



# Sustainability Index of WASH Activities

## Ghana Country Report

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# Sustainability Index of WASH Activities & Partnership Evaluation

## Sustainability Index Country Report for Ghana

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## Acronyms and Abbreviations

3-H	Health, Hunger and Humanity
CHP	community-managed boreholes with handpumps
COM	Community ownership and management
CRS	community-managed reticulated systems
CWSA	Community Water and Sanitation Agency
EHMD	Environmental Health and Management Department
EHSD	Environmental Health and Sanitation Directorate
GDA	Global Development Alliance
GHS	Ghana Health Service
GoG	Government of Ghana
GWSC	Ghana Water and Sewerage Company
HWP	hand washing and hygiene promotion
INL	institutional latrines
JMP	Joint Monitoring Programme of UNICEF / WHO
M/DA	Municipal or District Assembly
M/DWST	Municipal or District Water and Sanitation Team
MLGRD	Ministry of Local Government and Rural Development
MMDA	Metropolitan, Municipal, and District Assemblies
MoE	Ministry of Education
MOH	Ministry of Health
MWRWH	Ministry for Water Resources, Works and Housing
MWRWH	Ministry of Water Resources, Works and Housing
NCWSP	National Community Water and Sanitation Programme
NESSAP	National Environmental Sanitation Strategy and Action Plan
NGOs	non-governmental organisations
RAF	Respcare Aid Foundation
RI	Rotary International
RWST	Regional Water and Sanitation Team
SBHC	School-based Health Coordinator
SESIP	Strategic Environmental Sanitation Investment Plan
SHEP	National School Health Education Programme
USAID	US Agency for International Development
WATSAN	Water and Sanitation Committees
WD	Water Directorate
WSDB	Water and Sanitation Development Boards

## Introduction

The International H<sub>2</sub>O Collaboration (IH<sub>2</sub>OC) (*the Alliance*) is a worldwide alliance between Rotary International/The Rotary Foundation (RI/TRF) and the United States Agency for International Development (USAID). The alliance is dedicated to implementing long-term, sustainable water, sanitation, and hygiene projects in the developing world. Ghana is one of three pilot countries where this alliance was operationalized with the goal of implementing sustainable water, sanitation, and hygiene (WASH) projects. At the international level the Alliance was formalized in March of 2009.

The Alliance in Ghana is led by the Accra East Rotary Club, and their international partner, D-7630 (Delaware and Maryland's Eastern Shore). A special \$500,000 3-H (Health, Hunger and Humanity) Grant was awarded on 30 October 2009. The Rotary partners jointly led a campaign to raise the remaining funds needed from Rotarians worldwide and managed the project. The Project was officially launched in Nyive, one of the beneficiary communities, in the Volta Region on 20 May 2010.

The objective of the Alliance program in Ghana (under 3-H Grant #10-70427) is to meet and sustain crucial water and sanitation needs in Ghana, through:

1. provision of clean drinking water to 70 communities through boreholes with handpumps, and reticulated systems;
2. provision of institutional latrines and Water Closets (WCs) to 44 schools and public locations;
3. Improving or building the capacity of community, district and regional level committees/agencies to manage and operate the water and sanitation facilities in the benefiting communities;
4. Promoting behavior change communication messages in these communities.

The activities under the program are focused in four regions: Volta Region (Ho Municipality), Eastern Region (East Akim district), Central Region (Awutu Senya and Agona East District) and Greater Accra Region (Ga West Municipality).

In total, the Rotary Foundation and Rotarians worldwide contributed about \$1,000,000 (one million dollars) to this program, which according to Rotary International's President Kaylan Banerjee, was at the time the largest investment the Rotary Foundation has made in any single project<sup>1</sup>. The fund was to be used for the implementation of:

- 57 boreholes with hand pumps in rural communities
- Institutional latrines in 18 schools
- WCs in three public places (a lorry park, a Health Clinic and a Market)
- Community-managed reticulated systems in three communities

USAID contributed a similar amount, to be used for:

- The implementation of 20 wells with hand pumps in rural villages
- The implementation of KVIP sanitary facilities in 22 schools
- All training, capacity building and behavioral modification activities

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1

Source: Laurel Fain, 2011, USAID and Rotary Bring Drinking Water to Ghana's Volta Region, Impact Blog, UASID. Available on: <http://blog.usaid.gov/tag/safe-drinking-water/>

Rotary focused its water and sanitation implementation activities in Volta Region and Eastern Region and also led implementation of water infrastructure in Central Region. For this, they partnered with the main government Agency responsible for community water and sanitation in Ghana: the Community Water and Sanitation Agency (CWSA).

USAID was responsible for the implementation of water and sanitation infrastructure in Greater Accra and sanitation infrastructure in Central Region. Furthermore, USAID was responsible for all capacity building and behavioral modification activities in all four regions, including capacity building of communities and Districts to help with the operation and maintenance of the facilities provided to ensure sustainability. In order to execute these components, USAID partnered with Relief International, who were contracted through a competitive bidding process. Relief International worked in turn through a number of local NGOs who execute program activities at field level. The table below gives an overview of these local NGOs involved in the program in the different focus areas.

**Table 1: Partner NGOs involved in the program**

Region and municipalities / district	Local NGO
Central Region, Agona East District	Development Fortress
Central Region, Awutu Senya district	Impact
Eastern Region, East Akim district	CRED
Greater Accra Region, Ga West Municipality	RAF
Volta Region, Ho Municipality	EDSAM

Long-term sustainability of WASH interventions is widely recognized as a complex and persistent challenge facing communities, governments and international development partners alike. A framework was developed responding to Rotary International and USAID's call for an early and strategic evaluation of the sustainability of its investments and for recommendations for future IH<sub>2</sub>OC programming. This framework, called the **Sustainability Index Tool**, focuses on four critical areas (factors) that are known to be of critical importance to the long-term sustainability of WASH interventions. These are **institutional**, **management**, **financial**, and **technical** factors. Sector experience has also demonstrated the importance of accounting for the enabling environment in evaluation processes. The Sustainability Index therefore includes data collected at the 'project intervention' level, whether at the household, community or system level, and as well as information relating to the broader context at the national, regional, or local-district-municipal levels. As such the tool seeks to determine the way in which IH<sub>2</sub>OC interventions are integrated with broader systems for monitoring, support, technical back-stopping, policy and financing that go far beyond individual project activities.

As in the other two countries (the Dominican Republic and the Philippines) the evaluation is the first at scale pilot testing of the Sustainability Index Tool. This document presents the findings both from the field work as well as lessons learnt about the design and application of the methodology.

## WASH Sector Overview

### Sector development and set-up

This chapter gives an overview of the WASH sector in Ghana, with special emphasis on the main intervention areas of the RI/USAID H2O Alliance intervention areas.

#### **Water: community hand pumps and community reticulated systems**

The Ministry of Water Resources, Works and Housing (MWRWH) is responsible for the formulation of policies and strategies for the water sector as well as resource mobilisation, coordination of budgets, monitoring and evaluation and facilitating inter-sectoral and sub-sector coordination. The Water Directorate (WD), which was established in 2004, is responsible for coordinating, monitoring and evaluating all the activities of key sector institutions operating under the auspices of MWRWH. The water sector is guided by the National Water Policy, which was launched by the Water Directorate in 2007.

Until the late 1990s, water and sanitation, both urban and rural, was the responsibility of the Ghana Water and Sewerage company. To ensure sufficient emphasis on rural water supply, an independent government agency with a focus on rural water and sanitation services was then established under the Ministry for Water Resources, Works and Housing (MWRWH): the Community Water and Sanitation Agency (CWSA). It was carved out of the former Ghana Water and Sewerage Company (GWSC), which was renamed the Ghana Water Company Ltd, to focus on urban water supply. Environmental sanitation including sewerage, and solid and liquid waste management became the responsibility of the Ministry of Local Government and Rural Development (MLGRD). The Community Water and Sanitation Agency (CWSA) has its headquarters in Accra, and regional offices in each of the 10 administrative regions, each with a Regional Water and Sanitation Team (RWST) to provide support and technical assistance to the MMDAs.

The National Community Water and Sanitation Programme (NCWSP), which was launched in 1994, aims to rationalise, promote and improve WASH service delivery through accelerated provision of potable water and hygienic sanitation facilities. An underlying principle of the NCWSP is its emphasis on community ownership and management (COM), which entails effective community participation in the planning, implementation and management of the water and sanitation facilities in the belief that, as custodians, communities will ensure the sustainability of these systems. Another important aspect of the NCWSP is to “maximise health benefits by integrating water, sanitation and hygiene education/promotion (including hand washing) interventions” (GoG, 2007).

The governmental decentralization process is on-going. Metropolitan, Municipal, and District Assemblies (MMDAs) exercise legislative and executive functions and are responsible for the overall development of the 170 (at the time of writing of this report) metropolitan areas, municipal areas and districts. Water is not expressly among the functions of the MMDAs, which may be one reason why it falls low on the list of MMDA priorities. However, since it is a key development issue, water does fall within the scope of MMDAs responsibilities. Within every Municipal or District Assembly (M/DA) there is a Municipal or District Water and Sanitation Team (M/DWST) which is a technical unit to support the delivery of water and sanitation services. The CWSA and MLGRD are expected to build the technical and management capacity of the MMDAs to enable them to implement water and sanitation programmes.

Water and Sanitation Committees (WATSAN) are committees set up around one point source, such as a handpump. They are supposed to set water user fees/tariffs (in consultation with the community and with the final approval from the MMDA), maintain accounts, and manage day-to-day operations of the water points. The WATSANs should include a caretaker to undertake day-to-day operations and maintenance of the handpump and collection of tariffs. For maintenance and repairs beyond the capacity of the caretaker, WATSANs can call on the local area mechanic.

For the management of community-managed reticulated systems, Water and Sanitation Development Boards (WSDBs) should be established. WSDBs are elected community-based structures, who manage the reticulated water systems on behalf of the Metropolitan, Municipal or District Assembly (MMDA).

### **Sanitation and school sanitation**

Although Ghana seems to be doing well in achieving the MDG related to water supply (with JMP estimating the 2010 water coverage to be 86%, surpassing the MDG target of 78%), sanitation has been lagging behind. According to the 2012 JMP report, the proportion of people using improved sanitation facilities is only 14%, far below the 2015 target of 54%. Over that the last few years, Community Led Total Sanitation (CLTS) has been pushed as a mechanism for accelerating sanitation coverage.

Sanitation falls under the Environmental Health and Sanitation Directorate (EHSD) of the Ministry for Local Government and Rural Development (MLGRD). It is governed by the Revised Environmental Sanitation Policy (2009) and guided by the 2010 National Environmental Sanitation Strategy and Action Plan (NESSAP). An accompanying Strategic Environmental Sanitation Investment Plan (SESIP) provides further details of funding requirements and the framework for allocating estimated funding-gaps for projected improvements by 2015. Implementation of environmental sanitation activities is the responsibility of Metropolitan, Municipal and District Assemblies (MMDAs).

The CWSA still has a role to play in the area of sanitation as well. According to ACT 564 and NCWSP, it is within the mandate of the CWSA to provide technical support to MMDAs and communities in planning and executing water related sanitation projects towards proper disposal of faecal matter.

School Sanitation and Hygiene Education promotion is implemented under the National School Health Education Programme (SHEP), instituted in 1992 after the Government of Ghana (GoG) had become a signatory to the Convention on the Rights of the Child in 1992. SHEP was established as a joint mandate to the Ministry of Education (MoE) and the Ministry of Health (MoH). The Ministry of Education was given the lead role while the Ministry of Health provided technical support. Ensuring the availability of improved water and sanitation facilities and their proper use is an important aspect of SHEP's mission. Other key elements of the Program include Sexually Transmitted Infections, HIV and AIDS prevention education, general safety, foods & nutrition, drug use and provision of school health services.

The National SHEP Policy was developed in 2009, in order to establish the institutional framework for programme co-ordination, dimensions and approaches for programme delivery and guidelines for planning to achieve sustainable programme financing. To operationalize the objectives of the National SHEP Policy and establish a renewed focus and direction for school health delivery in Ghana, a "*Strategic Framework for Effective School Health Delivery (2011-2015)*" was developed in 2011. It seeks to establish an implementation framework to guide actions. It sets out the short and

medium to long term goals and objectives for programme delivery and provides the financing framework for executing programme activities.

The basic structure for implementing of SHEP consists of a National Office with National SHEP Coordinator, 10 Regional Offices with Regional SHEP Coordinators, District SHEP Coordinators at all districts and School-Based Health Coordinators in each school.

According to the SHEP Policy (2009), a national secretariat has been established for the SHEP Unit headed by a National SHEP Coordinator, with the support of Programme Officers. The National SHEP Coordinator reports to the Director, Finance and Administration through a Deputy Director General to the Director General. There are SHEP Desks headed by Regional SHEP Coordinators in each of the 10 regions. The Regional SHEP Coordinators report directly to their respective Regional Directors of Education. District level SHEP desks are occupied by District SHEP Coordinators, who report directly to the District Directors of Education. Every school should have a teacher designated as School-based Health Coordinator (SBHC), who leads the planning and implementation of SHEP activities. He or she then reports to the head teacher, who in turn reports to the Circuit Supervisor, and involves other members of staff in their work.

#### **Hygiene: Hand-washing and health education**

The Ministry of Health, through the Health Education Unit of its agency, the Ghana Health Service (GHS), has traditionally been at the forefront of health education. The unit designs and produces various visual and audio-visual support materials to compliment health education activities of the Ghana Health Service. The unit has a national office and regional offices across the country. Over the years however, the unit has mainly provided support to campaigns with national character.

In addition, the Environmental Health and Sanitation Department of the Ministry of Local Government and Rural Development provides oversight of all environmental health workers in the country, with 10 Regional Health and Sanitation Units providing direct facilitation and supervision of staff within the MMDAs. At the MMDA level, the Environmental Health and Management Department (EHMD) is responsible for environmental health education and related enforcement functions.

The National Community Water and Sanitation Programme (NCWSP) also emphasizes promotion of hygiene behavior as a basic requirement for all projects. Typically, hygiene promotion is carried out by Environmental Health Assistants (EHAs) with facilitation support offered by Extension Support Staff of the Community Water and Sanitation Agency (CWSA). The aim of hygiene promotion is to ensure safe water collection, storage and use as well as promoting improved household latrines.

Ghana's Public-Private Partnership for Hand-washing with Soap is part of a wider global initiative campaign aimed at addressing the problem of diarrhoeal diseases and acute respiratory infections by promoting the practice of handwashing with soap among mothers and caregivers of children under five years and school children of age 6-15 years. The Truly Clean Hands Campaign launched as part of the PPP-HwS has the ultimate goal of *"a future in Ghana where handwashing with soap at critical times - after contact with faeces and before contact with food - is readily accepted and practiced by all."*

### NGOs and the local private sector

The private sector refers to local and international firms such as contractors, consultants and suppliers. The size of private sector organisations varies from a single individual to small, medium and large firms. Usually the private sector is engaged on a competitive basis with defined contracts to perform functions such as Project management, training of District Assemblies, WATSAN committees and Water and Sanitation Development Boards WSDB/DAs, supervising borehole drilling and the construction, hygiene education, training of latrine artisans etc.

The role that local NGOs play a role in rural water supply, includes several of the roles also played by private sector, including community mobilization, training of district assemblies, WATSAN training etc. Most large NGOs are members of CONIWAS, the National Coalition of NGOs in Water and Sanitation. This is the body that brings all NGOs in the water and sanitation sector together under a single umbrella in order to promote and strengthen their position in the sector.

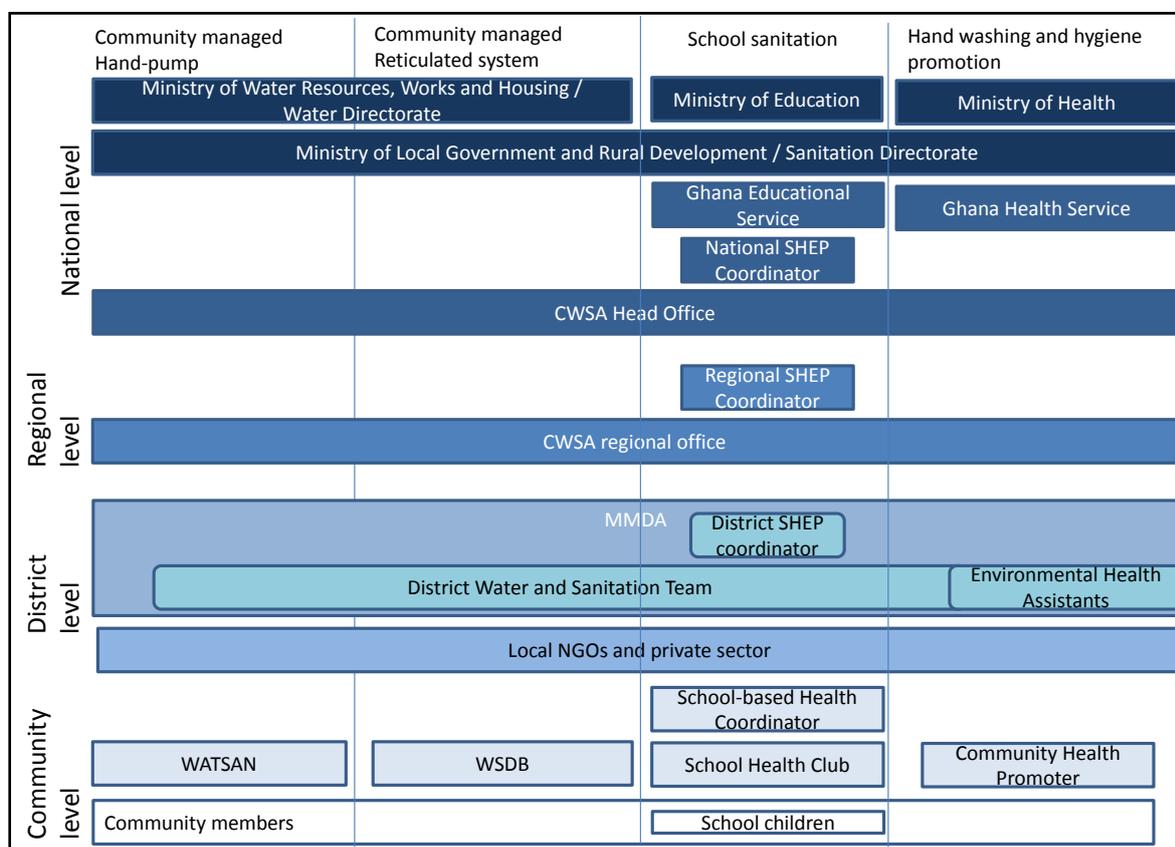


Figure 1: Institutional overview of the rural WASH sector in Ghana

### Sector support and development partner landscaping

Development partners (DPs) active in Ghana’s rural water and sanitation sector include multi-lateral agencies such as the European Union, World Bank, UNICEF, African Development Bank; and bi-lateral agencies such as Danida, CIDA, KfW, GIZ (formerly GTZ), and AFD. Also, national and international NGOs are active in the water sector, including WaterAid, Plan International, World Vision International and Church of Christ.

Development partners are the main source of funding of capital investment in the rural water sector (approximately 99% of the total investment). Government's contribution to capital investment in the rural water and sanitation sector is negligible, although as some of the financing from donors is (normally soft) loan based, this is arguably also a government contribution. Ahead of the 2011 budget preparation, the GoG committed itself through the Sanitation Water for All Compact to provide GHS 350 million (179 million USD) on an annual basis to accelerate the provision of Sanitation and Water for All. However, only GHS 119 million can be traced for investment under MLGRD and about GHS 7.00 million under MWRWH according to GoG budget.

Development partners which have been support SHEP include UNICEF, DFID, WHO, JICA and DANIDA. Also a number of NGOs have actively been involved in supporting SHEP, including Catholic Relief Services (CRS) and Plan Ghana.

## Sustainability Index Methodology and Sampling

### Sustainability Index Tool

The Sustainability Index Tool is a framework to assess the likely sustainability of water, sanitation or hygiene interventions after they have been implemented. The check considers four main factors that are known to have an impact on sustainability: institutional arrangements, management practices, financial conditions, and technical operations and support. Although the tool was developed globally, it is also necessary to customize indicators – and the associated questions - to specific intervention and country contexts. For example, in Ghana the wording of some indicators were modified match the components of the different interventions.

The extent to which these sustainability indicators are realized is assessed through a series of indicator questions aimed at different stakeholder and institutional levels, and in some cases through review of relevant legislation and sector policy. Although these levels may vary depending on the type of intervention and country context, they typically include: households, service providers (i.e. the water committee or school), district level, and national level. The sources consulted at each level of research for Ghana are identified in **Table 1**. In order to score the different indicators, data was collected from different levels. These sources were consulted for each of the communities in which an Alliance intervention was implemented

**Table 1: Stakeholders, Institutions, and Major Legislation Consulted at each Investigation level.**

Type of Intervention	Household/Project level	Service Provider Level	District/Support Authority Level	National Level
Community handpumps (boreholes)	Households	WATSAN	M/DWST; MMDA	CWSA/ MWRWH
Community Reticulated Systems	Households	WSDB	M/DWST; MMDA	CWSA/ MWRWH
Handwashing Promotion	Households	Community Health promoter	MMDA	CWSA / MoH / ESHS-MLGRD
Institutional Latrines	School children and users of institutional latrines	SHEP Committee / School Management committee	District SHEP Committee and coordinator	SHEP

At **national level**, documents related to the intervention areas (community-managed boreholes with handpumps (CHP), community-managed reticulated systems (CRS), institutional latrines (INL) and hand washing and hygiene promotion (HWP)) were collected and reviewed. These included policy and strategy documents, operational guidelines and model by-laws. Furthermore, data was collected through interactions with key informants, including staff from Relief International, the Community Water and Sanitation Agency, the School Health Education Project (SHEP) and WASHCost.

At **district level**, data for the scoring of the indicators was collected through interviews with key stakeholders from local government, especially the District Planning Officer, the members of the District Water and Sanitation Teams (District Engineer, Community Mobiliser and Environmental Health Assistant) and the district SHEP Coordinator.

At **community level**, data was collected from community-based water services providers through group interviews with WATSAN Committees, in case of boreholes with handpumps; and Water and Sanitation Development Boards (WSDBs) in case of reticulated systems. Furthermore, data was collected from community health promoters, where available, and from households, through the administration of surveys. Data to score the indicators related to **school and institutional latrines**, was collected through group interviews with the School Health Clubs (were available) and the head teacher of the selected schools.

**Surveys** were developed for data collection from school, service provider, community health promoter and household level, based on the sustainability framework. Surveys primarily consisted of dichotomous (Yes/No) questions related to the sub-indicator questions in the sustainability assessment framework. In addition, the surveys allowed for the collection of answers to multiple choice questions, quantitative data, GPS data and photos. The surveys were tested in Volta Region in April 2012. This included a field testing of the surveys in Tsyome Lomnava community. After making slight adjustments to the surveys, the surveys were uploaded onto mobile/cellular smart-phones (using the Android OS), which were used to facilitate the data collection process.

In order to **collect data** from school and community level, two data collectors, with good knowledge of the local context and language and with experience in data collection processes, were engaged in each of the four regions. These data collectors were trained over a two-day period by the national team, consisting of two people (the country coordinator and a researcher). On the first day of the training, the data collectors were taken through the different surveys and got the opportunity to familiarize themselves with the android phones. On the second day, the data collectors started the data collection in the field, under close supervision of with support from the national team.

Collected data was submitted instantly using mobile phone technology and sent to an on-line dashboard, accessible by the national level team. This enabled the national level team to monitor data collection in real time and provide instant feedback and guidance, where needed.

The table below presents an overview of the number of surveys conducted in each of the intervention areas.

**Table 2: Surveys Conducted and Locations**

	Number of water service provider surveys (CHP and CRS)	Number of health promoter surveys (HWP)	Number of institutional latrine surveys (INL)	Number of household surveys (CHP, CRS, INL, HWP)
Greater Accra, Ga West Municipality	4	6	2	110
Volta, Ho Municipality	4	8	2	97
Eastern region, East Akim	4	8	3	59
Central region, Awutu Senya	3	4		46
Central region, Agona East	2	2	2	34
<b>Total</b>	<b>17</b>	<b>28</b>	<b>9</b>	<b>346</b>

### Sample size and selection of communities and households for surveying

In Ghana, Alliance interventions include: hand pumps, reticulated systems, institutional latrines<sup>2</sup>, and hygiene promotion. The hygiene promotion interventions are coordinated with the other interventions. The original list of intervention communities included ninety-six communities which received at least one intervention (CHP, CRS, or INL), and eight communities receiving two or more interventions. The communities represent five districts and four regions. It was therefore decided that stratification would be based on region (i.e. Central, Eastern, Great Accra, Volta). The sample frame selection was carried out independently for each intervention (excluding HWP which is included with all other interventions) and within each region communities were randomly selected. Considering the available resources, four communities with water interventions were randomly selected per region out of the communities with completed facilities<sup>3</sup> (which included two out of the three communities with reticulated systems in Volta Region). Two schools with completed school latrines were selected randomly in each region. This resulted in a final list of communities (i.e. sample frame) that is geographically representative. The breakdown of sample frame by intervention type is shown in the table below. Also listed is the statistically determined minimum household sample size for hygiene promotion.

**Table 3: Sample Frame by Intervention Type**

Intervention	CHP	CRS	INL	HWP
Population (N)	32542	10032	44338	86912
Calculated sample size (n)	n/a	n/a	n/a	154
Overall Communities	72	3	45	75
Overall communities with completed facilities	54	3	21	Na
Regions	4	1	4	4
Sample Frame Communities	15	2	8	17
Number of household surveys conducted	281	65	Na	346

<sup>2</sup> Also include are three community bathroom facilities located at two lorry parks and a health post.

<sup>3</sup> An extra handpump community was selected in Awutu Senya district, Central Region, as no school latrines had been implemented in this district.

The actual number of household surveys conducted in each community in the sample frame<sup>4</sup> is based upon established best practice: a minimum of 15 surveys in (smaller) communities with handpumps and 25 in (larger) communities with community-managed reticulated piped systems. Provided that the household surveys conducted in the communities with hand pumps or reticulated systems include the appropriate hygiene promotion questions (HWP surveys) a statistically significant number of HWP surveys will be conducted. A list of all communities where interventions took place is provided in **Annex 1**.

### Geographic spread of surveys

Surveys have been conducted in the five districts (two of which are Municipalities) in the four regions where the Alliance interventions have taken place. These are listed below in Table 3:

**Table 4: Summary table of interventions that have been evaluated**

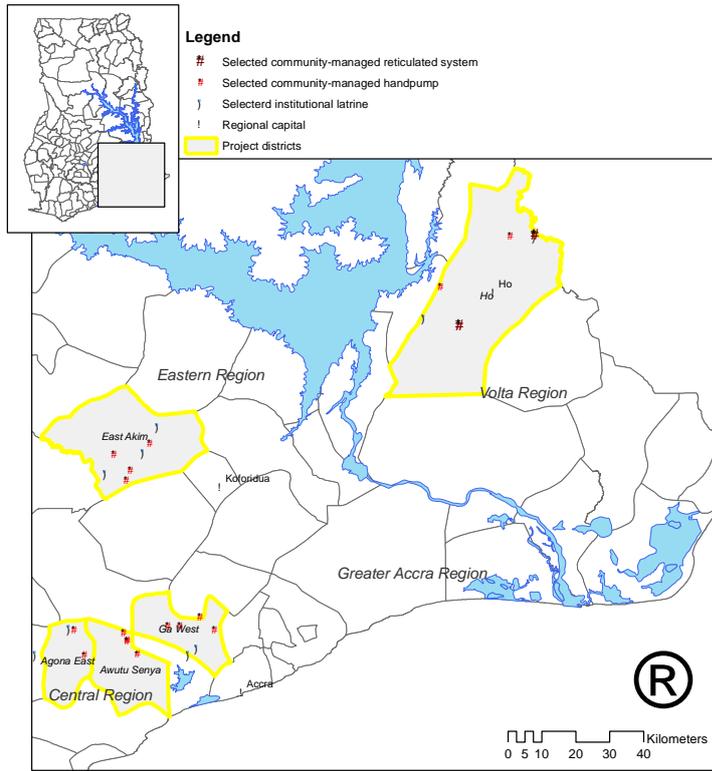
	Communities with Community Managed Handpumps (CHP)	Communities with Community Managed Reticulated Systems (CRS)	Schools and other institutions with institutional latrines (INL)
<b>Greater Accra, Ga West Municipality</b>	<ul style="list-style-type: none"> <li>• Adjeiman Alafia</li> <li>• Abensu</li> <li>• Ahasowudie/Ebenezer</li> <li>• Kutumse</li> </ul>		<ul style="list-style-type: none"> <li>• Nsakina DA Primary</li> <li>• Manheam</li> </ul>
<b>Volta, Ho Municipality</b>	<ul style="list-style-type: none"> <li>• Avenui Camp</li> <li>• Lume Atsyano</li> </ul>	<ul style="list-style-type: none"> <li>• Nyive</li> <li>• Abutia Teti</li> </ul>	<ul style="list-style-type: none"> <li>• Tsito</li> <li>• Nyive</li> </ul>
<b>Eastern region, East Akim</b>	<ul style="list-style-type: none"> <li>• Pano</li> <li>• Dade Mankye</li> <li>• Anyama</li> <li>• Amanfrom</li> </ul>		<ul style="list-style-type: none"> <li>• Asafo Sec School</li> <li>• Akwadum RC Primary</li> <li>• Osiem CHP centre (WC Block at Health Centre)</li> </ul>
<b>Central region, Awutu Senya</b>	<ul style="list-style-type: none"> <li>• Ofadzato</li> <li>• Kwasi Abe</li> <li>• Anomawob</li> </ul>		
<b>Central region, Agona East</b>	<ul style="list-style-type: none"> <li>• Kofi Otabilkwa</li> <li>• Oboyambo</li> </ul>		<ul style="list-style-type: none"> <li>• Nsaba AME Primary/ SHS</li> <li>• Aboano ADA Prim/JHS</li> </ul>

The **Ho Municipality**, covering an area of 2,660 km<sup>2</sup>, is the home to the regional capital of Volta Region, making it the largest urban centre in the region. It does however also include a large number of rural communities. The **Ga West Municipal** in Greater Accra Region occupies a land area of approximately 710 km<sup>2</sup> with about 1,028 communities. Ga West is part of the Greater Accra Metropolitan Area and is to a large extent urban and peri-urban in nature. The **East Akim Municipal** is located in the central portion of Eastern Region with a total land area of approximately 725 km<sup>2</sup>. The Municipal capital, Kibi, is 55km from the regional capital Koforidua, and 105km from the national capital Accra. Although this is a Municipality, the nature of the Municipality is predominately rural. **Agona East district** with its capital Nsaba, and **Awutu Senya district** with capital Awutu Breku are both new districts in the Central Region, created in 2008.

The map below shows these regions, districts and municipalities, as well as the locations of the interventions.

<sup>4</sup> No household surveys are conducted for institutional latrines (INL)

Map 1: Survey locations



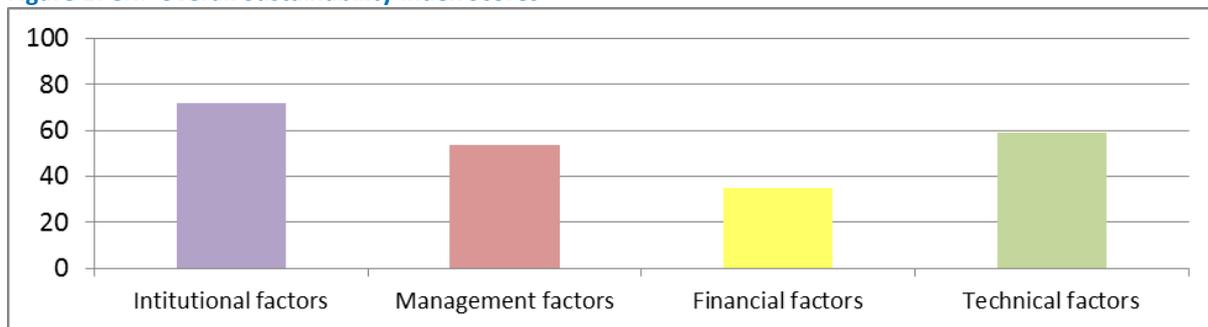
## Results of Data Collection

This chapter presents the results for the Sustainability Index related to each of the four main interventions under the Rotary/ USAUD Alliance H2O Programme in Ghana.

### Community managed handpump (CHP)

A total of 15 communities where community-managed handpumps had been implemented under the Rotary/UASID Alliance have been selected for this study. The figure below gives an overview of the average scores on the different indicator groups under this intervention. It shows a highest average score of 72% on institutional indicators and a lowest average score of 35% on the financial indicators.

Figure 2: CHP overall Sustainability Index Scores



The table below presents the average scores on the indicators related to the four sustainability factors at the three different levels. It shows the scores are generally highest at service provider level (with an overall average score of 61%), followed by national level (with an overall average score of 56%). Scores are lowest at district level (average score of 38%).

Table 5: Average Indicator Scores across levels

Row Labels	Average score on institutional indicators	Average score on management indicator	Average score on financial indicators	Average score on technical indicators	Overall average score per level
National level	67%	54%		50%	56%
District level	71%	43%	13%	50%	38%
Service provider level	79%	65%	49%	65%	61%
<b>Average score per factor</b>	<b>72%</b>	<b>54%</b>	<b>35%</b>	<b>59%</b>	<b>53%</b>

The graph below gives an overview of the average scores on the different indicator groups in each of the selected communities. There are low scores in Kutunse, where no WATSAN had been established yet. It shows the highest variation of scores between the different communities on the financial indicators. Amanfrom in East Akim Municipality and Ahasowundie in Ga West Municipality score best on the financial indicators.

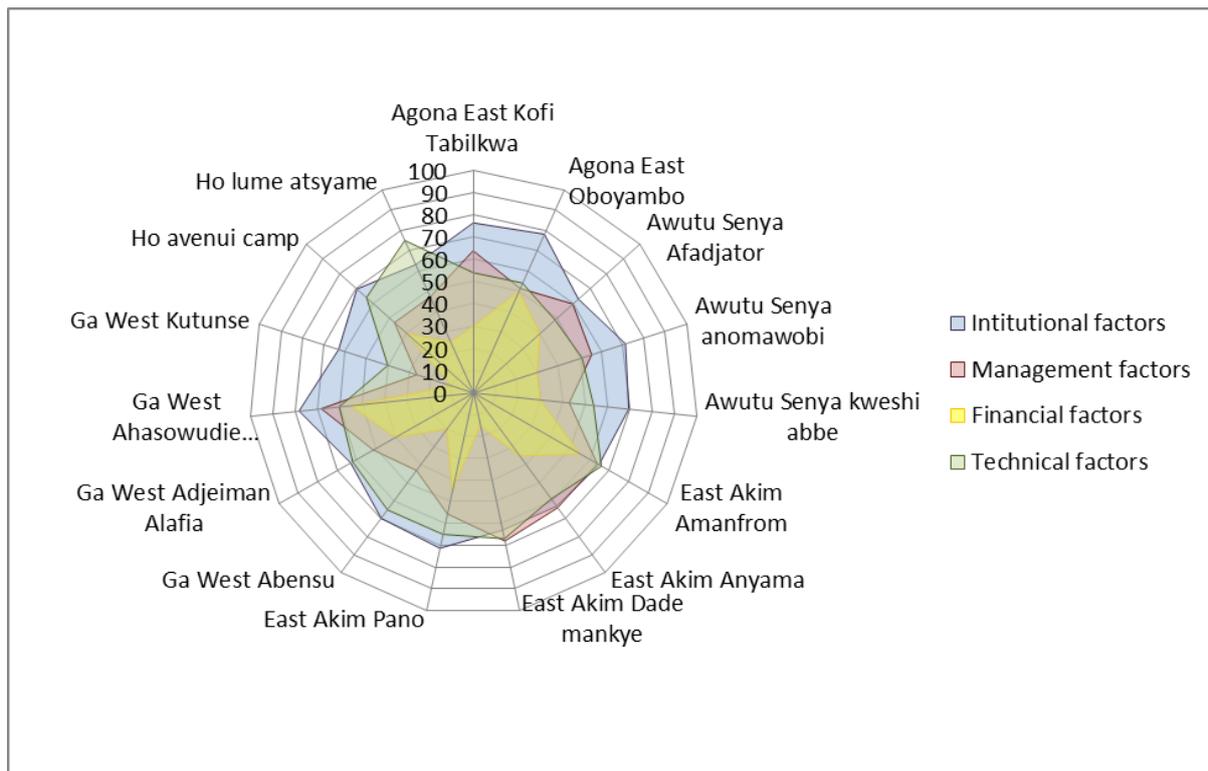


Figure 3: CHP Overall Sustainability Index Disaggregated by Community

Table 6: CHP Institutional Scores

Indicator code	Indicator	District average					Average
		Agona East	Awutu Senya	East Akim Total	Ga West Total	Ho Total	
WT-CHP-I-N1	National policy, norms and guidelines for community managed water supply and enabling legislation is in place	67%					
WT-CHP-I-D1	Roles, responsibilities of district (service authority) and ownership arrangements clearly defined	75%	71%	75%	69%	62.5%	71%
WT-CHP-I-SP1	There is a water committee which has been constituted in line with national norms and standards	100%	87%	75%	65%	80%	79%

The National Water Policy fully recognizes community management. Next to the themes of ‘water resources’ and ‘urban water supply’, ‘community water and sanitation’ is one of the three focus areas of the policy. The CWSA guidelines on small community water supply provide norms and standards on the formation of WATSAN Committees. However, legislation to give WATSANs legal standing is not in place. Therefore, community-managed handpumps score 67 out of 100 on the indicator ‘National policy, norms and guidelines for community managed water supply and enabling legislation is in place’.

In all five districts, roles and responsibilities of the service authority, which are the Municipal Assembly and the Municipal Water and Sanitation Team, were found to be clearly understood by the Water and Sanitation Team members. These roles and responsibilities have been written down in the CWSA guidelines. However, although M/DWST members were aware of the existence of such

guidelines, copies of these were not available at district level. In only 5 out of 15 communities did members of WATSAN committees indicate that they understood the roles and responsibilities of the service authority. Therefore, the average score of the indicator *'Roles, responsibilities of district (service authority) and ownership arrangements clearly defined'* varies from 62.5% in Ho (where the members of the two selected WATSANs indicated that they did not understand the roles and responsibilities of the service authority) to 75% in Agona East and East Akim (where half of the selected communities had WATSANs whose members understood those roles).

Agona East and Awutu Senya score highest on the indicator *'There is a water committee which has been constituted in line with national norms and standards'*, with three out of five WATSANs scoring 100%. In that case, WATSANs have been constituted in line with the CWSA guidelines in terms of number of members, functions filled within the WATSAN and gender. Also, the majority of the households interviewed in these communities indicated that the entire community had been involved in the selection of the WATSAN members. In 10 out of the 15 selected communities, the WATSAN scored 80 out of 100 on this indicator, because the majority of the interviewed households indicated that the selection of the WATSAN committee had not been 100% democratic. Aman from in East Akim did not have a well-gender-balanced WATSAN in addition to it not having been elected democratically and Kutunse in Ga West did not have a WATSAN at all, accounting for the lower scores of these two Municipalities on this indicator.

**Table 7: Management Scores**

Indicator code	Indicator	District average					Average
		Agona East	Awutu Senya	East Akim Total	Ga West Total	Ho Total	
WT-CHP-M-N1	There is an updated national monitoring system or database available and updated	75%					
WT-CHP-M-N2	National support to district/service authority is provided, including refresher training	33%					
WT-CHP-M-D1	There is regular monitoring of water services and community management service provider and follow-up support	62.5%	67%	88%	19%	12.5%	52%
WT-CHP-M-D2	District/service authority drinking water plans for asset management are carried out and updated regularly	0%	0%	50%	50%	50%	33%
WT-CHP-M-SP1	Representative water committee actively manages water point with clearly defined roles and responsibilities	100%	92%	94%	69%	87.5%	87%
WT-CHP-M-SP2	Water committee members actively participate in Committee meetings and decision making process and reporting is transparent	75%	50%	38%	38%	25%	43%

CWSA has developed a monitoring system, which collects data from district level and aggregates it at national level. This system is called the 'District Monitoring and Evaluation System', or DiMES for short. The system captures all water facilities, point sources and piped systems in the rural and small town communities in Ghana. The system is able to capture data on an enormous number of indicators, including functionality of facilities, performance of WATSANs and WSDBs and water quality. However, the system has not yet been implemented in all districts and municipalities and

except for number of facilities and populations which help estimating coverage figures, little to no data has been entered into the system. The districts are asked to update the data on the number and types of facilities on an annual basis and population sizes of communities are projected based on figures from the National Census (2000). The coverage figures from the system are used for influencing national planning and budgeting. Although the monitoring system is far from perfect, the indicator *'There is an updated national monitoring system or database available and updated'* scores 75%, based on the scores of the sub-indicators.

The District and Municipal Water and Sanitation Teams have been trained to support WATSANs manage their handpumps. However, there is no structural refresher training and the Authorities do not monitor the effectiveness of their training. Therefore, community managed handpumps score 33 out of 100 on the indicator *'National support to district/service authority is provided, including refresher training'*.

Eleven of the 15 WATSANs indicated that their financial, technical and administrative performance was monitored by the M/DWST, but less than half (seven) indicated that they were monitored at least every 3 months. Financial auditing was only indicated to take place in some selected communities in the Central Region districts Awutu Senga and Agone East, and the Eastern region Municipality East Akim, which explains the higher average scores on the indicator *'There is regular monitoring of water services and community management service provider and follow-up support'* in these areas.

In the Agona East and Awutu Senya districts, which had only been established in 2008, no District Water and Sanitation Plan was currently available. In the other Municipalities, Municipal Water and Sanitation plans had been developed with active participation of the Water and Sanitation Teams, but had not been updated, leading to overall low scores on the *'District/service authority drinking water plans for asset management are carried out and updated regularly'* indicator.

All WATSANs in the selected communities indicated that roles and responsibilities of the committee were clear to them and most indicated that they executed all of these tasks, with only five out of 15 WATSANs indicating that they only performed some of these tasks. In Kutunse in Ga West Municipality however, there was no WATSAN committee, accounting for the lower score there on the indicator *'Representative water committee actively manages water point with clearly defined roles and responsibilities'*.

The majority of WATSANs were found to meet at least every three months and to keep minutes of these meetings. Kutunse (Ga West) and the WATSANs of Pano (East akim), Abensu (Ga West) and Avenui camp (Ho) were exceptions to this rule. Technical, administrative and financial records are rarely kept and shared with the community. Only in Kofi Tabilkwa (Agona East) and Ahasowudie Ebenezer (Ga West), the majority of interviewed households indicated that records were shared with them on a frequent basis by the WATSAN. This caused the variation in scores between the districts on the indicator *'Water committee members actively participate in Committee meetings and decision making process and reporting is transparent'*.

**Table 8: CHP Financial Scores**

Indicator code	Indicator	District average					Average
		Agona East	Awutu Senya	East Akim	Ga West	Ho	
WT-CHP-F-SP1	Tariff setting complies with national/local regulations, including social tariff	38%	50%	50%	56%	50%	50%
WT-CHP-F-SP2	Tariff collection is regular and sufficient	50%	83%	56%	56%	50%	60%
WT-CHP-F-SP3	The water committee demonstrates effective financial management and accounting	88%	8%	56%	19%	38%	38%
WT-CHP-F-D1	Resources available for district/service authority to fulfill functions	25%					
WT-CHP-F-D2	National/local mechanisms to meet full life cycle costs, beyond community contributions and tariffs	0%					

In five out of the 15 selected communities, tariffs have not been set. In Pano (East Akim), the WATSAN indicated that the tariff had been based on estimated operation and maintenance costs, including longer term capital maintenance and expenditure costs. Provision for the poorest was made in Anyama in East akim and Adjeiman Alafia and Ahasowudie Ebenezer in Ga West, where the poorest were exempted from paying.

In 11 out of the 15 communities, money was collected on a structural basis (pay-as-you-fetch or monthly levies). In nine cases, the collected revenues outweighed the expenditure with at least 20%, indicating savings can be made for longer term capital maintenance expenditure. However, it should be noted that these systems are relatively new and expenditure on maintenance has thus far been low. In Kobi Tabilkwa, money raised through communal labour contributed to the operation and maintenance of the handpump, while in Lume Atsyame, where a pump had been installed at a prayer camp, money was raised during the church services. In both cases, revenues also outweighed expenditure by at least 20%. In nine out of the 15 communities, at least 80% of the interviewed household indicated that they paid the tariff or contribution.

Only nine out of the 15 selected WATSANs had a bank account. Nevertheless, 11 WATSANs keep financial records. These records are however only shared with community members in five communities and only four WATSANs indicated that their accounts were audited by the M/DWST.

All five M/DWSTs were composed of at least three members (an engineer, a community mobiliser and an environmental Health Assistant). However, none of the Teams were sufficiently resourced to do their job effectively.

There are no National/local mechanisms to meet full life cycle costs, beyond community contributions and tariffs. This has been identified as a major gap in the sector by the WASHCost project. The national budget is lumped and not disaggregated in the lines of lifecycle costs. The WASHCost Project has influenced the development of the sector policy document, the Strategic Sector Development Plan (SSDP), to incorporate the concept of lifecycle costs. This document was however still under development at the time of this study. There are no mechanisms in place to fill the financing gap between collected revenues and lifecycle costs, where these occur. Due to the large infrastructural deficit in Ghana, the focus seems to be heavily geared towards capital cost provision to the detriment of the other costs that constitute lifecycle costs. The WASHCost Project

has been impressing upon stakeholders the need to recognise the importance of these other costs and budget for them accordingly in order to enhance sustainability.

**Table 9: CHP Technical Scores**

Indicator code	Indicator	District average					Average
		Agona East	Awutu Senya	East Akim	Ga West	Ho	
WT-CHP-T-N1	National/local norms defines equipment standardization and arrangements for providing spare parts	50%					
WT-CHP-T-D1	The district water staff are able to provide support for maintenance and repairs on request	50%					
WT-CHP-T-SP1	Handpump is functional and providing basic level of service according to national policy	50%	33%	56%	44%	87.5%	52%
WT-CHP-T-SP2	Ability to conduct maintenance and repairs – skilled technician, spare parts availability etc.	20%	40%	65%	65%	60%	53%
WT-CHP-T-SP3	Design and quality of infrastructure: sanitary surroundings	100%	83%	100%	75%	100%	90%

The CWSA prescribes a number of standardized handpumps, which include the Afridev and India Mark II hand pumps, implemented under the Alliance intervention. However, no national norms are defined for arrangements for providing spare parts. Therefore, a score of 50% is given to the indicator '*National/local norms defines equipment standardization and arrangements for providing spare parts*'.

District level staff are able to provide support to maintenance beyond the capacity of the community. Often this support consists of linking the community to a local area mechanic. Because the M/DWSTs are not able to provide direct support, but are able to facilitate support and know the mechanisms and channels for calling in this type of support, the M/DWST scored 50% on the indicator '*The district water staff are able to provide support for maintenance and repairs on request*'.

A basis level of water service is determined by the quantity and quality of water provided and the reliability and the accessibility of the services. According to the CWSA guidelines and the legislative instrument, standpipes should provide at least 20 litres per capita per day of good quality water (in line with quality standards set by the Ghana Standard Board), with no more than 300 people per handpump and a maximum distance of 500 metres between the furthest household and the handpump, functional for at least 95% of the time (so less than 18 days per year of downtime).

Reliability and accessibility (in term of distance) was determined on the perception of the WATSAN committee, while user perceptions regarding quantity and quality were used to calculate on this indicator. Reliability of water supply was not found to be a major issue. An exception was the handpump in Anomawobi (in Awutu Senya), which had not been functioning for 20 days over the last year. This handpump tends to run dry in the dry season. In addition, there is no caretaker to tend to the handpump. These factors may contribute to the unreliability of the handpump. The handpump in Anemawobi was also found to be not within 500 metres of the majority of the

population, the quality was not perceived as acceptable by the majority of the respondents, who were using less than 20 litres per capita per day. The handpumps in Pano and Kutunse were found to be reliable, but were not located within 500 metres of the population. Quality was perceived as acceptable by less than 66% of the interviewed households and less than 66% of interviewed households used at least 25 litres per capita per day. This resulted in a score of 25 for these systems on the indicator *'Handpump is functional and providing basic level of service according to national policy'*. The remaining systems were given scores of 50 to 75. Distance between the pump and the users was a major problem in most communities: in only two cases (Avenui Camp in Ho and Kofi Tabilkwa in Awutu senya), the majority of the population was estimated to be within 500 metres of the facility. Water quality was perceived as acceptable by at least 66% of the interviewed households in 10 out of 15 communities. In seven out of the 10 communities, at least 66% of the interviewed households indicated to use 20 litres per capita per day. Avenue camp was the only community scoring a full 100 on this indicator. This resulted in the average score of 53% on the indicator as presented in the table above.

In Kutunse and Anemawobi, the WATSAN Committee did not have a caretaker. In seven out of 15 communities, WATSAN members knew that areas mechanics were available to assist them in case of maintenance and repairs which were beyond the capacity of the caretaker, within three days. In 10 communities, the WATSANs knew that spare part supplies were available, mostly within three days. This resulted in the scores on the indicator *'Ability to conduct maintenance and repairs – skilled technician, spare parts availability'*, as presented in the table above.

In general, communities scored high on the indicator *'Design and quality of infrastructure: sanitary surroundings'*, with handpumps situated at least 30 metres from the nearest latrine, with clean surroundings, no risk of flooding and dug deep enough to provide water throughout the year.

### Community-managed reticulated systems (CRS)

Two out of the three implemented community-manager reticulated systems in Ho Municipality, Volta Region were selected for this study.

The figures below gives an overview of the average scores on the indicators related to the different sustainability factors. The figures show a similar pattern as the overview graph of the community managed handpumps, with institutional and technical indicators scoring highest. The average scores on the indicators related to the sustainability factors are slightly higher than those of the handpumps, especially the average score on the financial indicators.

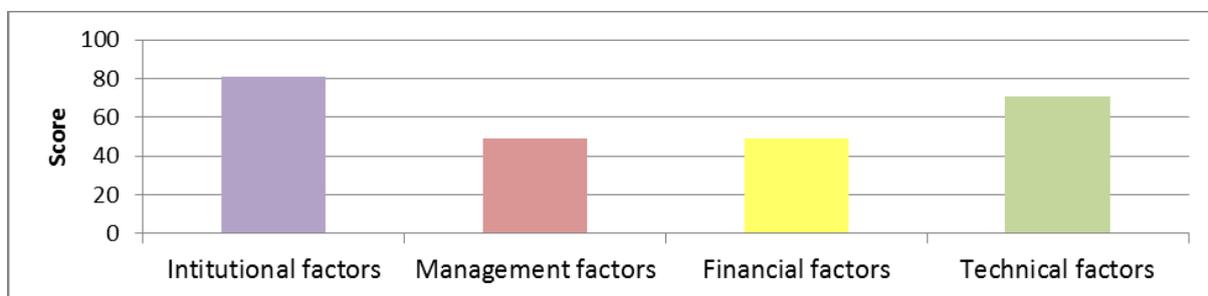


Figure 4: Overview of scores for community-managed reticulated systems

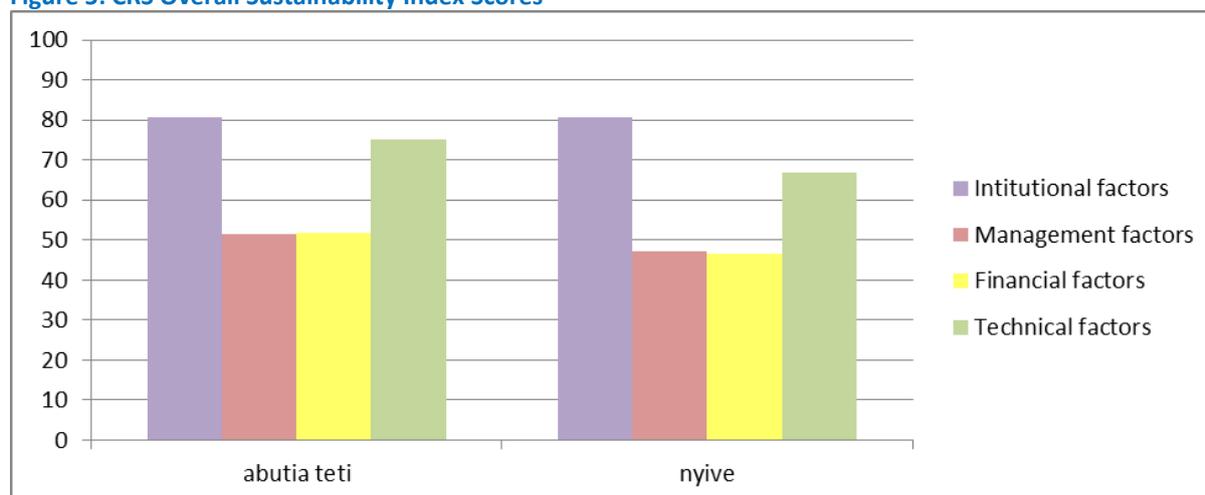
As shown in the table below, the handpump scores are similar to the scores of the reticulated systems and are generally highest at service provider level, followed by national level. Scores are lowest at district level indicators.

**Table 10: Average Indicator Scores and across survey levels**

Level	Average score on institutional indicators	Average score on management indicator	Average score on financial indicators	Average score on technical indicators	Overall average score per level
National level	100%	54%		50%	65%
District level	63%	25%	17%	50%	33%
Service provider level	80%	69%	71%	85%	76%
<b>Average score per factor</b>	<b>81%</b>	<b>49%</b>	<b>49%</b>	<b>71%</b>	<b>60%</b>

The graph below shows slightly lower average scores of Nyive than for Abutia Teti on the indicators related to the management, financial and technical factors. In general, the Nyive WSDB was found to be less strong than the Abutia Teti WSDB, which may account to some extent to these lower average scores.

**Figure 5: CRS Overall Sustainability Index Scores**



### Institutional factors

**Table 11: Scores on Institutional indicators related to Community-manager Reticulated Systems**

Indicator code	Indicator	Abutia Teti	Nyive	Average
WT-CRS-I-N1	National policy, norms and guidelines for community managed water supply and enabling legislation is in place	100%		
WT- CRS -I-D1	Roles, responsibilities of district (service authority) and ownership arrangements clearly defined	62.5%		
WT- CRS -I-SP1	There is a water committee which has been constituted in line with national norms and standards	80%	80%	80%

As mentioned under the CHP intervention, the National Water Policy fully recognizes community management. The CWSA guidelines on small town water supply provide norms and standards on the constitution of Water and Sanitation Boards (WSDBs). In addition, there is a model by-law on the establishment and operation of WSDBs (MLGRD, 2008), which further spells out how WSDBs should be constituted. This model by-law provides the legal standing of the WSDB. Therefore, the indicator *'National policy, norms and guidelines for community managed water supply and enabling legislation is in place'* scores the maximum of 100 for reticulated systems.

As for the CHP intervention, roles and responsibilities of the service authority in relation to supporting community-managed reticulated systems were found to be clearly understood by the Municipal Water and Sanitation Team members. These roles and responsibilities are described in the CWSA guidelines. However, as mentioned above, copies were not available at Municipal level. Although the MWST members were of the opinion that the members of the Water and Sanitation Development Boards understood the roles and the responsibilities of the MWST, the WSDB members themselves indicated that they only partially understood these roles and responsibilities. Therefore, the score of the indicator *'Roles, responsibilities of district (service authority) and ownership arrangements clearly defined'* is 62.5.

The two service providers of the reticulated systems (WSDBs) implemented under the Rotary/USAID Alliance in Ho Municipality received a score of 80 related to the indicator *'There is a water committee which has been constituted in line with national norms and standards'*. Both comprised of a gender balanced WSDB, with 14 (including six female) and eight members (including four female) in Abutia Teti and Nyive respectively, with both administrative and technical positions within the WSDB filled. However, although the WSDB was of the opinion that the entire community had been involved in their election, only 28% of the respondents in Abutia Teti and 7% in Nyive felt that the entire population of the community had been involved. About 47% in Abutia Teti and 64% in Nyive thought that the WSDB had been elected by the community leaders. The remaining part of the interviewed community members did not know how the WSDB had been elected. Therefore the two communities do not receive the maximum of 100, but only an 80 score on the indicator *'There is a water committee which has been constituted in line with national norms and standards'*.

**Table 12: CRS Management Scores**

Indicator code	Indicator	Abutia Teti	Nyive	Average
WT-CRS-M-N1	There is an updated national monitoring system or database available and updated	75%		
WT-CRS -M-N2	National support to district/service authority is provided, including refresher training	33%		
WT-CRS -M-D1	There is regular monitoring of water services and community management service provider and follow-up support	0%		
WT-CRS -M-D2	District/service authority drinking water plans for asset management are carried out and updated regularly	50%		
WT-CRS -M-SP1	Representative water committee actively manages water point with clearly defined roles and responsibilities	100%	75%	87.5%
WT-CRS -M-SP2	Water committee members actively participate in Committee meetings and decision making process and reporting is transparent	50%	50%	50%

The score on the indicator *'There is an updated national monitoring system or database available and updated'* is the same for community-managed piped systems as for community-managed handpumps, described in the previous section.

The Ho Municipal Water and Sanitation Team has been trained to support WSDBs in the management their systems. However, there is no systemic refresher training and the Municipal Authority does not monitor the effectiveness of their training. Therefore, community managed reticulated systems score 33 out of 100 on the indicator *'National support to district/service authority is provided, including refresher training'*.

The Ho Municipal Water and Sanitation Team indicated that it monitors financial, technical and administrative performance of WSDBs, but less frequently that every three months. However, the WSDBs mentioned that they had not been monitored by the Municipal Water and Sanitation Team since April 2011, (the date when they had both been established). Therefore, the Ho MWST scores 0 on the indicator *'There is regular monitoring of water services and community management service provider and follow-up support'*, related to community-managed reticulated systems.

The Ho Municipal Water and Sanitation Team has a District Water and Sanitation Plan, which was developed with active participation of the MWST. However, this plan was developed in 2008, and has not been updated since. Therefore the Ho MWST scores only 50 out of 100 on the indicator *'District/service authority drinking water plans for asset management are carried out and updated regularly'*.

In both cases, the management roles and responsibilities of the WSDB are clearly defined. However, the WSDB in Nyive indicated it is only able to execute some of these roles and responsibilities. Therefore the Nyive WSDB scores 75 and the Abutia Teti WSDB scores 100 on the indicator *'Representative water committee actively manages water point with clearly defined roles and responsibilities'*.

Both the Abutia Teti as well as the Nyive WSDB indicate that they meet at least every three months, as stipulated by the model by-law, though in Abutia Teti, no minutes are kept of these meetings. In Nyive, neither administrative, technical or financial records are kept. In Abutia Teti, these records were being kept and were found to be up to date, but were not shared with the community (according to 60% of community members interviewed). Therefore both WSDBs score 50 out of 100 on the indicator *'water committee members actively participate in Committee meetings and decision making process and reporting is transparent'*.

**Table 13: CRS Financial Scores**

Indicator code	Indicator	Abutia Teti	Nyive	Average
WT- CRS -F-SP1	Tariff setting complies with national/local regulations, including social tariff	75%	50%	62.5%
WT- CRS -F-SP2	Tariff collection is regular and sufficient	75%	100%	87.5%
WT- CRS -F-SP3	The water committee demonstrates effective financial management and accounting	75%	50%	62.5%
WT- CRS -F-D1	Resources available for district/service authority to fulfil functions	33%		
WT- CRS -F-D2	National/local mechanisms to meet full life cycle costs, beyond community contributions and tariffs	0%		

In both cases a tariff has been set of 0.05 GHS per bucket (about 2.50 GHS per m<sup>3</sup>, far above the utility lifeline tariff of 0.80 GHS per m<sup>3</sup>). According to the WSA guidelines, tariffs should be set in such a way that they are able to cover operation and maintenance costs as well as longer term capital maintenance expenditure costs like rehabilitation and major repairs. This was done in Abutia Teti, but in Nyive, the tariff was based on operation and maintenance costs only. In neither case was provision made for the poorest within the community. Therefore the WSDB of Abutia Teti scores 75 and the one of Nyive scored 50 on the indicator *'Tariff setting complies with national/local regulations, including social tariff'*.

People pay the tariff on a 'pay as you fetch' basis in both cases and annual revenues were found to be higher than annual expenditure. In Nyive, the annual revenues were more than 120% of the annual expenditure, which suggests sufficient savings to cover longer term capital maintenance expenditure. In Abutia Teti, revenues amounted to 110% of annual expenditure. In both cases, 100% of the people interviewed mentioned that they paid the tariff on pay as you fetch basis, which was confirmed by the WSDB. Therefore, both WSDBs score well on the indicator *'Tariff collection is regular and sufficient'*, with Abutia Teti scoring 75 and Nyive scoring 100.

Both WSDBs have a dedicated bank account and keep financial records. However, these financial records are not shared on a regular basis in Nyive and in neither case are financial records audited by an external party (the MWST). In Nyive, the chairperson was holding on to a substantial amount of cash-in-hand. With the chairperson about to resign and lack of transparency regarding recordkeeping, this poses a potential sustainability risk. The WSDBs on Abutia Teti and Nyive thus score 75 and 50 respectively on the indicator *'The water committee demonstrates effective financial management and accounting'*.

The Ho Municipal Water and Sanitation Team has adequate staff to support water service provision through community-managed reticulated systems. However, resources needed to actually undertake these support functions, including fuel and field allowances, are not sufficient. CWSA used to provide the MWST with such resources (with funding from a DANIDA Project), but at present the Assembly is expected to pay for this, but it currently does not. Therefore Ho Municipality scores 33% on the indicator *'Resources available for district/service authority to fulfill functions'*.

Tariffs in the two community-managed reticulated systems cover operation and maintenance costs and capital maintenance expenditure. Direct support costs related to the support of the MWST are not well catered for. Only part of the required budget is part of Municipal annual budgets.

**Table 14: CRS Technical Scores**

Indicator code	Indicator	Abutia Teti	Nyive	Avegare
WT- CRS -T-SP1	System is functional and providing basic level of service according to national policy	75%	75%	75%
WT- CRS -T-SP2	The knowledge and spare parts are available to conduct maintenance and repairs in a timely manner	100%	60%	80%
WT- CRS -T-SP3	Design and quality of infrastructure: sanitary surroundings	100%	100%	100%
WT- CRS -T-D1	The district water staff are able to provide support for maintenance and repairs on request		50%	
WT- CRS -T-N1	National/local norms defines equipment standardization and arrangements for providing spare parts		50%	

The Abutia Teti System provides water through 11 public standpipes and 14 household connections to an estimated population of 3,000 people. The Nyive system provides water services to an equal amount of people through seven standpipes. In both cases, less than half of the population depending on the standpipes was believed to be located further than 500 metres for a standpipe. Some 27% of interviewed community members in Abutia Teti and even 50% in Nyive estimated the time to fetch water from the standpipes as more than 30 minutes. Both systems do not therefore meet the benchmark related to accessibility of the system. Both systems meet the benchmarks related to reliability of water services, perceived water quality and quantity of water used however. Therefore, in sum, both systems score 75% on the indicator *'System is functional and providing basic level of service according to national policy'*.

In Abutia Teti and Nyive, the WSDB includes a member who can take care of basic repairs. Spare parts were found to be available and could be obtained within three days. In Abutia Teti, the local private sector was believed to be available within three day to support the WSDB with maintenance beyond the capacity of the WSDB, though this was not the case in Nyive. Nyive therefore scored 60% on the indicator *'The knowledge and spare parts are available to conduct maintenance and repairs in a timely manner'*, while Abutia Teti scored 100%.

Both systems scores 100% on the indicator *'Design and quality of infrastructure: sanitary surroundings'*, as they both had sources situated beyond 300 metres of the closed latrine, had clean and sanitary surroundings around both the source and the standpipes, with good drainage of the standpipe platforms and no risk of flooding. Both systems were able to provide water year round, without drying up.

The Ho Municipal Water and Sanitation Team indicated that in case of mayor repairs beyond the capacity of the community and the local private sector, they contact the CWSA, who then engages with contractors. Because the MWST is not able to provide direct support but is able to facilitate support and knows the mechanisms and channels for calling in this type of support, the Ho MWST scored 50% on the indicator *'The district water staff are able to provide support for maintenance and repairs on request'*.

The CWSA design guidelines for small town water supply provided details on the different elements that should be part of a community-managed reticulated system. However, national and local norms do not define arrangements for providing spare parts for reticulated systems. Therefore, a score of 50% was awarded on the indicator *'National/local norms defines equipment standardization and arrangements for providing spare parts'*.

### **Institutional latrines (INL)**

A total of eight schools, two in each of the four districts with completed school latrines, were selected for this sustainability index. In addition, the WC block (which was the only WC Block that had been completed at the time of the data collection) at the Osiem Community Health Clinic (CHP) was included in the sustainability index on institutional latrine interventions.

The figure below gives an overview of the average scores on the indicators related to the different sustainability factors. Like the water interventions, it shows highest average scores on the institutional and technical indicators. The average score of the management indicators is considerably lower than those of the water interventions.

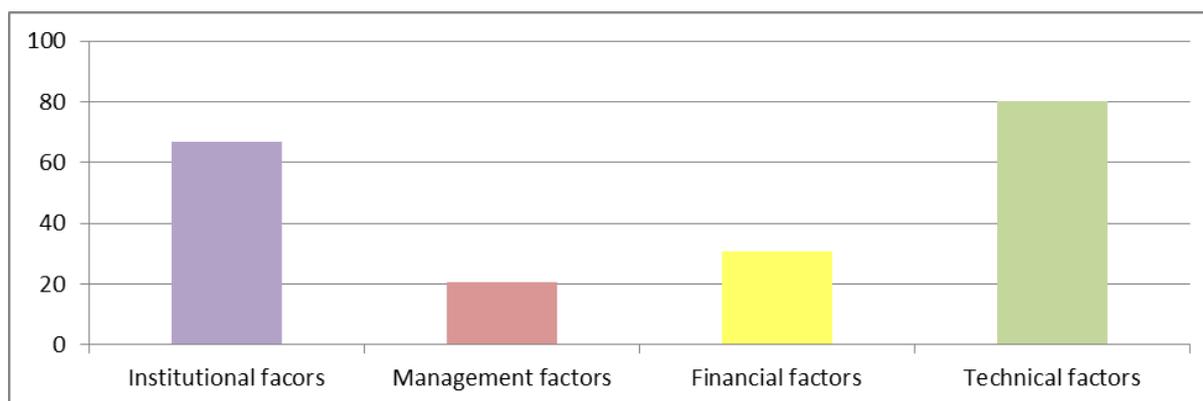


Figure 5: Overview of scores for school latrines

As shown in the table below, in the case of the school latrines, there is not much difference between the average scores over all four factors between the different levels.

Table 15: Average Indicator scores across survey levels

Level	Average score on institutional indicators	Average score on management indicator	Average score on financial indicators	Average score on technical indicators	Overall average score per level
National level	100%	13%	33%		49%
District level	50%	29%		100%	52%
Service provider level		11%	28%	74%	52%
<b>Average score per factor</b>	<b>67%</b>	<b>20%</b>	<b>31%</b>	<b>80%</b>	<b>51%</b>

The figure below gives an overview of the average scores on each of the indicator groups for each of the schools. It shows that scores on institutional and especially on technical indicators have been generally high. Average scores on management and financial indicators are considerably lower and there is more variation on these scores between the schools.

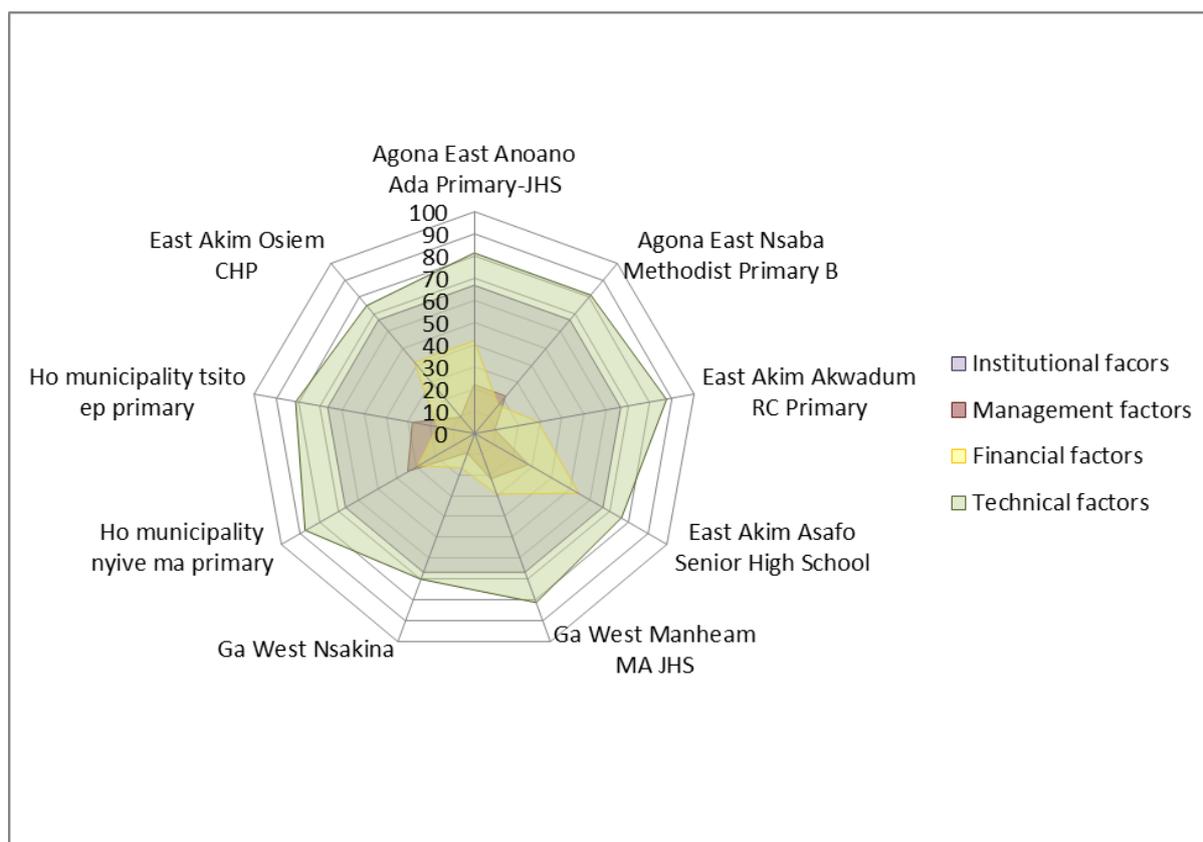


Figure 6: Institutional Scores disaggregated by Location

Below, an overview is given of the scores on the different indicators in each of the districts.

Table 16: SN Institutional scores

Indicator code	Indicator	District average				Average
		Agona East	East Akim	Ga West	Ho municipality	
SN-INL-I-N1	Presence of a dedicated institution with a school sanitation policy at national level, with clear institutional mandates at all levels and coordination between related ministries	100%				
SN-INL-I-D1	Clear roles and responsibilities of district / support institutions for providing support to service providers of school and institutional sanitation.	100%	100%	100%	100%	100%
SN-INL-I-D2	There are licensed and regulated septage haulers/desludgers	0%	0%	0%	0%	0%

The School Health Education Program is the dedicated institution for school sanitation in Ghana. It has clear institutional mandates as defined in the 2009 SHEP Policy and 2011 Strategic Framework for Effective School Health Programme Delivery. A National Steering Committee, composing not more than fifteen members from relevant public and private institutions is in the process of being set up. Therefore a score of 100% is given on the indicator 'Presence of a dedicated institution with a

*school sanitation policy at national level, with clear institutional mandates at all levels and coordination between related ministries’.*

At district level there is clarity on the roles and responsibilities of the SHEP coordinator, who monitors and supports schools for providing support to service providers of school and institutional sanitation. Members of the Municipal and district Water and Sanitation Teams have a role in visiting schools and inspecting sanitation and hand washing facilities, in coordination with the SHEP coordinator, as part of their usual community visits. Therefore, all districts received a full score on the ‘Clear roles and responsibilities of district / support institutions for providing support to service providers of school and institutional sanitation’ indicator. However, in none of the districts were *licensed and regulated septage haulers/desludgers* available, resulting in a 0 score on this indicator.

**Table 17: SN Management scores**

Indicator code	Indicator	District average				Average
		Agona East	East Akim	Ga West	Ho municipality	
SN-INL-M-SP1	School/institution understands responsibilities for pit emptying and has capacity to manage this	0%	8%	0%	37.5%	11%
SN-INL-M-D1	Monitoring of latrine use and maintenance and follow-up support provided by district/supporting institution	75%	42%	50%	75%	58%
SN-INL-M-D2	Support to schools/institutions in upkeep of latrines is available as needed	0%	0%	0%	0%	0%
SN-INL-M-N1	National support to local government / support institutions is provided	12.5%				

The majority of school latrines are of the Kumasi Ventilated Pit Latrine type. This type of latrine has two alternating pits under one chamber, with one pit opened at the time. When filled, the pit is closed and the other pit is opened. After a period of three years, the first pit can be safely emptied. By that time, the other with will have filled up (according to the guidelines for operation and maintenance of KVIP Latrines) and the rotation process begins again. Although there is a clear need for emptying of the pits, most of the schools selected for this sustainability index, believed the KVIP would not need emptying however. The two selected schools in Ho Municipality did see a need for emptying of the latrines. In their view, either the local NGO who had facilitated the implementation of the latrines, or CWSA should or would be available for the de-sludging. One selected school in Ga West Municipality also identified a need for emptying and considered the school to be responsible for this. However, this school was unclear how often and how this was supposed to happen. Therefore the average score on this indicator is very low.

According to the SHEP coordinators and M/DWSTs, monitoring in carried out in each of the four districts / municipalities. This monitoring takes place on a frequent basis when projects are ongoing and on a less frequent basis when there are no projects. The Schools in Ho Municipality indicated that they were monitored by the Local NGOs, while the other schools indicated that they were monitored by the District / Municipality, especially the SHEP Coordinator. The Akwadum RC Primary School in East Akim and the Nsakina school in Ga West indicated that they were not monitored at all, accounting for the lower scores on the indicator ‘Monitoring of latrine use and maintenance and

*follow-up support provided by district/supporting institution*'. In most cases where monitoring did occur, support was provided accordingly, most often in the form of advice. Support to schools and institutions in upkeep of latrines from district level is not available as needed.

Training of local government staff on to support school and sanitation and institutional latrines has been mostly project-based and is not systematic. Where training is provided, it is generally the district SHPE coordinator who is trained, while the District / Municipal Water and Sanitation Teams do not receive any training. Generally, district SHEP offices are under resourced and there are no criteria for selecting SHEP staff or coordinators and no clear process for capacity development and career prospects (EDS 2011). This lack of national level support to SHEP accounts for the low score on the *'National support to local government / support institutions is provided'* indicator.

**Table 18: SN Financial scores**

Indicator code	Indicator	District average				Average
		Agona East	East Akim	Ga West	Ho municipality	
SN-INL-F-SP1	Ability to meet long-term operational, minor maintenance and capital maintenance expenditure	25%	50%	12.5%	12.5%	28%
SN-INT-F-N1	National/district mechanisms to meet full life cycle costs, beyond school / institution's budget	33%				

Only half of the selected schools indicated to have a financial plan for the long term maintenance of the school latrines. Only in one of the selected schools in East Akim (the Asafo Senior High School), did the school save money for the long term capital maintenance expenditure costs.

Through the SHEP, there are some funds available for direct and indirect support related to school sanitation. Schools can apply for funds for major repairs and rehabilitation from the Assembly. There is however no clear process for distribution of these funds and records are not kept in a systematic way, hence the low score on the indicator related to *'National/district mechanisms to meet full life cycle costs, beyond school / institution's budget'*.

**Table 19: SN Technical scores**

Indicator code	Indicator	District average				Average
		Agona East	East Akim	Ga West	Ho municipality	
SN-INL-T-SP1	Latrines constructed in line with design criteria needed for long-term and safe use.	100%	93%	90%	100%	96%
SN-INL-T-SP2	Latrines are readily usable by students/users in terms of distance from institution and number of people sharing them	75%	67%	62.5%	62.5%	67%
SN-INL-T-SP3	Well-maintained latrines which are being used	50%	58%	50%	75%	58%
SN-INL-T-D1	Goods and services for maintenance, repair and emptying of institutional latrines available at district level	100%				

In general, *latrines have been constructed in-line with design criteria needed for long-term and safe use*, in terms of the availability of all the appropriate components (e.g. slab with cover, vent), the availability of handwashing facilities with soap or other cleaning agent available, the suitability of the facilities for children, a minimal distance of 30 metres to the closest water source with no or little risk of flooding. Only one school in East Akim was found to have facilities which had a risk of flooding, and one school in Ga West was found not to have handwashing facilities with soap available.

The CWSA design guidelines prescribe that the maximum number of users per pit should not exceed 50. In one of the schools in East Akim, Ho Municipality and Ga West Municipality, the number of users per pit exceeded this, hence the lower average score for these districts on the indicator *'Latrines are readily usable by students/users in terms of distance from institution and number of people sharing them'*. There does not seem to be a national standard related to the distance between the latrines and the school (which was found to vary between 6 and 100 metres in the selected schools).

In all schools, a regular cleaning program had been installed, with school children responsible for cleaning the facilities at least once a week, though this process was documented in only two out of the eight schools. The cleaning program includes replenishment of anal cleansing materials in all selected schools. The facilities of the Manheam MA JHS school have not been used as of yet. With the exception of the selected schools in East Akim, all students were reported to make use of the school latrines. Therefore the average score on the *'Well-maintained latrines which are being used'* indicator is slightly lower in these areas. The WC block at the Health clinic was kept very clean, but was underused, with 14 WCs and only an estimated 15 users per day (paying 0.20 GHS each). Only during large scale events in the area, such as funerals or weddings, were the facilities really used to their full capacity.

Consumables, equipment and private sector organizations are available at local level in case of a need for repairs to school latrines. Therefore, the districts all score 100% on the *'Goods and services for maintenance, repair and emptying of institutional latrines available at district level'* indicator.

### **Hand-washing and hygiene promotion (HWP)**

Hand-washing and hygiene promotion were not implemented as a separate intervention, but were an integral part of the water and sanitation interventions. For this study, it was decided to focus on hand-washing and health promotion in the communities where interventions had taken place. For this purpose household interviews and interviews with community-based health promoters or hygiene volunteers were conducted in the 15 selected communities with handpump interventions (CHP) and the two communities with reticulated system interventions (CRS). In addition, data was collected at national level through review of documents and interviews with key stakeholders.

The figure below gives an overview of the average scores on the indicators related to the different sustainability factors. It shows that on average the score on the financial factors are higher for the handwashing intervention than for the other community and school-based interventions. A reason for this could be the private nature of handwashing, as supposed to the communal nature of community-managed water interventions and school-based sanitation interventions.

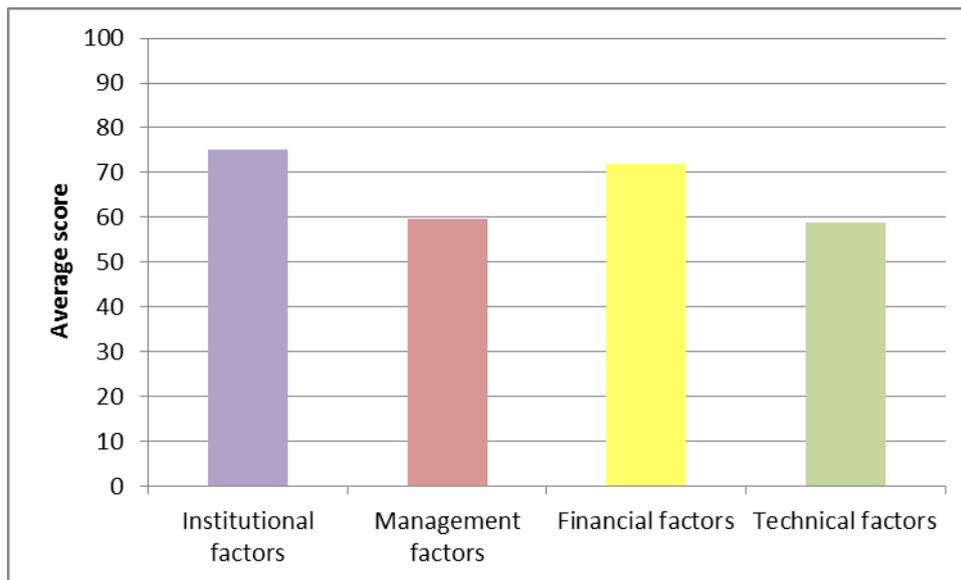


Figure 7: Overall HY-HWP Sustainability Index Scores

As shown in the graph below, the average score over all four factors is highest at national level and lowest at service level.

Table 20: Average indicator scores across survey levels

Level	Average score on institutional indicators	Average score on management indicator	Average score on financial indicators	Average score on technical indicators	Overall average score per level
National level	100%		33%		78%
District level	25%	62%	91%		59
Service provider level		57%	91%	59%	69%
<b>Average score per factor</b>	<b>75%</b>	<b>60%</b>	<b>72%</b>	<b>59%</b>	<b>69%</b>

The graph below gives an overview of the scores of the different factors for each of the communities. It shows consistency in the scoring of institutional indicators, and to some degree on the technical indicators, with Kofi Tabilkwa, Oboyambo and kweshi abbe as the only three communities scoring higher on technical factors and the financial factors. Large variation was found in the scores of the management factors between the different communities.

Figure 8: HY-HWP scores disaggregated by community

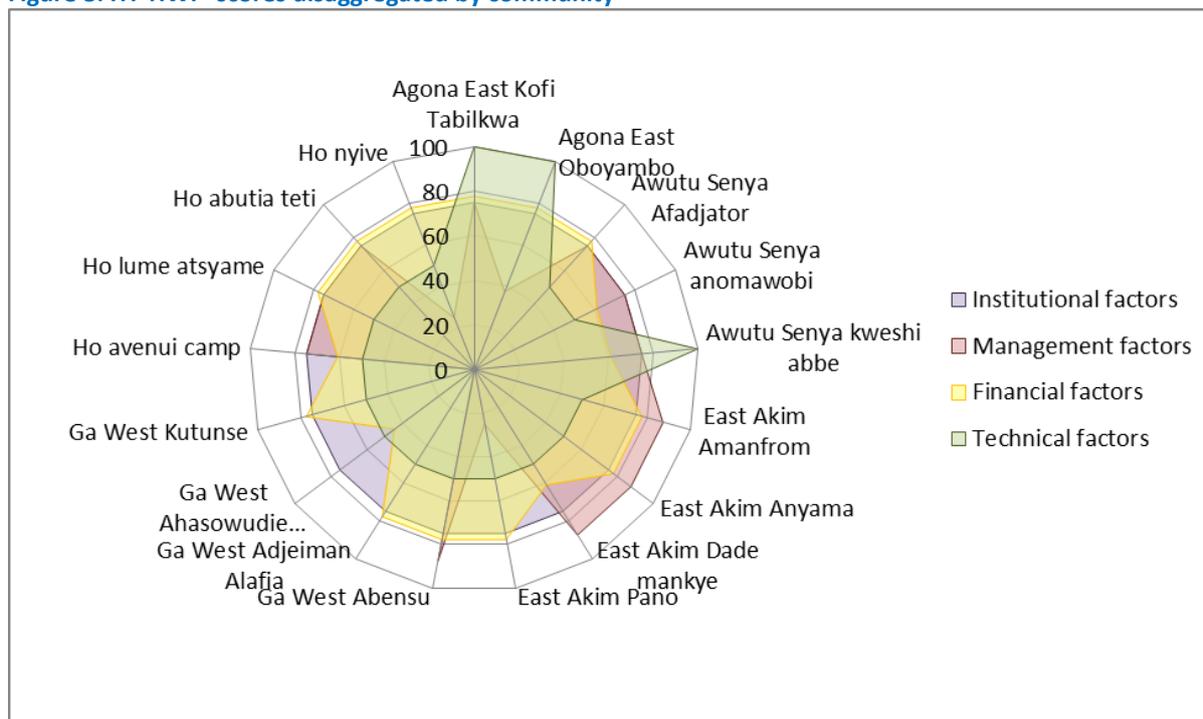


Table 21: HY-HWP Institutional scores

Indicator code	Indicator	District average					Average
		Agona East	Awutu Senya	East Akim Total	Ga West Total	Ho Total	
HY-HWP-I-N1	Hygiene promotion, including hand washing, as a recognized government policy	100%					
HY-HWP-I-N2	Existence of hygiene promotion/behavior change program with clear designation of responsibilities in national ministry (-ies)	100%					
HY-HWP-I-D1	Coordination and support for hygiene promotion by district authority and other agencies (Ministry of Health)	25%	25%	25%	25%	25%	25%

The National Water Policy recognizes the importance of handwashing and hygiene education. promotion and states that “Government will: (i) support the integration of water, sanitation and hygiene education/promotion (including hand washing) interventions; and (ii) ensure all water supply projects have budgets allocated to sanitation delivery and hygiene education to meet NCWSP requirements.” Hygiene promotion and handwashing are also an important element of the National Community Water and Sanitation Programme.

Since its launch in 2003, there has been a national Public private Partnership initiative to promote hand-washing with soap in Ghana, which includes mass media campaigns (eg the ‘truly clean hands’ campaign and direct hygiene promotion, using existing insitutions, like schools, M/DWSTs and WATSANs and WSDBs. the national coordinator is CWSA.

As health and handwashing promotion is to a large extent mainstreamed in other activities, a variety of organizations and institutions are involved. There are a number of platforms for coordination of hygiene and handwashing initiatives in Ghana. There is a Working Group on Handwashing with Soap, hosted by CWSA, which also includes the Ghana Health Service (Health promotion, Child development, nutrition), UNICEF, SHEP and the Environmental Health and Sanitation directorate of the Ministry of Local Government and Rural Development. CWSA is also represented on the Interagency Coordination Committee for Health Promotion, organized by the Ghana health service and the Technical Working Group on Sanitation, organized by the Environmental Health and Sanitation Directorate of the Ministry of Local government and Rural Development. On both these platforms, issues related to handwashing and hygiene promotion are raised on regular basis.

At district level, there are Environmental Health Assistants, who are responsible for promoting hygiene behavior and handwashing in communities. Links with national level Ministries and Agencies are not 100% however clear and coordination of handwashing activities at this level is more limited, hence the lower score on the indicator '*Coordination and support for hygiene promotion by district authority and other agencies (Ministry of Health)*'.

**Table 22: HY-HWP Management scores**

Indicator code	Indicator	District average					Average
		Agona East	Awutu Senya	East Akim Total	Ga West Total	Ho Total	
HY-HWP-M-SP2	Community facilitator or promoter with capacity to monitor and provide follow-up support to households , including refresher training	50%	75%	63%	38%	63%	57%
HY-HWP-M-D1	Monitoring and follow-up support provided to community hygiene promoter/facilitator, including refresher training	63%	75%	81%	31%	63%	62%

Ga West scores lowest on the indicator '*Community facilitator or promoter with capacity to monitor and provide follow-up support to households, including refresher training*'. This is because two (Adjeiman Alafia and Kutunse) out of the four selected communities in this Municipality were found not to have a community health promoter, while all other selected communities did have at least one community health promoter. In 12 out of the 17 selected communities, the community health promoters indicated that they monitored hygiene practices of households and that they provided support to the households accordingly. However, in only five out of the 17 selected communities, were more than 66% of the interviewed households were aware of the existence of the these community health promoters. Systematic annual refresher training on good hygiene practices is not undertaken in any of the communities.

Ga West scores also lowest on the indicator '*Monitoring and follow-up support provided to community hygiene promoter/facilitator, including refresher training*'. Out of the 17 communities, 12 had health promoters who indicated that they were monitored. The majority of health promoters that were monitored also indicated that they received support following the monitoring and on request. Health promoters in only five out of the 17 communities indicated that the received annual refresher training.

**Table 23: HY-HWP Financial scores**

Indicator code	Indicator	District average					Average
		Agona East	Awutu Senya	East Akim	Ga West	Ho	
HY-HWP-F-SP1	Willingness and ability to pay for hygiene products, including soap	100%	67%	88%	100%	100%	91%
HY-HWP-F-D1	Soap and other hygiene products available in the local market	100%	100%	100%	75%	88%	91%
HY-HWP-F-N1	National/local mechanisms to meet full cost of hygiene and hand washing promotion	33%					

In 14 out of the 17 selected communities, a majority (66%) of interviewed households indicated they were both willing and able to buy hygiene products, including soap. This accounts for the high average scores in the five districts on the ‘*Willingness and ability to pay for hygiene products, including soap*’ indicator. In total, 86% of the interviewed households indicated that they were willing and able to buy hygiene products. This was more or less in line with the percentage of interviewed households who were able to show the soap used for hand washing (85%)

*Soap and other hygiene products were found to be available on the local market, except in Avenui camp (Ho), where only soap was available and Ahasowudie Ebenezer (Ga West) where neither soap nor other hygiene products were available in the local market.*

The low scores on the ‘National/local mechanisms to meet full cost of hygiene and hand washing promotion’ indicator, are due to the fact that no local budget is available for hygiene promotion and that there are no social programs to provide low-income households with hygiene products. Funds for hygiene and hand washing promoting are available from National level however.

**Table 24: HY-HWP Technical scores**

Indicator code	Indicator	District average					Average
		Agona East	Awutu Senya	East Akim	Ga West	Ho	
HY-HWP-T-SP1	Knowledge of hand washing and correct use of facilities by households	100%	67%	50%	50%	50%	59%

In all communities more than 66% of the interviewed households knew about the importance of washing your hands with soap. The majority (66%) of households was able to indicate at least four out of the six crucial times for hand washing (before preparing food; after toilet use; after handling infant faeces; after social gatherings; before feeding infant; before preparing food) in only three out of the 17 communities, all of which were located in Central Region (Agona East and Awutu Senya District). This accounts for the lower score on the ‘*Knowledge of hand washing and correct use of facilities by households*’ indicator in East Akim, Ga West and Ho.

In total, 90% of the interviewed households indicated to wash their hands with soap or other cleaning agents. However, only 19% indicated to also use running water for hand washing. In all communities, the vast majority of interviewed households (93%) did know the importance of hand washing after toilet use.

## Analysis of Findings

The table below gives an overview of the total number of indicators per factor and per level of the four intervention areas combined. It shows that the institutional indicators are focused at national and district level, while finance and especially technical indicators are focused at service provider level.

**Table 22: Total number of indicators per survey level and factor**

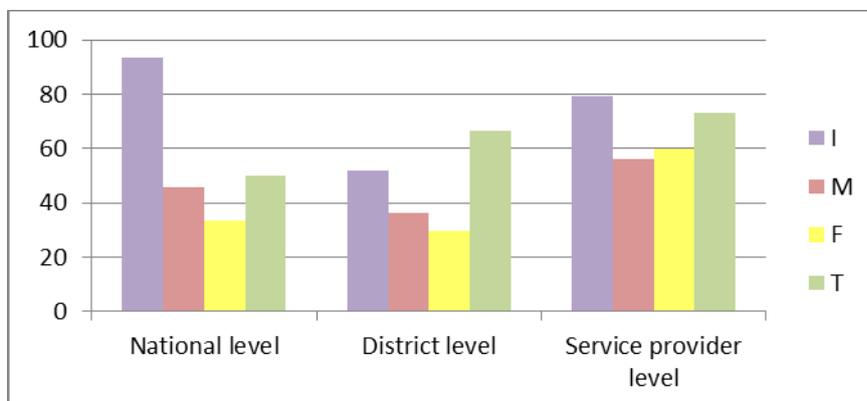
Row Labels	Institutional	Management	Finance	Technical	Total per level
National level	5	5	2	2	14
District level	5	7	5	3	20
Service provider level	2	6	8	10	26
<b>Grand Total</b>	<b>12</b>	<b>18</b>	<b>15</b>	<b>15</b>	<b>60</b>

### Primary drivers of sustainability

The table below presents an overview of the average scores on the different groups of indicators at the different institutional levels.

**Table 23: Average scores per factor and survey level**

Level	Average score on institutional indicators	Average score on management indicator	Average score on financial indicators	Average score on technical indicators	Overall average score per level
National level	93%	46%	33%	50%	62%
District level	52%	36%	30%	67%	43%
Service provider level	79%	56%	60%	73%	66%
<b>Average score per factor</b>	<b>74%</b>	<b>46%</b>	<b>46%</b>	<b>69%</b>	<b>57%</b>



**Figure 9: Overview of average indicator scores on different factors and levels**

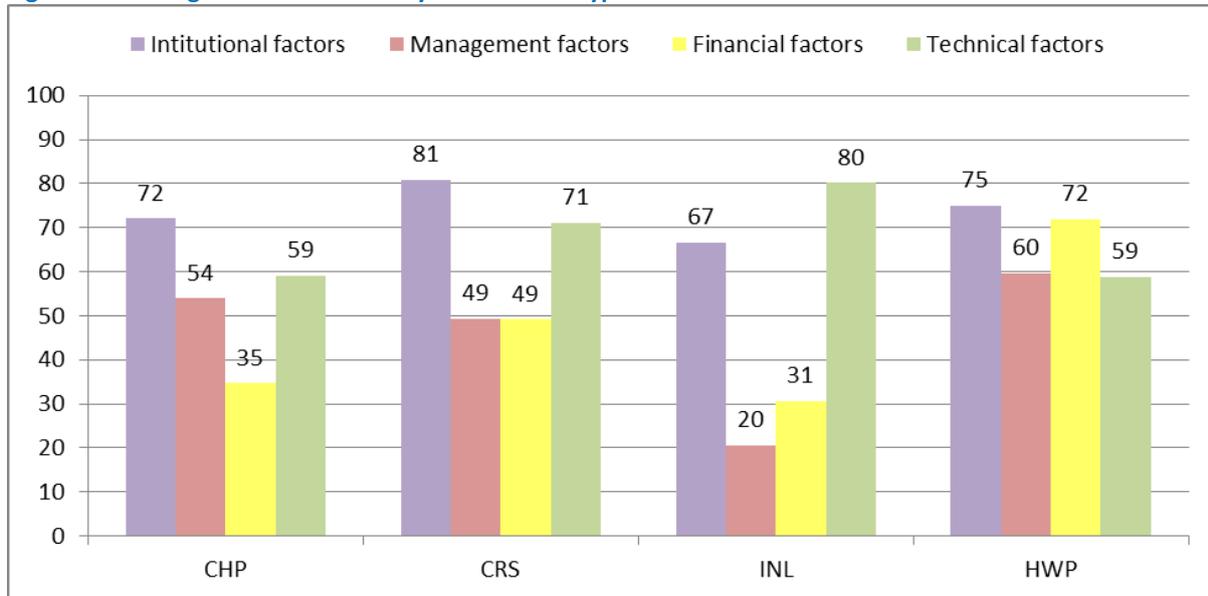
**Table 26** and **Figure 9** above suggest that national level scores highest on the institutional indicators, which seems to suggest that policies, strategies and guidelines that stimulate sustainability are in place in Ghana, which is an important driver for sustainability. On the management, financial and technical indicators, average scores are highest at service provider level. However, with a score below 60, management is still a sustainability challenge at this level.

The different water and sanitation interventions score high on the indicators related to whether or not the facilities have been implemented in line with the design criteria (WT-CHP-T-SP3: average score: 90%; WT- CRS -T-SP3: average score 100; SN-INL-T-SP1: average score: 96%). Hardware implementation does thus not seem to pose serious sustainability threats, although it should be noted that these systems are all very new or recently completed and that this finding should be tested in future assessments.

For the community-based reticulated system interventions, the score on the tariff collection indicator (WT- CRS -F-SP2) was quite high (87.5%). For the handpump interventions (CHP) the score on this indicator was (CHP-F-SP2) was considerable lower, but still relatively high, with an average score of 60 out of 100. Effective tariff collection and the availability of money at service provider level is an important driver for sustainability. However, transparent procedures and mechanisms have to be in place to ensure that the collected money is indeed used for operation and maintenance and saved for longer term repairs. This is an important element of indicator WT-CHP-M-SP2, on which both the piped systems as well as the handpumps score lower (50% and 43% respectively).

The graph below gives an overview of the average scores on the different factors per type of intervention. It shows that Community Managed Reticulated systems (CRS) have a higher average score than community managed handpumps (CHP). Legislation is better defined for WSDBs than for WASTANs, resulting in a higher average institutional score. They also score higher on the financial indicators, which makes sense, as reticulated systems are more complex, with higher operational costs and thus a higher need for good financial management.

Figure 10: Average indicator scores by intervention type



An important driver for sustainability is access to high quality and up-to-date data and information on water and sanitation facilities, on the performance of the community-based service providers and on the services they provide at District/ Municipal level. This would help the district / municipal level service authority to make better decisions on how to support community-based service providers. This was identified by the District and Municipal Planning Officer and Water and Sanitation Team as a large gap and major challenge for sustainability. However, this was not really captured under the indicators used for this study.

### Primary risks to sustainability

The above data has shown that although the national level scored relatively high on the institutional indicators, scores at this level were considerably lower on the management, financial and technical indicators. This seems to indicate problems with putting the policies and guidelines in practice. This reflects the reality in the WASH sector in Ghana, which is characterized by a significant gap between policy and practice (IRC/Aquaconsult, 2011).

District level scores lowest on all groups of indicators. Again, this reflects WASH sector reality in Ghana. Decentralisation is on-going, but has been progressing slowly. Support that the district level is supposed to provide to service providers is often lacking (indicated by the low score on the management indicators). This is (partly) caused by a lack of financial and human resources (as shown by the low score on the financial indicators) at this level. This is a potentially critical threat to the sustainability of interventions, especially for the community-managed handpumps and community-managed reticulated systems, which require high level of support from district level, but currently score lowest at this level.

At the service provision level, the management indicators score lowest on average, especially for the institutional latrines, which poses a significant sustainability risk for these types of interventions. Schools are often not aware that there are longer term management requirements related to sustainable operation and maintenance of the school latrines. A real blind spot and sustainability

threat is overlooking the need for emptying the latrines after a period of time. There is lack of clarity at school level regarding how, when and who is responsible for this task. This is aggravated by the fact that often community members use the school latrines as well after school hours, which fills up the pits faster than intended.

The data above has shown low scores on the financial indicators at all levels, but especially at district and national level. Although tariff collection does not seem to be a major issue, lifecycle costs beyond operation and maintenance costs, and to some extent capital maintenance expenditure, are not or minimally catered for. This is a significant threat to sustainability.

Low involvement of the district level staff in hardware and software implementation was found in some cases to result in the community not understanding the roles and responsibilities of the district level staff in monitoring them and providing direct support. In some cases, the community was of the opinion that the handpump had been given to them by 'the project' or 'Rotary and UASID' (as most facilities are clearly marked as such) and that the district thus had nothing to do with these interventions it. Therefore they did not see the need to approach the district in case of need of support and saw monitoring of district level staff as intrusive, given the temporary nature of the Alliance projects, this situation can be considered a risk to long term sustainability.

### Triangulation of results

For some sub-indicators, data was collected from different sources, for example from both service providers as well as households, community health promoters or M/DWSTs, in order to triangulate responses, the results of which are discussed below

#### **Water interventions (CHP and CRS):**

data was triangulated by comparing answers to scoring questions from different stakeholders on ten sub-indicators related to the water intervention indicators,.

For indicator WT-CHP-I-SP1, the opinion of whether or not the WASTSAN or WSDB had been democratically elected was compared between the WATSAN and the households responses. Only in two out of the 17 communities did the answers not align. The answer from the WATSAN / WSDB was used to score WT-CHP-I-SP1.

For indicator WT-CHP-I-D1 the opinion on whether or not the WATSAN / WSDB members understood the roles and responsibilities of the M/DWST was compared between WATSAN/WSDBs and M/DWSTs responses. With the exception of Awutu Senya district, the M/DWSTs believed that WATSANS and WSDBs did understand their role. However, in only seven out of the 17 communities did the WATSANS and WSDBs themselves indicate that they indeed understood the roles and responsibilities of the M/DST, therefore the answer from the WASTAN / WSDBs was used to score this indicator.

For indicator WT-CHP-M-SP, the opinion of the service provider (WATSAN / WSDB) was compared with that of the households. The data from the household survey was used for the scoring of this indicator, as it was believed to better reflect the reality.

For indicator WT-CHP-M-D1, related to whether or not districts monitor the service provider, the answers from the service provider and district survey were compared. Although all districts indicated that they did monitor service providers, not all of them indicated that they were monitored. Therefore the data from the service provider survey was used.

For indicator WT-CHP-F-SP2, the water service providers were asked whether in their opinion at least 80% of users paid for water. This was triangulated with the data from the household survey. Only in one case did the outcome not align. The data from the household survey was used to populate the results as this was believed to be a more accurate reflection of reality.

For indicator WT-CHP-T-SP1, data on reliability, accessibility, quantity and quality were triangulated between the service provider and the household survey. Related to reliability and accessibility, data from the service provider survey was used, while for quantity and user perception on quality, data from the household survey was used. In the case of institutional latrines, as no household or user surveys were carried out, no triangulation of data occurred.

#### **Hand washing and hygiene promotion (HWP):**

On two sub-indicators related to the hand washing and hygiene promotion intervention indicators, data was triangulated by comparing data from community-based health promoter and the WATSAN survey, with data from the household survey. Both were sub-indicators related to indicator HY-HWP-M-SP2. In 15 out of the 17 communities, the WATSAN indicated that there were hygiene promoters in the community. However, only in five communities the majority (at least 66%) of the interviewed households knew there were health promoters, although in each community with hygiene promoters at least part of the interviewed households were aware of this. Therefore, the answer from the WATSANs was used to score indicator HY-HWP-M-SP2

In 12 communities, health promoters indicated that they monitored the hygiene practices of households, but only in seven communities did the majority of households indicated that they were visited at least once a year. However, with the exception of one community, at least part of the interviewed households indicated to be visited at least once a year. Therefore the answer from the community health promoters was used for the scoring of indicator HY-HWP-M-SP2.

#### **Sustainability Index findings in context**

The findings of the sustainability index are largely in line with the general trends and perceptions in the sector. It shows there are relatively strong policies and strategies in place at national level, but that these are hardly adhered to at service provider and especially district level. The study also shows low levels of water services, poorly performing water service providers (very much in line with the findings from the triple-S Project on sustainable water services at scale in Ghana), and even poorer management of school latrines.

The focus on hand pumps of the Rotary/USAID Alliance diverts a bit from the sector trend of looking into possibilities of putting in place mechanized boreholes (a borehole with an electrical pump and a small number of standpipes) in areas which are difficult to reach with handpumps. As the focus of the Alliance intervention was on boreholes, some communities in which borehole drilling was not successful and had to be abandoned by the project and replaced with other communities.

A number of communities which had been selected for the Rotary/USAID Alliance were found to be very small and would probably not have been considered for hand pump implementation under other programmes.

### **Insights from partnership assessment**

A potential threat to sustainability identified by the partnership assessment is the limited involvement of the Community Water and Sanitation Agency (CWSA) in the software aspect of the Alliance Program. The MoU between Rotary and USAID, signed on 31<sup>st</sup> January 2011, originally envisaged a role for the CWSA, for which they were to receive a management fee of 2% of the project budget. However, when a similar MoU between the Partners and CWSA was drafted, it could not be endorsed by USAID because of funding constraints surrounding USAID interventions which prevent payments to public officers. Relief International was thus contracted by USAID to undertake the software component and contracting, supervising and monitoring local NGOs undertaking community mobilization and capacity building. The role of CWSA was therefore limited to facilitation of the hardware component under Rotary.

Furthermore, although in principle the MMDAs are responsible for monitoring and supporting community-based service providers, the CWSA does have a role to play in ensuring sustainable provision of water and sanitation services, as it in turn supports the MMDAs. Non-involvement of CWSA in software implementation can thus pose a potential risk for sustainable support to community-based service providers.

Separating hardware from software implementation can also lead to the unsynchronized implementation of the two components, which can cause sustainability challenges, for instance when community mobilization and training of the WATSAN is undertaken after, instead of before implementation of hardware.

## Recommendations to the Alliance in Ghana to improve future WASH programming

### Recommendations for Alliance implementation activities

On the basis of this sustainability index, a number of critical areas have emerged which may be helpful for future Alliance programming in Ghana and contribute to the likely long-term sustainability of investments. These are presented as follows, both for operational aspects and more strategic engagement.

#### Operational recommendations:

- Stronger focus on other models for water service delivery, beyond community managed handpumps. Small reticulated systems tend to provide higher level of services and tend to be better managed and more economically viable and sustainable. Especially in peri-urban areas like Ga Municipality, with utility managed water supply not far away, users often do not consider handpumps as an acceptable source of improved water supply.
- Involve the M/DWST in all aspects of hard and software interventions. They are responsible for providing long term support to the community-based service providers (WATSANs and WSDBs). If not involved from the beginning, the community and the community-based service providers will not recognize them as the service authority and source of support, when needed.
- Establish stronger links with regional CWSA, not only on hardware implementation, but also in coordination of the software aspects. In the absence of support of community-based service providers (WATSANs and WSDBs) from district level, the regional CWSA offices play an important role in monitoring and supporting community-based service providers.
- Focus more on strengthening long term management and financing of the institutional latrines. This could include putting in place facility management agreements for each school, clearly detailing out roles, responsibility and financing mechanisms to cover recurrent costs

#### Strategic recommendations relating to possible advocacy efforts:

- Advocate for and support the set-up and maintenance of strong databases and monitoring systems at district level, linked to national level monitoring frameworks
- Advocate for mechanisms and structures to cater for all lifecycle costs, going beyond operation and maintenance costs, which are generally catered for through tariffs.

### Recommendations for Alliance monitoring frameworks

The first Sustainability Index review of Alliance interventions in Ghana has highlighted a number of critical areas and has provided a testing ground for this type of composite framework looking at different factors across different levels of intervention. Much has been learnt about the way such a tool can work and what its limitations are (see section 8). One of the areas to explore further is to see to what extent the current members of the Alliance and their respective implementing partners, can build on these experiences to improve what they are monitoring as part of their everyday work. On the basis of this review, while being realistic about what is possible and cost-effective to measure on a regular basis, a number of the most important potential data for long-term monitoring can be identified in addition to those that may be already. Most important indicators at district and service provision level are:

Water interventions:

1. WT-CHP-I-D1: Roles, responsibilities of district (service authority) and ownership arrangements clearly defined
2. WT-CHP-I-SP1: There is a water committee which has been constituted in line with national norms and standards
3. WT-CHP-M-D1: There is regular monitoring of water services and community management service provider and follow-up support
4. WT-CHP-M-SP1: Representative water committee actively manages water point with clearly defined roles and responsibilities
5. WT-CHP-F-SP1: Tariff setting complies with national/local regulations, including social tariff
6. WT-CHP-F-SP2: Tariff collection is regular and sufficient
7. WT-CHP-F-SP3: The water committee demonstrates effective financial management and accounting
8. WT-CHP-F-D1: Resources available for district/service authority to fulfill functions
9. WT-CHP-T-SP1: Handpump is functional and providing basic level of service according to national policy
10. WT-CHP-T-SP2: Ability to conduct maintenance and repairs – skilled technician, spare parts availability etc.

In addition, it would be advantageous to include an indicator at district level to assess the availability of a database and / or monitoring system at district level, that gives the service authority good information on how best to provide direct support, undertake asset management etc.

Institutional latrines:

1. SN-INL-I-D1: Clear roles and responsibilities of district / support institutions for providing support to service providers of school and institutional sanitation.
2. SN-INL-M-SP1: School/institution understands responsibilities for pit emptying and has capacity to manage this
3. SN-INL-M-D1: Monitoring of latrine use and maintenance and follow-up support provided by district/supporting institution
4. SN-INL-M-D2: Support to schools/institutions in upkeep of latrines is available as needed
5. SN-INL-F-SP1: Ability to meet long-term operational, minor maintenance and capital maintenance expenditure
6. SN-INT-F-N1: National/district mechanisms to meet full life cycle costs, beyond school / institution's budget
7. SN-INL-T-SP3: Well-maintained latrines which are being used
8. SN-INL-T-D1: Goods and services for maintenance, repair and emptying of institutional latrines available at district level

In addition, it would be good if an institutional indicator could be included at service provision level. This indicator could be something like

9. SN-INL-I-SP1: "There is a structure at school or institutional level that is responsible for properly maintaining the sanitation facilities"

Handwashing and hygiene promotion:

1. HY-HWP-M-SP2:C community facilitator or promoter with capacity to monitor and provide follow-up support to households , including refresher training
2. HY-HWP-M-D1: Monitoring and follow-up support provided to community hygiene promoter/facilitator, including refresher training
3. HY-HWP-F-SP1: Willingness and ability to pay for hygiene products, including soap
4. HY-HWP-F-D1: Soap and other hygiene products available in the local market
5. HY-HWP-T-SP1: Knowledge of hand washing and correct use of facilities by households

## Lessons learnt about the Execution of the Sustainability Index Tool

This evaluation of Alliance activities in Ghana also provides an opportunity to learn about the design and application of the Sustainability Index Tool. In this first pilot in Ghana, the data was entered and collated automatically into an android phone program (unlike in the Philippines and the Dominican Republic where more conventional methods were used). The following section presents the key lessons related to the practical execution of the sustainability index tool.

### **i. Survey questions**

Questions were directed at local level (Household community-based service providers), district and national level. However, in Ghana, the *regional* level, where most national agencies have de-concentrated offices, is also important when it comes to providing support to community-based service providers *and* the service authority at district level. Although not carried out during this first implementation of the sustainability index, it would be advisable to include the regional level in subsequent exercises of this nature.

### **ii. The process of contextualizing questions**

Questions were contextualized by the sustainability assessment team based on their knowledge of the sector. As the sustainability assessment team was predominantly experienced in the rural water sector and less so in the sanitation and hygiene sector, national level documents were reviewed and opinions of key-informants at national level also were sought to contextualize the questions related to the sanitation and hygiene interventions. The questions were further refined and contextualized based on input and feedback from the data collectors from Volta region, where the field testing took place. This was found to work well.

### **iii. Survey work and sequencing**

Starting data collection at national level helped to further refine and contextualize the survey questions. Starting the field work with interviews at district level not only provides useful information on what to expect in the field, but also informs district level staff of the data collection activities in their district, which is often highly appreciated. At community level, data collection related to water interventions should start with an interview with the service provider (WATSAN or WSDB), involving as many members of the WATSAN / WSDB as possible. Before the interview, the facility should be inspected and GPS data and pictures should be taken. This also presents an opportunity to observe the state of facility repair and maintenance. The WATSAN/WSDB can be helpful in linking up to the community health promoters. In order to prevent conflicts of interest, none of the households which include WATSAN members should be selected for the household survey.

### **iv. Data entry and coding:**

The use of the android phones for data collection, with instant sending of the data to an online database that was downloadable in excel, eliminated the need for a lengthy data entry process. However, the application used, called FLOW, is currently still in a beta testing phase. A technical issue prevented a large part of data from six of the eight phones to be sent instantly, delaying the analysis stage of the exercise by some three weeks. Using mobile phone technology is thus a great time saver, but only if supported by good and timely back-up technical support.

**v. Data Analysis:**

Originally the scoring of indicators was based a number of answers to sub-questions using a likert scale (with progressive scores increasing with each positive answer). However, for many indicators it was found to be difficult to identify a clear hierarchy amongst the different sub-indicators in order to rank and commence the likert scoring and it was therefore decided to score indicators based on the aggregated scored of the sub-indicators rather than using the likert scale. Applying a likert scale can be useful when benchmarking however, i.e. defining a minimum acceptable level of scoring for each indicator (generally set at 50, when applying a scale with a maximum of 100) and communities and districts can then be assessed against the benchmark. However, establishing likert scales and benchmarks requires an elaborate and interactive process, which involves a large group of key stakeholders in a specific context and a lot more time and preparation than was available to this evaluation.

## Annexes:

### Annex 1: Overview of implemented facilities and selected communities and schools

#### Central Region, Awutu Senya district

##### Boreholes with handpumps

#	Community	Quantity	Status	Selected
1	Anomawobi	1	Completed	x
2	Kemuwor	1	Under construction	
3	Aboankiywonyi	1	Completed	
4	Papaye	1	Completed	
5	Obonase	1	Not completed	
6	Kwasi Abbey	1	Completed	x
7	Ofadzato	2	Completed	x
8	Tetteh-Okro	1	Completed	
9	Opembo	1	Completed	

##### Institutional latrines/ WC lorry park

#	Community	Quantity	Status	Selected
1	Bawjiase (Lorry Park)	1	Not started	
2	Bawjiase Presby Primary/ KG	2	Not completed	
3	Bawjiase Anglican Primary	2	Not completed	
4	Bawjiase Nuriyah Islamic Primary	1	Not completed	
5	Kasoa AME Zion Primary	2	Not completed	
6	Kasoa Methodist Primary	1	Not completed	
7	Kasoa Anglican Primary	2	Not completed	
8	Kilian Primary	1	Not completed	

#### Central Region, Agona East, district

##### Boreholes with handpumps

#	Community	Quantity	Status	Selected
1	Jerusalem Nsaba (Nkraafoo)	1	Completed	
2	Aboano	1	Completed	
3	Kofi Otabilkwa	1	Completed	x
4	Kojowusu Kwanyako	1	Completed	
5	Kwesi Budu Kwanyako	1	Completed	
6	Ntiful Mankrong(Kwame Ntiful)	1	Completed	
7	Alasimasi Duakwa	1	Completed	

8	Kofi Enukwaa	1	Completed	
9	Oboyambo	1	Completed	x
10	Ogyanhyewano (Mangoase)	1	Completed	

#### Institutional latrines

#	Community	Quantity	Status	Selected
1	Nsaba AME Primary/ SHS	1	Completed	x
2	Kwanyarko Presby Primary/SHS	1	Completed	
3	Kwanyarko Anglican Primary	1	Completed	
4	Mankrong DA Primary	1	Completed	
5	Aboano ADA Prim/JHS	1	Completed	x
6	Asafo SDA Primary/ JHS Asafo ADA KG/Primary	2	Not completed	
7	Abuakwa Akraon Pri/JHS	1	Not completed	
8	Mankron Junction Prim/JHS/KG	1	Not completed	
9	Nazifatu Prim/JHS	1	Not completed	

#### Eastern region, East Akim district

##### Boreholes with handpumps

#	Community	Quantity	Status	Selected
1	Abirw	1	Completed	
2	Aboabo	1	Completed	
3	Adjomoku	1	Completed	
4	Agyeman	1	Completed	
6	Amanfrom	1	Completed	x
8	Anomabo	1	Completed	
9	Anyama	1	Completed	x
10	Anyinasin	1	Completed	
12	Asafo Sec School	1	Completed	
13	Atenkansu	3	Completed	
14	Bediasi	1	Completed	
15	Beposo	2	Not on list	
17	Bokokrom	1	Completed	
18	Dade Mankye	1	Completed	x
19	Domeabra	2	Not on list	
20	Gyidikrom	1	Completed (replaced Kibi Zongo)	
21	Huhunya	1	Completed	
22	Kibi Sec Tech	1	Completed	
24	Kukurantumi Dadiesoaba	1	new	
25	Kwesi Awuku	1	new	
26	Kwesi Komfo	1	new	

27	Kwesi Krom	1	new: replaces Besease, which was not prepared, (changed by assembly)	
28	Mampong Nkwanta	1	new	
29	Mintakrom	1	new	
30	New Kukurantumi	1	new	
31	Nkrankrom	1	new	
32	Ohene Nkwanta	1	new	
33	Pano	1	new	x
34	Samodum	1	new	
35	Subie	1	new	

#### Institutional latrines/WC Health Post

#	Community	Quantity	Status	Selected
1	Akwadum RC Primary	1	Completed	x
2	Apedwa RC Primary	1	Completed	
3	Asafo RC Primary	1	Completed	x
4	Asafo Sec School	2	Completed	
5	Asiakwa RC Primary	1	Completed	
6	Christ the King Prim/JHS	1	Completed	
7	Kukurantumi Islamic Primary	1	Completed	
8	New Tafo Islamic Prim	1	Completed	
9	OPASS Mun Ass Pri/JHS	1	Completed	
10	Osiem SDA Prim	1	Completed	
11	Osiem CHIP Centre	1	Completed	x

#### Greater Accra region, Ga West Municipality

##### Boreholes with handpumps

#	Community	Quantity	Status	Selected
1	Abensu	1	Completed	x
2	Ahasowudie/Ebenezer	1	Completed	x
3	Adjeiman Alafia	1	Completed	x
4	Ayikai Doblo	1	Not installed	
5	Kutumse	1	Completed	x
6	Ofankor market	1	Completed (replaced Tetteh Asafo, as no suitable place could be identified there)	
7	Adom	1	Not completed	
8	Akcoshia	1	Not completed	
9	Manhyeam	1	Not completed	
10	Gatsikope	1	Not completed	
11	Gdome Sampamah	1	Not completed	
12	Afuaman	1	Not completed	

13	Dedeiman	1	Not completed	
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#### Institutional latrines

#	Community	Quantity	Status	Selected
1	Achiaman DA Primary	1	Not completed	
2	Adusa DA Primary	1	Not completed	
3	Akramaman DA Primary	1	None there	
4	Manhyeam	1	Completed	x
5	Nsakina DA Primary	1	Completed	x
6	Odumase Amanfrom DA Primary	1	None there	
7	Ofankor Anglican 1&2	1	None there	
8	Omanjor DA Primary	1	Not completed	
9	OPA DA Primary	1	Not completed	
10	Papase RC Basic	1	None there	
11	Pokuase DA JSS	1	None there	

#### Volta region, Ho Municipality

##### Boreholes with handpumps and mechanized water scheme

#	Community	Quantity	Status	Selected
1	Avenui Camp	2	Completed	x
2	Dzanyodeke	2	Not drilled yet. Drilling rig had difficulties going, because of elevation	
3	Lume Atsyame Camp	1	Completed	x
4	Kpatakope	1	Replaced Hodzo Kpota, as that community was found to be too small	
5	Tsyome Lomnava	1	Completed	

##### Community-managed reticulated systems

#	Community	Quantity	Status	Selected
6	Takla Gborgame	1	Completed	
7	Abutia Teti	1	Completed	x
8	Nyive	1	Completed	x

##### Institutional latrines/WC border Post

#	Community	Quantity	Status	Selected
1	Akrofu Agorve Junior High School	4	Completed	
2	Nyive L. A. Primary School	6	Completed	
3	Tanyigbe Atidze Kindergarten & Primary School	6	Status not known	
4	Tokokoe Abudi Health Post	4	Status not known	
5	Tsito E.P. Primary School	8	Completed	x
6	Nyive	12	Not ready yet	x

## Annex 2. Household Survey

Question	Response
<b>general</b>	
1. Region	Greater Accra _____ Volta _____ Central _____ Eastern _____
2. District	Ga West _____ East Akim _____ Agona East _____ Ho _____ Awutu Senya _____
3. Community	_____
4. Name of household head	_____
5. Name of interviewee	_____
6. gender	male _____ female _____
7. Age	_____
8. Number of household members	_____
9. What is the main source of livelihood for your household?	farming _____ fishing _____ small business _____ employed _____ remittances _____ family _____ state (e.g. pension) _____
10. Location of house	_____
<b>Hygiene</b>	
11. How do you wash your hands?	Under running water- using soap _____ Under running water- using other cleaning agent (e.g. ash) _____ Using running water only _____ with soap- but no running water _____ with other cleaning agent- but no running water _____ using non-running water only _____
12. When is it important to wash your hands?	After using the toilet _____ After cleaning baby's bottom _____ Before eating _____ Before feeding infants _____ Before preparing food _____ After social gathering _____ Never _____
13. Do the adults in your household have the habit of washing their hands at	After using the toilet _____

the following occasions?	After cleaning baby's bottom _____
	Before eating _____
	Before feeding infants _____
	After social gathering _____
	Before preparing food _____
	Never _____
14. Do children in your households have the habit of washing their hands at the following occasions?	No children in the household _____
	After using the toilet _____
	After cleansing baby's bottom _____
	Before eating _____
	Before feeding infants _____
	After social gathering _____
	Before preparing food _____
	never _____
15. Where do you wash your hands after toilet use?	Do not wash hands after toilet use _____
	at handwashing facility at toilet (e.g. veronica bucket) _____
	at toilet- without handwashing facility _____
	at place of open defecation _____
	outside house _____
	inside house _____
16. Do you have soap or other cleansing agents for handwashing available in the house?	yes _____
	no _____
17. Can you show me which running water you use?	Not using running water _____
	Able to show running water _____
	Not able to show running water _____
18. Can you show me the soap used for handwashing?	Does not use soap for handwashing _____
	Able to show soap for handwashing in use _____
	Not able to show soap for handwashing _____
19. Is soap for hand washing available in the local market?	yes _____
	no _____
20. Are sanitary hygiene products available in the local market?	yes _____
	no _____
21. Are drying racks for dishes available in the local market/easily constructed?	yes _____
	no _____
22. Are you willing to purchase hygiene products?	yes _____
	no _____
<b>Only answer if you responded no to Q22</b>	
23. Why not?	
	Too expensive _____
	Not available _____
	Not necessary _____

24. Have you purchased hygiene products during the last year?	yes _____
	no _____
<b>Water</b>	
25. What is your main source of water for drinking?	Handpump (implemented under Rotary project) _____
	other handpump _____
	rainwater _____
	hand dug well without handpump _____
	surface water _____
	sachet or bottled water _____
	standpipe _____
	household connection _____
don't know _____	
26. What is your main source of water for drinking in the dry season?	Handpump (implemented under Rotary project) _____
	other handpump _____
	rainwater _____
	hand dug well without handpump _____
	surface water _____
	sachet or bottled water _____
	standpipe _____
	household connection _____
don't know _____	
27. What is your main source of water for other domestic uses (washing etc)?	Handpump (implemented under Rotary project) _____
	other handpump _____
	rainwater _____
	Hand dug well without handpump _____
	surface water _____
	standpipe _____
	household connection _____
	don't know _____
28. What is your main source of water for other domestic uses (washing etc) in the dry season?	Handpump (implemented under Rotary project) _____
	other handpump _____
	rainwater _____
	Hand dug well without handpump _____
	surface water _____
	standpipe _____
	household connection _____
	don't know _____
29. Do you use water for other uses (e.g. gardening, brick making, etc)	yes _____
	no _____
<b>Only answer if you responded yes to Q29</b>	
30. What is your main source of water for those uses?	

	Handpump (implemented under Rotary project) _____
	other handpump _____
	rainwater _____
	hand dug well without handpump _____
	surface water _____
	sachet or bottled water _____
	standpipe _____
	household connection _____
	don't know _____
31. Does the facility provided by Rotary provide water service throughout the year, including the dry season?	yes _____ no _____
32. Over the last year, how many days was the facility non functional?	_____
33. How long does it normally take to repair the facility in case of breakdown?	More than 3 days _____ less than 3 days _____ less than a day _____ never had breakdown _____ don't know _____
34. Is the quality acceptable (in terms of colour, taste, odour)	yes _____ no _____
35. How much water does your household use from the Rotary facility, on average?	less than 20 litre per household member per day _____ more than 20 litre per household member per day _____ None _____
36. How long does it take you to fetch water from the rotary facility (round trip)?	more than 1 hour _____ more than 30 minutes _____ less than 30 minutes _____ less than 10 minutes _____
37. Do you pay for water from the Rotary facility?	yes _____ no _____
38. How much do you spend on water per month (in ghana cedis)	_____
<b>Only answer if you responded no to Q37</b>	
39. Why not?	
	No tariff charged _____
	System is not functioning _____
	Don't have to pay because of socio-economic situation of the household _____
	refuse to pay _____
<b>Only answer if you responded no to Q37</b>	
40. Are you willing to pay in future?	
	yes- only per bucket _____
	yes- only when asked in case of breakdown _____
	yes- per bucket and in case of breakdown _____

	no _____
<b>Only answer if you responded no to Q40</b>	
41. Why not?	
	Other water sources available _____
	Someone else should pay _____
	No money available _____
<b>Water management</b>	
42. Do you know whether there is a WATSAN or WSDB?	
	yes _____
	no _____
	don't know _____
<b>Only answer if you responded yes to Q42</b>	
43. Who elected the WATSAN / WSDB?	
	PO staff _____
	entire community _____
	community leaders _____
	district staff _____
	don't know _____
44. Do you know whether technical, administrative and financial records are kept?	
	I know they are kept _____
	I know they are not kept _____
	don't know _____
<b>Only answer if you responded I know they are kept to Q44</b>	
45. Are technical, administrative and financial records shared with the community?	
	yes- at least twice a year _____
	Yes- at least every year _____
	Yes- but less than every year _____
	no _____
46. Does the water committee carry out all the roles required of it?	
	yes _____
	no _____
	some _____
	don't know _____
47. Are you satisfied with the functioning of the committee?	
	yes _____
	no _____
<b>Only answer if you responded no to Q47</b>	
48. Why not?	
	Committee does not communicate well with community _____
	Committee charges too much for water _____
	committee does not maintain facility well _____
	Committee does not use revenues well _____
49. Do you know whether there is a hygiene promoter(s) in the WATSAN, WSDB or community?	
	yes i know there is _____
	yes i know there isn't _____
	don't know _____
<b>Only answer if you responded yes i know there is to Q49</b>	
50. How often is your household visited by a hygiene promoter?	

	never _____
	less than once a year _____
	at least once a year _____
	at least twice a year _____
	at least every 3 months _____

### Annex 3. Framework indicators and sub-questions

Note: Questions in grey were used to triangulate information; points are indicated in the row for the source that provided the final answer.

Source codes: SP=Service Provider, DS= District, NL= National Level, HH= Household survey

Community Reticulated System Framework			
Source	Code	Indicator; Indicator Questions	Scoring
	<b>WT-CRS-I-SP1</b>	<b>There is a water committee which has been constituted in line with national norms and standards</b>	
		<b>Score using score of 20 per positive answer</b>	
SP	WT-CRS-I-SP1a	a) Is there a water committee?	20
SP	WT-CRS-I-SP1b	b) Are there national (or local) norms and standards for the composition of a water committee?	20
SP	WT-CRS-I-SP1c	c) Is the water committee constituted in line with the national (or local) norms and standard, in terms of number and functions of members?	20
SP	WT-CRS-I-SP1d	d) Is the water committee constituted in line with the national norms and standard , in terms of gender? <i>In the absence of a standard, how many men?_____ How many women?_____</i>	20
SP	WT-CRS-I-SP1e	e) Has the water committee been democratically elected with involvement of the entire community?	
HH	WT-CRS-I-SP1e	e) Has the water committee been democratically elected with involvement of the entire community?	20
	<b>WT-CRS-I-D1</b>	<b>Roles, responsibilities of district (service authority) and ownership arrangements clearly defined</b>	
		<b>Score (25 points each)</b>	
DS	WT-CRS-I-D1a	a) Are there formalized roles and responsibilities for the service authority?	25
DS	WT-CRS-I-D1b	b) Are the roles and responsibilities of the service authority written down and accessible? ( <i>Check</i> )	25
DS	WT-CRS-I-D1c	c) Are the roles and responsibilities of the service authority understood by all in the service authority involved in overseeing the water system?	25
DS	WT-CRS-I-D1d	d) Are the roles and responsibilities of the service authority understood by the service provider?	
SP	WT-CRS-I-D1d	d) Are the roles and responsibilities of the service authority understood by the service provider?	25
<b>NL</b>	<b>WT-CRS-I-N1</b>	<b>National policy, norms and guidelines for community managed water supply and enabling legislation is in place</b>	
		<b>Score (1/3 of 100 each)</b>	

NL	WT-CRS-I-N1a	a) Does national policy for water supply recognize community management?	33
NL	WT-CRS-I-N1b	b) Have national norms and standards been set on the constitution and governance of community-based service providers (e.g. water committees in terms of functions)?	33
NL	WT-CRS-I-N1c	b) Is legislation in place that gives community management legal standing (e.g. by-laws formalizing water committees)?	33
	<b>WT-CRS-M-SP1</b>	<b>Representative water committee actively manages water point with clearly defined roles and responsibilities</b>	
SP	WT-CRS-M-SP1a	a) Are the management roles and responsibilities of the water committee clearly defined? (" <i>No</i> " if there is no committee)	25
SP	WT-CRS-M-SP1b	b) Does the water committee carry out all the roles required of it?	No=0; some, but not all=50; All = 100
	<b>WT-CHP-M-SP2</b>	<b>Water committee members actively participate in Committee meetings and decision making process and reporting is transparent</b>	
		<b>Score: quarterly meeting = 25 points; keeping minutes = 25 points ; keepig records - 25 points; sharing records = 25 points</b>	
SP	WT-CRS-M-SP2a	a) Are water committee meetings conducted at the minimum frequency stipulated by local by-laws? [ <i>or at least once every six months</i> ]	N/A
SP	WT-CRS-M-SP2b	b) Are water committee meetings conducted at least once every 3 months?	25
SP	WT-CRS-M-SP2c	c) Are minutes kept of decisions made at water committee meetings ?	25
SP	WT-CRS-M-SP2d	d) Are technical, administrative and financial records kept?	25
HH	WT-CRS-M-SP2e	e) Are technical, administrative and financial records kept and shared with the community on regular basis?	25
	<b>WT-CRS-M-D1</b>	<b>There is regular monitoring of water services and community management service provider and follow-up support</b>	
		<b>Score, 25 points for each sub-indicator</b>	
SP	WT-CRS-M-D1a	a) Does the district/service authority monitor financial, technical and administrative performance of the service provider?	25
DS	WT-CRS-M-D1a	a) Does the district/service authority monitor financial, technical and administrative performance of the service provider?	
SP	WT-CRS-M-D1c	c) Does monitoring take place every 3 months or less?	25
SP	WT-CRS-M-D1b	b) Does monitoring lead to direct support to the service provider when required?	25

SP	WT-CRS-M-D1d	d) Does monitoring include periodic financial audits?	25
	<b>WT-CRS-M-D2</b>	<b>District/service authority drinking water plans for asset management are carried out and updated regularly</b>	
		<b>Score (25 each)</b>	
	WT-CRS-M-D2a	a) Is there a water plan at this level?	25
	WT-CRS-M-D2b	b) Was the water plan developed with active participation of the district water staff?	25
	WT-CRS-M-D2c	c) Is the water plan updated annually?	25
	WT-CRS-M-D2d	d) Is monitoring data used to update the water plan?	25
<b>NL</b>	<b>WT-CRS-M-N1</b>	<b>There is an updated national monitoring system or database available and updated</b>	
		<b>Score (25 each)</b>	
NL	WT-CRS-M-N1a	a) Is there a national water database?	25
NL	WT-CRS-M-N1b	b) Does the collected monitoring data include data on functionality of facilities and performance of service providers?	25
NL	WT-CRS-M-N1c	b) Is monitoring data collected at district level sent to the national level on at least an annual basis?	25
NL	WT-CRS-M-N1d	c) Is the national water database used to influence national water planning and budgeting?	25
<b>NL DS</b>	<b>WT-CRS-M-N2</b>	<b>National support to district/service authority is provided, including refresher training</b>	
		<b>Score 1/3 each</b>	
DS	WT-CRS-M-N2a	a) Is the district/service authority trained to support community water systems?	33
NL	WT-CRS-M-N2b	b) Is routine refresher training provided annually to district/service authority for their support for community water systems?	33
NL	WT-CRS-M-N2c	c) Does the authority monitor the effectiveness of the training?	33
	<b>WT-CRS-F-SP1</b>	<b>Tariff setting complies with national/local regulations, including social tariff</b>	
		<b>Score, 25 points per sub-indicator</b>	
SP	WT-CRS-F-SP1a	a) Has a water tariff been set?	25
SP	WT-CRS-F-SP1b	b) Do national / local regulations prescribe basing the tariff on projected costs, including operation and minor maintenance costs, as well as making provision for capital maintenance (rehabilitation and replacement?)	25
SP	WT-CRS-F-SP1c	c) Has the tariff been set in line with national / local regulations?	25
SP	WT-CRS-F-SPd	d) Does the tariff make provision for the poorest within the community (e.g. through a social tariff)?	25
	<b>WT-CRS-F-SP2</b>	<b>Tariff collection is regular and sufficient</b>	

		Score, 25 points per sub-indicator	
SP	WT-CRS-F-SP2a	a) Is the tariff collected on a regular schedule (e.g. on pay-as-you - fetch basis, or monthly household levies, instead of collecting money when there is a breakdown)?	25
SP	WT-CRS-F-SP2b	Are annual revenues higher than expenditure?	25
SP	WT-CRS-F-SP2c	Are the revenues at least 20% higher than the expenditure, in order to cover capital maintenance expenditure?	25
SP	WT-CRS-F-SP2d	d) Do most (at least 80%, or a proportion in line with national or locally set standards) households pay the tariff? (i.e. Are they achieving the specified collection efficiency)	
hh	WT-CRS-F-SP2d	d) Do most (at least 80%, or a proportion in line with national or locally set standards) households pay the tariff? (i.e. Are they achieving the specified collection efficiency)	
	<b>WT-CRS-F-SP3</b>	<b>The water committee demonstrates effective financial management and accounting</b>	
	<b>WT-CRS-F-SP3</b>	<b>Score using 25 points per question</b>	
SP	WT-CRS-F-SP3b	b) Does the committee have a bank account? (check)	25
SP	WT-CRS-F-SP3a	a) Does the water committee keep financial records? (check)	25
SP	WT-CRS-F-SP3c	c) Does the committee share financial records with the community on a regular basis?	25
SP	WT-CRS-F-SP3d	d) Are financial accounts audited? (check)	25
	<b>WT-CRS-F-D1</b>	<b>Resources available for district/service authority to fulfill functions</b>	
	<b>WT-CRS-F-D1</b>	<b>Score 1/3 each</b>	
DS	WT-CRS-F-D1a	a) Is there adequate staffing?	33
DS	WT-CRS-F-D1b	b) Is there sufficient budget allocated to the district water staff to provide the required support and service?	33
DS	WT-CRS-F-D1c	c) Is the budgets dispersed and used for this support / Or if support has not been needed is there a clear process for doing so?	33
<b>NL</b>	<b>WT-CRS-F-D2</b>	<b>National/local mechanisms to meet full life cycle costs, beyond community contributions and tariffs</b>	
	<b>WT-CRS-F-D2</b>	<b>Score 50 each</b>	
NL	WT-CRS-F-D2a	a) Is there a budget line for this in the national budget?	50
NL	WT-CRS-F-D2b	b) Are national / local mechanisms in place to fill the financing gap between collected revenues and lifecycle costs, where these occur?	50
	<b>WT-CRS-T-SP1</b>	<b>System is functional and providing basic level of service according to national policy</b>	
	<b>WT-CRS-T-SP1</b>	<b>Score, hh perspective</b>	

	<b>WT-CRS-T-SP1</b>	<b>Score, SP perspective</b>	
SP	WT-CRS-T-SP1a	Acceptable reliability (at least 95% of days in a year functioning)?	25
HH	WT-CRS-T-SP1a	Acceptable reliability (at least 95% of days in a year functioning)?	
SP	WT-CRS-T-SP1b	Acceptable accessibility (no crowding (not more than 300 people per standpipe) + acceptable distance to standpipe (max 500 m)	25
HH	WT-CRS-T-SP1b	Acceptable accessibility (no crowding (not more than 300 people per standpipe) + acceptable distance to standpipe (max 500 m)	
SP	WT-CRS-T-SP1c	Acceptable quantity (at least 20 liters per capita per day)	
HH	WT-CRS-T-SP1c	Acceptable quantity (at least 20 liters per capita per day)	25
SP	WT-CRS-T-SP1d	Acceptable quality	
HH	WT-CRS-T-SP1d	Acceptable quality	25
	<b>WT-CRS-T-SP2</b>	<b>The knowledge and spare parts are available to conduct maintenance and repairs in a timely manner</b>	
	<b>WT-CRS-T-SP2</b>	<b>Score (each answer = 20 points)</b>	
SP	WT-CRS-T-SP2a	b) Are there service provider staff available for basic repairs?	20
SP	WT-CRS-T-SP2b	a) Is local private sector available to support the community based service provider?	20
SP	WT-CRS-T-SP2c	c) Are spare parts available	20
SP HH	WT-CRS-T-SP2d	d) can spare parts be obtained within 3 days	20
	WT-CRS-T-SP2e	e) Can services of local private sector be available within 3 days?	20
<b>SP</b>	<b>WT-CRS-T-SP3</b>	<b>Design and quality of infrastructure: sanitary surroundings</b>	
	<b>WT-CRS-T-SP3</b>	<b>Score (25 each)</b>	
SP	WT-CRS-T-SP3a	a) The source is situated greater than 30m (or national/local norm) from the nearest latrine or open water source. (check)	25
SP	WT-CRS-T-SP3b	b) The source and standpipes have a sanitary surrounding which allows good drainage and has a fence to stop animals from accessing it. (check)	25
SP	WT-CRS-T-SP3c	c) The location of the borehole is not at risk of flooding.	25
SP	WT-CRS-T-SP3d	d) The borehole /source is deep enough to provide water throughout the year, including during the dry season.	25
	<b>WT-CRS-T-D1</b>	<b>The district water staff are able to provide support for maintenance and repairs on request</b>	
DS	WT-CRS-T-D1a	a) Are the district water staff able to provide technical support for maintenance and repairs on request?	100
	<b>WT-CRS-T-N1</b>	<b>National/local norms defines equipment standardization and arrangements for providing spare parts</b>	
	<b>WT-CRS-T-N1</b>	<b>score</b>	
NL	WT-CRS-T-N1a	a) Do national/local norms define equipment standardization?	50
NL	WT-CRS-T-N1b	b) Do national/local norms define arrangements for providing spare parts?	50

