable but the fact that mobile phones do go off while under use calls for the need for the facilitators to carry back-up questions in hard copies as well as back up batteries for the phones.
- Even though treatment and safe storage are promoted together, it might be important to separate the two in the planning and programming stage in order to provide a balance attention during promotion and measurement. This is important as treating and poor storage will cause contamination and good storage with no treatment leaves the water contaminated.
- Although the use of indigenous knowledge was not in the scope of this assignment, the potential to capitalize them for promotion can be further explored. Examples are the use

of leaves in water in transport to prevent spillage. Reasons for disavowing these practices should be explained. On the other hand, positive practices such as separating and storing drinking water from water for other domestic activities should be encouraged and improved upon. HWTS should be factored into DAs MTDPs to be implemented alongside CLTS activities. By so doing, HWTS implementation can be sustained and not be heavily dependent on donor support.

- Although knowledge and practice is measured for HWTS, additional data such as household perception can be recorded to improve upon promotion and measurements
- Implementers can liaise with private suppliers in the districts and visit some communities to identify treatment needs and create the supply channels for respective communities.



**HOUSEHOLD
WATER
FILTRATION
USING A
CLEAN CLOTH.**

4. | PRIVATE SECTOR PARTICIPATION IN HWTS PROMOTION

4.1 | Introduction

The Government of Ghana acknowledges the critical role of the private sector in national development. In this regard, the National Water Policy, National Health Policy and National Environmental Sanitation Policy affirm government's commitment to work in partnership with the private sector. The Private Sector Participation (PSP) framework is anchored around the broad strategies and modalities for engaging with the private sector as defined in these overall national policy documents. The PSP framework is, therefore, focused on private sector actors who seek to formally contribute to HWTS scale-up under the country's WASH programme.

4.2 | Sizing the PSP Opportunity

RAPHA Consult completed socioeconomic survey in the North Dayi and Biakoye Districts of the Volta Region to establish the framework for engaging the private sector as a means of enabling greater uptake of HWTS products.

4.2.1 Market Characteristics

102 households in six (6) communities in the two districts were interviewed to establish basic market characteristics and willingness and ability to pay for HWTS products. In each household, one person was interviewed. The interviewee sometimes sought clarification from other members of the household. The survey established the following:

- A market for HWTS products and services exists since most households do not have HWTS products - Household sizes in the six communities were relatively small, averaging about 4 persons per household. There were more females (58.8%) than males (41.2%) and the majority of residents were aged 50 years and below (65.6%). There are houses with more than one household. There was an average of 7 persons per house.
- Household income was reasonably high with over 70% of household living above the poverty line-23.5% of households earned below GHS 500.00 a month, 55.9% households earned between GHS 500.00 – GHS 1,000.00 and the remaining 20.6% earned above GHS 1,000.00 a month. According to the GLSS 6 Poverty Profile in Ghana, the absolute poverty line in Ghana is US\$1.83 per day. Using the prevailing exchange rate of GHS 4.4 to US\$ 1.00, the poverty line is estimated to be approximately GHS 241.56 per household per month. The implication is an appreciable ability to patronize HWTS products and services.
- Over 70% of households used rain water in the rainy season as their main drinking water source. 52.9% relied on water from safe water stations for drinking in the dry season, an indication that price or cost of service is a key factor in

decisions regarding water access within the market.

Despite minor concerns about quality and taste of water from various sources (about 9.8% of respondents), all respondents had uninterrupted supply and were able to access drinking water within 30 minutes travel time.

- All respondents used water storage products – a total of 85.3% used barrels, 2% used large size plastic water containers, 3.9% used water jerry cans (popularly referred to as “Kufuor” gallons) whilst the remaining 8.8% used other storage products such as veronica buckets and open saucepans. Out of these, a total of 64.7% of respondents had cover their storage products and 35.3% using open containers for water storage. Out of the 64.7% of respondents had products that were appropriately covered, 94.1% indicated that their hands came directly in contact with drinking water while fetching. This could cause re-contamination of treated water.

4.3 | Additional Market Readiness Indicators for Storage Products

Table 1 gives a summary of the survey results on the market readiness for storage products. All respondents have water storage products. Over 50% of respondents spend less than GHS 100 on their water storage products. 87.3% are satisfied with the water storage products they have in use since it serves their needs adequately. However, 85.3% expressed the desire to have other storage products which are deemed more convenient. Respondents indicated they would prefer storage systems which are more secure and can be used in a manner that will ensure their hands do not come in contact with the water when fetching. 46.1% of respondents expressed a preference for a credit system to enable them purchase the preferred storage product. 35.3% are willing to buy the product upfront with cash and 18.7% would like to have the product for free. Only 6.9% of respondents had bought a water storage product in the past one year.

Table 1. Summary of Survey Results on Market Readiness for HWTS

Parameters	Results
Amount Households Spend on Storage Product	GHC1.00 – GHC100.00 (53.9%) GHC100.00 – GHC150.00 (23.5%) Don't know (22.6%)
Product Satisfaction	Yes (87.3%) No (12.7%)
Preference for a Different Storage Product	Yes (85.3%) No (12.7%)
Reason for Product Preference	Convenient access to product on the market (73.5%) Quality (10.8%) Availability of product on the market (2.9%) No Reason (12.8%)
Type of Preferred Storage	Barrel (66.7%) Overhead Tank (17.6%) Others (Veronica Bucket) (2.9%) N/A (12.8%)
Cost of Preferred Storage Product	GHC1.00 – GHC100.00 (69.6%) GHC100.00 – GHC500.00 (10.8%) Others (free, don't know) (19.6%)
Payment Mechanism	Upfront (35%) Credit (46.1%) Free (18.6%)

- Demand for water treatment products was rather disappointing despite the rather high awareness about HWTS products. 98% of respondents had received messaging on HWTS. However, none of the respondents treated water before drinking. 98% of respondents are aware of at least one household water treatment (HWT) product. Unfortunately, only 2.9% had used an HWT product. The product they had used was camphor and alum;
- Out of the 2.9% of the respondents that used HWT products, 50% of the products were purchased from the community and the remaining 50% sourced outside the community; price of the product ranged between GHS1 and GHS5. Between 2 and 5 pieces of the treatment products (alum, camphor) had been purchased in the past one year by the households. Whilst 50% of users were satisfied with the products; the remaining 50% had challenges with availability of the product.

4.3.1 Business Case

Based on the preference and willingness to pay for some specific HWTS products identified from the initial baseline study, a business case was developed based on the following assumptions (see Table 2):

- The average population per community is 4,000 with average household size of 4 people
- 25% of existing customers deemed re-purchasing customers due to wear and tear of products
- 70% households penetration is targeted at the end of the 7-year projected period
- 10% Margins on original cost estimated
- An annual inflation rate of 15% is used
- 5 HWTS products used for the financial model i.e. chlorine, veronica buckets, 180L storage, 20L buckets and long cup/scoop
- Private sector operator will need to have start-up costs (Rent, Insurance, Utilities, marketing)
- Financial model is conservative on the assumption that each household buys 1 of each item (more is beneficial)

Table 2. Assumptions for Business Case Financial Modelling Business Cases PSP | ASSUMPTIONS (GH¢)

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Population	4000	4000	4000	4000	4000	4000	4000
#HHs	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Target Penetration of Households (Per Yr)	100	100	100	100	100	100	100
Existing HHs Re-Purchasing		25	50	75	100	125	150
Total #HH (Cumulative)	100	200	300	400	500	600	700
Cumulative HHs Buying Product	100	125	150	175	200	225	250
Inflation	15%	15%	15%	15%	15%	15%	15%
Margins on Original Costs	10%	10%	10%	10%	10%	10%	10%
Quantities of Cl2 Packs Per HH	1	1	1	1	1	1	1
Quantities of Veronica Buckets Per HH	1	1	1	1	1	1	1
Quantities of 180L Container+Lid Per HH	1	1	1	1	1	1	1
Quantities of 20L Buckets+Lid Per HH	1	1	1	1	1	1	1
Quantities of Long Scoop/Cups	2	2	2	2	2	2	2
Cost of Cl2 Packs (200 Tablets)	70	81	93	106	122	141	162
Cost of Veronica Bucket	25	29	33	38	44	50	58
Cost of 180L Container+Lid	52	60	69	79	91	105	120
Cost of 20L Buckets+Lid	15	17	20	23	26	30	35
Cost of Scoop/Long Cup	2	2	3	3	3	4	5

• **Capital Cost:** The initial capital required to start the HWTS business is estimated at ~Gh¢ 21,000 and it includes rental of shop, purchase of items to be sold for year 1, insurance and some funds for promotions (details provided in Table 3). With retail, it is not required to have a full year's items in stock. Hence with a start-up cost of ~GH¢ 7,300, a quarter of products required can be acquired and sold on a cyclical/modular basis. This amount (GH¢ 7,300) includes a one-year rent of space, and a one year payment of utilities and insurance; and GH¢ 4000 for start-up products.

• **Projections:** The cost of the 5 selected HWTS products have been modeled for a 7-year period with adjustments based on assumptions of inflation per year. The current (2017) market values of the products have been used as the base year (Year 1) values for the financial projections. It is important to note that the Private Entity may choose to add or remove any other HWTS product based on the community preference, and ease of adaptation. To improve margins, and ensure financial viability of the business, each item is sold at a 10% interest (profit). Due to heavy investment/start-up costs, the first year records a deficit of Gh¢ 1,940 (-11% margins) but ensuing years record positive revenues and margins. The financial projections indicate an average +38% margins for the 7-year period. Projected Profit & Loss Statement for 7-year business period covering expenditure and revenue is shown in Table 3.

Table 3. Profit and Loss Statement for HWTS PSP Business Case

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	TOTAL
CAPITAL EXPENSE								
Rent (shop)	1,200		1,380		1,587		913	5,080
Utilities	600	690	794	913	1,049	1,207	694	5,946
Insurance	1,200	1,380	1,587	1,825	2,099	2,414	1,388	11,892
Total	3,000	2,070	3,761	2,738	4,735	3,620	2,994	
EXPENDITURE								
Chlorine	7,000	8,050	9,258	10,646	12,243	14,080	16,191	
Veronica Buckets	2,500	3,594	4,959	6,654	8,745	11,314	14,457	
180L Container + Lid	5,200	5,980	6,877	7,909	9,095	10,459	12,028	
20L Bucket + Lid	1,500	1,725	1,984	2,281	2,624	3,017	3,470	
Scoop/Long Cup	400	460	529	608	700	805	925	
Marketing/Promotion	600	690	794	913	1,049	1,207	1,388	
Total Cost min Capital	17,200	20,499	24,400	29,011	34,455	40,881	48,459	214,904
Total Expenditure	20,200	22,569	28,161	31,748	39,191	44,501	51,453	237,822
REVENUES								
Chlorine	7,700	11,069	15,275	20,494	26,935	34,847	44,526	160,845
Veronica Buckets	2,750	3,953	5,455	7,319	9,620	12,445	15,902	57,445
180L Container + Lid	5,720	8,223	11,347	15,224	20,009	25,886	33,077	119,485
20L Bucket + Lid	1,650	2,372	3,273	4,392	5,772	7,467	9,541	34,467
Scoop/Long Cup	440	633	873	1,171	1,539	1,991	2,544	9,191
Total Revenues	18,260	26,249	36,223	48,600	63,874	82,637	105,591	381,433
Gross Profit	(1,940)	3,680	8,063	16,851	24,683	38,135	54,138	143,611
Margins	-11%	14%	22%	35%	39%	46%	51%	38%

- The financial projections indicate that there isn't a strong financial proposition for HWTS products within that market especially for new private sector entrants. It takes up to 7 years for the venture to generate gross margins that are higher than the prevailing credit interest rates in Ghana, estimated at about 35%. However, where a portion of the initial capital expense (e.g. rent, utilities and insurance) is covered, the financial proposition becomes reasonably attractive.
- In order to stimulate private sector participation, the District Assembly should consider the following approaches:

- Engage with existing private sector entities (both formal and informal) to share financial proposition on HWTS products and secure interest/willingness of some private sector firms to participate
- Secure a partnership with a private sector firm with an existing extensive distribution network in the district that covers communities without safe water access, so they can leverage their existing distribution network to market HWTS products
- Provide seed capital as equity for completion of a pilot phase of marketing HWTS products and track results for further refinement and scaling

4.4 | Key Observations Related to Private Sector Participation

Some key observations on PSP in HWTS are that:

- After several months of implementation, there are no dedicated private sector producers or distributors in any of the districts and communities visited. HWTS products are not available on the market with the exception of alum. This brings to the fore, the questionable nature of the business viability of HWTS products, as the private sector normally moves to areas of business opportunities with no or very little prompting from the public sector.
- The WASH sector experiences the implementation of many interventions as independent sub projects rather than bringing all together in coherent whole. CLTS, HWWS and HWTS are not exception. Often, CLTS and HWWS start earlier than HWTS interventions. Within the sub projects, more attention and resources go into demand creation for products through sensitization than to supply generation. This possibly leads to the low involvement of the private sector in HWTS implementation. It is interesting to note that a hypothetical question of “where can I readily get a water treatment product (excluding alum)?” received answers like, “it will be difficult”, “unless you go to Ho, the regional capital”, “you may try in Swedru, the biggest town in the area”. There are some households in need of HWTS products and are willing to purchase as a result of education and awareness but cannot find them. National level stakeholders spoke about various HWTS products that are available in shops, but in the field the team did not come across a single dealer of such products. If HWTS products are available in the country, they have not penetrated into the district and community levels yet.
- There have so far not been any conscious efforts to engage the private sector in the HWTS promotional activities with regards to their anticipated roles as captured in the PSP framework.

- The assumption that the private sector will embark on manufacturing and distribution of HWTS products as reflected in the PSP framework and discussions with many stakeholders appear to have been made without prior research or trials to ensure these are the right groups. Potential private sector groups identified in the field include chemical shop dealers, plumbing material dealers, provisions shop owners, EHAs (especially those nearing or at retirement), and water point vendors. Most of them will engage in HWTS product business or expand their businesses to include HWTS products only if some stimulus like initial capital and/or start-up supply stock is provided. With minimal capital, people will not want to engage in trial and error. Shops expand on the basis of what additional items customers are asking for. If initial capital can be provided and people demand such products, a business case can be made for PSP in HWTS promotion.
- The implementation of various new interventions in the sector like CLTS and HWWS are undertaken mostly in areas where there are donor supported project interventions. The implementations of WASH programmes are biased towards CLTS and HWWS which generally start earlier than HWTS interventions. This possibly leads to the low involvement of the private sector in HWTS.

4.4.1 What Can be Done to Improve PSP in HWTS Promotion?

- Considering the seemingly non-commercial viability of HWTS, the Ministry of Sanitation and Water Resources should consider providing stimulus for the private sector. This will increase the likelihood of having different HWTS products in the marketplace, thus, providing households with the opportunity to choose the options that best suit them.
- A system supporting products production, distribution, promotion, and marketing is needed.



EXAMPLES OF FETCHING, STORAGE, SCOOPING AND DRINKING CONTAINERS.



STREAM AS A SOURCE OF WATER FOR OTHER PURPOSES AND DRINKING (IN SOME CASES).

5. | KEY LESSONS, CHALLENGES AND RECOMMENDATIONS

5.1 | Key Lessons Learned

The following are some of the key lessons learned from this assignment:

- Availability of appropriate products is a key determinant of effective safe water practices. Thus promotion of products which are unavailable is not an effective way to ensure HWTS practice. The effective demand in some places for HWTS products without with no supply availability has not resulted in improved HWTS practice.
- HWTS may not be an attractive for the private sector comparative to other business opportunities but it has the potential to provide profits. Additionally, it can be part of an organization's social responsibility programme.
- Although there is a national HWTS strategy, HWTS is comparatively not given priority in the WASH sector
- Lack of motivation for volunteers (financial or otherwise) potentially leads to poor commitment and in the long run brings sustainability of the approach in doubt.
- Demand creation requires intervention at multiple levels; from policy to implementation levels with leaders prioritizing and maintaining water treatment in the agenda of all stakeholders. It requires the private sector to identify technologies and resources that can make household water treatment easy to practice, and from field facilitators to consistently promote behaviour change. Thus, a diverse group of stakeholders at all levels is required for effective HWTS implementation.

5.2 | Key Challenges Related to the Promotion and Practice of HWTS

Key challenges identified with the promotion and practices of HWTS include the following:

- Lack of a functioning coordination platform to bring together and coordinate the efforts of the various institutions envisaged by the HWTS strategy document (ministries, agencies, authorities, research institutions, NGOs and the private sector) to play key roles for the achievement of effective implementation of HWTS.
- Limited government ownership (including district and community level) for HWTS promotion leading to it being handled as a "project" belonging to UNICEF. The GoG is neither making budgetary allocations nor pre-financing HWTS activities and without funding from UNICEF, nothing appears to happen.

- There is currently no exit strategy for the current donor driven HWTS campaign. If there is the withdrawal of donor support, HWTS activities at all levels are likely to end.
- Field facilitators rely on generic action plan with predetermined HWTS promotion activities for all communities. This may lead to the specific needs of some communities being overlooked. There may be the need of community specific baselines to adequately addressing the specific needs of each community. This would serve as the basis work plans for facilitators to use in each community.
- A comprehensive action plan and budget to reflect the intended activities indicated in the national HWTS strategy is not available. This makes it difficult for stakeholders to ascertain the efficacy of the HWTS strategies in the field.
- The demand for HWTS products in some communities without equivalent supply and availability of products and private sector producers and distributors after several months of implementation of HWTS promotion has not resulted in improved HWTS practice.
- Challenges at the assembly level, including inadequate office space, transport, motivation for staff working in the communities, non-timely release of funds for timely execution of project activities etc. constitute barriers to the full realization of the capabilities of staff to implement HWTS.
- The delayed installation of HWTS related questions on the ODK did not augur well for HWTS promotion measurement. Some facilitators in North Dayi district uploaded the HWTS related questions on their phones during the time of this assignment; many others were yet to upload.
- The unwillingness or inability of the private sector to engage in HWTS product business or expand their businesses to include HWTS products without external support is a hindrance to PSP.
- The assumption that the private sector will embark on manufacturing and distribution of HWTS products as reflected in the PSP framework appear to have been made without prior research or trials to ensure these are the right groups.

5.3 | Recommendations

National Level Recommendations

- The defunct national HWTS technical committee, which coordinated the development of the national HWTS strategies, needs to be reactivated to ensure the coordination of efforts of all stakeholders for effective implementation of HWTS.
- There is the need to revise the national strategy documents, and in doing so implementation has to be considered at every step so that a realistic national action plan for HWTS could be developed. Involvement of stakeholders, especially the private sector, in the process should go beyond mere consultations.
- Considering the comparatively limited focus on HWTS, it might be useful that additional specific impetus in terms of promotional activities similar to the national HWWS campaign, which started with intensive television and radio programmes, is required to generate public demand and position HWTS products, through the private sector, well in the market place.
- There is the need to effectively integrate HWTS in the national water and sanitation policies, and at the district level, in the district medium term development plans in order to facilitate the prioritization of HWTS in the WASH sector.
- Considering the seemingly non-commercial viability of HWTS, the Ministry of Sanitation and Water Resources should consider providing stimulus for the private sector. This will increase the likelihood of having different HWTS products in the marketplace, thus, providing households with the opportunity to choose the options that best suit them. A system supporting products production, distribution, promotion, and marketing is needed.
- Using electronic means to collect data is laudable but the fact that mobile phones do go off while under use calls for the need for back up batteries for the phones and back-up templates in hard copies.
- Even though treatment and safe storage are promoted together, it might be useful to separate the two at the planning and programming stage in order to provide a balance attention during promotion and measurement.

District and Community Level Recommendations

- Implementation of HWTS promotion, like many other WASH interventions, requires consistent and long-term sustainable funding to ensure that programme activities are executed without disruption. Apart from funds from UNICEF, it would be important that the GoG, especially the DAs, show ownership by making budgetary allocations to cover costs that occur outside the planned UNICEF sponsored activities, such as extra follow up visits to needed communities.
- Since no two communities are the same, there is the need for the development of appropriate action plans that match each community's needs. The generic action plans provided by UNICEF should be deemed as suggested activities, which should be adapted to match each community's needs as identified by the baseline survey results. In connection with this, Community baseline reports should be made available to the field facilitators and the communities.
- To address logistical challenges (office space, transport, etc.), there is the need to ensure DA level management and ownership for the HWTS campaign. It would be important that a tailor-made orientation is designed and delivered to key DA staff, especially the finance officers to ensure for instance, timely release of funds. Such orientation should include ways of strengthening the will-power of the officers to implement their designated roles considering the fact that enormous professional capacity and skills to implement HWTS already exist.

5.4 | Conclusion

The effort of the GoG, with UNICEF's support, to coordinate the implementation of HWTS programmes and activities at scale is therefore a step in the right direction, as its potential to reducing the burden of diseases in users cannot be over emphasized. A number of organisations, cutting across national, regional, district and community levels, have been assigned different roles in the promotion of HWTS. A strategy document to guide the stakeholders on how to mainstream HWTS in their routine activities have been developed and disseminated to stakeholders. Training of HWTS promoters and general capacity building have been provided at all levels to clarify roles and create a common understanding and knowledge of stakeholders in supporting the promotion of HWTS.

It is observed from the field that some achievements have been made such as increased knowledge of HWTS focal persons at the national level institutions about the national HWTS campaign, and demonstration of good knowledge, skills, and or changes in HWTS behavior of some households due to their participation in HWTS sensitization processes and awareness creation sessions.

One key lessons learned from this assignment is that availability of appropriate HWTS products is a key determinant of effective safe water practices. Thus promotion of products which are unavailable is not an effective way to ensure HWTS practice, while some challenge facing the promotion and practice of HWTS include the limited GoG ownership for the national HWTS promotion and the inability of the private sector to engage in HWTS product business without external support

It is recommended among other that, a vigorous HWTS promotional activity, similar to that of the national HWWS campaign, be embarked upon to generate public demand and position HWTS products, through the private sector, well in the market place. It is expected that the implementation of the recommendations provided by this report, the identified challenges would be addressed and that the potential of HWTS for improving access to safe drinking water and thus, reducing the burden of diarrhoeal and other diseases in users would be realised.



SAFE WATER STORAGE AND HANDLING PRACTICES: THE STORAGE OF DRINKING WATER IN SECURED PLACES.



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