



SANITATION AND HYGIENE SECTOR CAPACITY NEEDS ASSESSMENT

GHANA COUNTRY REPORT

OCTOBER 2023

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Tetra Tech Contacts:

Morris Israel, Chief of Party
morris.israel@tetrattech.com

Carolien Van der Voorden, Deputy Chief of Party
c.vandervoorden@tetrattech.com

Lucia Henry, Project Manager
lucia.henry@tetrattech.com

Tetra Tech, Inc.
1320 N. Courthouse Road, Suite 600, Arlington VA 22201
Tel: (703) 387-2100, Fax: (703) 414-5593
<https://www.globalwaters.org/washpals-2>

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ACRONYMS AND ABBREVIATIONS

AAMUSTED	Akenten Appiah-Menkah University of Skills Training and Entrepreneurial Development
APDO	Afram Plains Development Organisation
AWS	Area-Wide Sanitation
BCC	Behavior Change Communication
CLTS	Community-Led Total Sanitation
CNA	Capacity Needs Assessment
CONIWAS	Coalition of NGOs in Water and Sanitation
CPD	Continuous Professional Development
CRO	Community Relations Officer
CSO	Civil Society Organization
CWSA	Community Water and Sanitation Agency
DEHO	District Environmental Health Officer
DICCS	District Inter-agency Coordinating Committee on Sanitation
DP	Development Partner
EHA	Environmental Health Analyst
EHO	Environmental Health Officer
EHSD	Environmental Health and Sanitation Directorate
EHSU	Environmental Health and Sanitation Unit
FGD	Focus Group Discussion
GAMA	Greater Accra Metropolitan Area
GASSLIP	Greater Accra Sustainable Sanitation and Livelihood Improvement Project
GEA	Ghana Enterprises Agency
GES	Ghana Education Service
GESI	Gender Equality and Social Inclusion
GHS	Ghana Cedi
GIS	Geographic Information System
GKMA	Greater Kumasi Metropolitan Area
GLAAS	Global Analysis and Assessment of Sanitation and Drinking Water
GOG	Government of Ghana
HR	Human Resources

ICT	Information and Communications Technology
ILGS	Institute for Local Government Studies
INGO	International Nongovernmental Organization
IT	Information Technology
JMP	Joint Monitoring Programme
KII	Key Informant Interview
KNUST	Kwame Nkrumah University of Science and Technology
KVIP	Kumasi Ventilated Improved Pit
M&E	Monitoring and Evaluation
MESTI	Ministry of Environment, Science, Technology, and Innovation
MMDA	Metropolitan, Municipal, and/or District Assembly
MLGDRD	Ministry of Local Government, Decentralization, and Rural Development (formerly the Ministry of Local Government and Rural Development)
MoE	Ministry of Education
MoH	Ministry of Health
MSWR	Ministry of Sanitation and Water Resources
NDPC	National Development Planning Commission
NESSAP	National Environmental Sanitation Strategic Action Plan
NGO	Nongovernmental Organization
NLLAP	National-Level Learning Alliance Platform
NSA	National Sanitation Authority
NVTI	National Vocational Training Institute
O&M	Operation and Maintenance
ODF	Open Defecation Free
OHLGS	Office of the Head of Local Government Service
OHCS	Office of the Head of Civil Service
PHE	Public Health Engineer
PPP	Public-Private Partnership
R&D	Research and Development
RCC	Regional Coordinating Council
REHO	Regional Environmental Health Officer

RSMS	Rural Sanitation Model and Strategy
SDG	Sustainable Development Goal
SHEP	School Health Education Program
SHS	Senior High School
SME	Small and Medium Enterprise
TaMA	Tamale Metropolitan Assembly
TVET	Technical and Vocational Education and Training
UENR	University of Energy and Natural Resources
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
USD	United States Dollars
VIP	Ventilated Improved Pit
WAPCEH	West African Postgraduate College of Environmental Health
WASH	Water, Sanitation, and Hygiene
WASHPaLS	Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability Activity
WHO	World Health Organization

PREFACE

The United States Agency for International Development (USAID) Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) #2 is a five-year (2021–2026) activity implemented by Tetra Tech and partners. The project aims to strengthen USAID’s and partners’ water, sanitation, and hygiene programming through support for learning and adoption of the evidence-based programmatic foundations needed to achieve the Sustainable Development Goal 6.2. The overarching theme for WASHPaLS #2 learning and research is area-wide sanitation (AWS). In addition to defining and seeking to understand effective implementation of AWS, WASHPaLS #2 implementation research also focuses on market-based sanitation and social and behavior change to reduce pathogen transmission pathways for infants and young children.

From March to October 2022, WASHPaLS #2 conducted a sanitation and hygiene sector workforce capacity needs assessment (CNA) focused on sub-Saharan Africa and South and Southeast Asia. The objective of the assessment was to better understand the capacity needs across the sanitation and hygiene sectors and the dynamics at play in trying to address these needs, to inform a roadmap of agreed-upon priority actions and pathways for the sector at multiple levels. The assessment focused on the human resource (HR) requirements to deliver area-wide rural sanitation and hygiene sustainably and at scale, with emphasis on on-site sanitation.

WASHPaLS #2 conducted six country-level CNAs, including in Ghana, to validate and complement initial findings from a global review and to understand local dynamics. Other country-level assessments were conducted in India, Nepal, Nigeria, the Philippines, and Rwanda. This report presents the findings from the CNA in Ghana.

EXECUTIVE SUMMARY

INTRODUCTION

From March to October 2022, the United States Agency for International Development (USAID) Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) #2 project conducted a sanitation and hygiene sector workforce capacity needs assessment (CNA) focused on sub-Saharan Africa and South and Southeast Asia. The CNA concentrated on rural on-site sanitation and hygiene and was designed to assess the human resources (HR) capacity needed to deliver safely managed area-wide sanitation (AWS) and basic hygiene sustainably and at scale. The overall assessment included six country-level CNAs, including in Ghana. The Ghana CNA was a limited review undertaken at the national level and included a desk review, key informant interviews, focus group discussions, and a validation workshop.

KEY FINDINGS

Overall, **the assessment found HR shortages for both sanitation and hygiene.** Environmental Health Officers (EHOs) form the biggest public sector workforce for sanitation and hygiene at national, regional, and local levels, but their number falls far short of the Government of Ghana (GOG) stipulated standard of 1:700, with this assessment indicating an average of over 6,000 people per EHO. There is also a noted shortage of Public Health Engineers (PHEs) at the Metropolitan, Municipal, and/or District Assembly (MMDA) level. As a result, and given their broad range of tasks, the EHO workforce is significantly overburdened. In rural areas, various functions are delivered by unregulated, uncontracted, and/or non-licensed informal actors; and certain functions, such as operation and maintenance and pit emptying, are considered primarily the responsibility of the household.

There are gaps in sanitation and hygiene HR planning, coordination, and prioritization, with sanitation and hygiene mandates and EHO workforce management spread across various ministries and institutions. The Office of the Head of Local Government Service (OHLGS) was found to undertake MMDA recruitment and postings with limited engagement with the Ministry of Sanitation and Water Resources (MSWR) and regional or district-level EHOs. A lack of financial resources to create relevant positions (e.g., for PHEs or more EHOs), combined with recruitment freezes dictated by the national level, further result in limited job availability. The assessment also found a gap in the diversity of available positions, with informants calling for the creation of new positions, such as around monitoring and evaluation (M&E), data science and information technology, business development, regulation, gender equality and social inclusion (GESI), and behavior change communication (BCC). Further sector restructuring and the development of a new National Sanitation Authority (NSA) to strengthen sector coordination and prioritization were foreseen but, at the time of the assessment, not yet finalized.

Sanitation and hygiene sector workforce conditions vary across regions, with the Northern, Greater Accra, and Ashanti regions having six times more EHOs than the Western North, Oti, and Ahafo regions. This split largely corresponds to the regions where there is higher development partner (DP) and/or (international) nongovernmental organization ([I]NGO) presence. Similarly, the competencies of EHOs in areas with DP and/or (I)NGO projects were found to be better than in those areas without projects. In all regions, the number of EHOs is higher in district capital areas than in the rural remote areas, partly due to staff not wanting to work in more rural (remote) areas. Overall, HR capacity was found to be affected by unattractive service and contract conditions and limited opportunities for in-service training and career development/progression, resulting in staff attrition. The projectized nature of the sector (both through DP/INGO projects and the private sector contract basis) also results in discontinuity of staffing and the subsequent loss of knowledge and institutional memory.

Gender equality of EHOs seems to be balanced at the district level (close to 50 percent women) but becomes increasingly unequal when moving to regional (15 percent women) or national levels (5 percent women). No formal volunteer system exists in the water, sanitation, and hygiene sector, but volunteers are used across projects (and by NGOs) to engage and mobilize communities and/or organize activities.

The private sector is still mostly informal in rural areas despite an increase in focus on market-based sanitation. Informal actors are often excluded from bidding for formal contracts. Some efforts are underway to formalize and certify artisans to create opportunities for engaging them, for example, through a GOG and United Nations Children’s Fund artisan certification program.

HR needs, supply, and training opportunities in sanitation and hygiene are mismatched, and there are missing skills and competencies. The assessment team noted that in terms of numbers, there is an adequate supply of trained HR emerging from various training institutions across the country. However, the job positions to employ them are not there, or not financed. Training institutes also need to continue to ensure up-to-date curricula, for example, around safely managed sanitation, and adequate numbers of professional trainers with knowledge on climate resilience, digital tools, GESI, and other emerging areas, to ensure that graduates emerge with the appropriate set of skills and competencies. In general, the overall diversity of skillsets of sanitation and hygiene professionals was found to be low, with gaps identified across the public sector, (in)formal private sector, DPs, and (I)NGOs.

RECOMMENDATIONS

Several high-level recommendations emerged, structured around primary stakeholder groups active in the sanitation and hygiene sectors: those engaged in Policy and Oversight, Training and Capacity Development, and Product and Service Delivery. One recommendation has been included, targeting stakeholders outside the sanitation and hygiene sector, referred to as “enabling influences.” (Section 7 provides the recommendations in a detailed table that incorporates timeframes and specific actors.)

INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT

1. Undertake routine (sub)national HR sector assessments and develop coordinated HR plans and standards

To increase an understanding of HR needs and inform a consolidated HR plan, the assessment team recommends undertaking a detailed HR capacity audit and developing standardized job descriptions and positions for the sector (inclusive of lower-skilled workers). This can be built on the existing public sector grade system and would require joint leadership between the MSWR, OHLGS, and the newly established NSA, once in place.

2. Advocate and coordinate to prioritize sanitation and hygiene job creation and fulfilment of the required functions

To attain the recommended EHO-to-population ratio (1:700) and increase overall public sector HR capacity to achieve safely managed sanitation and hygiene, including through the PHE class, the MSWR should mobilize funding and work with the OHLGS to rationalize staff distribution across the regions, ensuring that each district is adequately staffed. Establishment of the NSA can enhance the provision of sustained sanitation and hygiene services by coordinating actors, countering projectization, and coordinating capacity development.

INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT IN CONJUNCTION WITH PRODUCT AND SERVICE DELIVERY AGENTS

3. Improve sanitation and hygiene sector workforce conditions at the MMDA level

To address staff shortages, insufficient skills diversity, and overburdened staff, MMDAs will need to mobilize their own funding and increasingly work across departments (and their volunteer programs). MMDAs should also seek to recruit a diversified range of employees, including BCC specialists, digital monitoring specialists, and the new grade of Environmental Health Analyst. In addition, MMDAs may increase the availability of HR in construction by recognizing and allowing the informal private sector to take on smaller MMDA assignments, like repairs and rehabilitation.

4. Break down barriers to strengthen the private sector workforce in sanitation and hygiene

With limited financial resources and ability to create jobs, the MSWR and Ministry of Employment and Labor Relations should explore private sector roles and provide business development support for the private sector to increase the latter's investment in the sanitation and hygiene sectors. DPs and INGOs can support these activities by bringing in expertise, conducting market research, and supporting the private sector in finding their business potential. This includes providing a means for the informal sector to formalize through certification schemes (as has been already offered to some artisans).

INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT IN CONJUNCTION WITH TRAINING INSTITUTIONS AND SERVICE DELIVERY AGENTS

5. Strengthen and improve coordination and supply of sanitation and hygiene capacity development

To continue to ensure that the education and capacity development efforts meet the needs of and anticipated shifts in the sanitation and hygiene sectors, the MSWR should coordinate and strengthen the links between sector organizations and capacity development providers. Quality of capacity development offerings should be improved through sharing of open-source materials, upgrading of trainers, curricula, and equipment (e.g., in the Schools of Hygiene), and further development of diverse, professional learning opportunities, such as on-the-job training, short courses, and mentoring.

6. Develop specific competencies that were identified as gaps

The assessment team identified various competency gaps that should be considered in future capacity development efforts by DPs, INGOs, training institutes/universities, and others. These should be verified and addressed, including through actions undertaken under Recommendation 5. Competency and skills gaps were identified at the MMDA and national public sector levels for the (informal) private sector and for local NGOs, DPs, and INGOs. See Section 7 for details.

WIDER ENABLING INFLUENCES

7. Improve public sector remuneration, incentives, and career development

Despite the sector's funding deficiencies, the MSWR should develop a fair wage scheme for the sanitation and hygiene sector professionals that is equal to what is offered in other sectors. In addition, to counter the lack of interest to live in rural areas, the MSWR with the OHLGS should develop incentive packages (such as extra allowances or promotion opportunities) for those working in rural areas. Further work can also be done to professionalize the in-service training for sanitation and hygiene, learning from the health and education sectors.

I.0 INTRODUCTION

I.1 BACKGROUND AND OBJECTIVE OF THE ASSESSMENT

With less than a decade to go to reach Sustainable Development Goal (SDG) Target 6.2, to “by 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations,” many countries still lag significantly behind. Accelerating progress toward universal access to sanitation and hygiene requires addressing many systemic barriers and challenges, including those related to ensuring a sufficiently skilled and resourced workforce.

In this context, the United States Agency for International Development (USAID) Water, Sanitation, and Hygiene Partnerships and Learning for Sustainability (WASHPaLS) #2 Activity conducted a sanitation and hygiene sector workforce capacity needs assessment (CNA), focused on sub-Saharan Africa and South and Southeast Asia. The objectives of the assessment were twofold:

1. Understand the current and future human resources (HR) capacity needs and gaps across the sanitation and hygiene sectors and the dynamics at play in trying to address these needs; and
2. Identify priority actions and pathways for sector partners to address the identified needs and barriers, and capture these in a roadmap of actions and commitments.

In light of the identified lack of information in this space, the CNA concentrated on rural sanitation and hygiene and was designed to assess the HR capacity needed to deliver safely managed area-wide sanitation (AWS) and basic hygiene sustainably and at scale, with emphasis on on-site sanitation. The overall CNA included six country-level assessments to validate and complement initial findings from a global desk review and key informant interviews (KIIs) and to understand local dynamics. The assessment team developed a framework to guide the global and country assessments (see Annex I), which included important definitions, geographical area definitions, and a categorization of key functions deemed essential to perform sanitation and hygiene programming and service delivery, against which HR capacity could be assessed.

The country assessment was informed by four key questions guiding the overarching sector CNA:

1. What are the HR capacity gaps impeding sanitation and hygiene sector achievement of universal access to sustainable services?
2. What are the different modalities for sanitation and hygiene sector capacity development and to what extent have they contributed to achieving and sustaining the needed human capital?
3. What are the barriers and incentives to access, recruit, promote, and retain existing workforce capacity?
4. What are the recommended priority actions to address HR capacity gaps in the sanitation and hygiene sectors?

This report presents the findings and recommendations from the Ghana country-level CNA. It is aimed at informing national government and its country-level partners, including nongovernmental organizations (NGOs), training and education institutes, and development partners (DPs), of the identified capacity needs and HR-related challenges, and providing recommendations to address these needs.

I.2 METHODOLOGY

The assessment team conducted the CNA using the following methods: desk review, KIIs and focus group discussions (FGDs), and stakeholder workshops.

I.1.1 DESK REVIEW

The desk review provided background and contextual information on HR capacity in the country. A complete list of documents reviewed and links to websites is provided in the References section. Information obtained from the desk review includes progress toward SDG 6.2 targets, institutional context information, roles and responsibilities of the various actors involved in the sector, barriers and trends affecting HR, and labor market dynamics (including, for example, on youth unemployment, informal workforce, HR policies, and skill development programs). Key findings from the desk review are summarized in Section 2.

I.1.2 KEY INFORMANT INTERVIEWS/FOCUS GROUP DISCUSSIONS

Interviews were conducted with key sector stakeholders representing government, NGOs, civil society organizations (CSOs), service providers, DPs, and training institutions. In some cases, FGDs were held with institution management or leadership to provide an overview of the teams and capacities within their organization. HR officers of some institutions were engaged when available. Interviews provided insights on capacities and existing gaps, as well as on working conditions, opportunities for professional development and career progression, and the overall attractiveness of the sector. Through the KIs and stakeholder workshop, more than 40 stakeholders contributed to the assessment. Annex 2 presents a list of key stakeholder institutions interviewed.

I.1.3 STAKEHOLDER WORKSHOP

A stakeholder validation workshop was held September 28–29, 2022. The workshop provided an opportunity for the assessment team to validate the initial findings and gather additional information to refine outputs of the study. Participants had the opportunity to validate functions and responsibilities, gaps, and barriers. Participants also discussed opportunities for improving sector HR capacity and made some recommendations for the sector considering upcoming trends and sector priorities.

I.1.4 DATA TRIANGULATION

The team employed various triangulation methods to ensure reliability and validity of the data collected and to reduce investigator bias, including:

- *Using multiple data collection methods to ask similar questions:* The team ensured that multiple sources of data and a wide range of stakeholders were selected to allow for multiple viewpoints.
- *Interviewing more than one person in an organization:* The team had FGDs and spoke to various people in different positions to get multiple perspectives.
- *Using the workshop to test the results:* Participants representing different stakeholder groups participated in a two-day workshop to validate initial findings from the interviews and desk study.

I.3 LIMITATIONS OF THE COUNTRY ASSESSMENT

The assessment team had limited time and resources to conduct a detailed HR needs assessment and instead focused on the national level. For HR supply, the assessment focused mainly on the supply of Environmental Health Officers (EHOs) and engineering capacities for the sector, as well as the universities and institutions that deliver these capacities. There was limited information on numbers of other professionals in the sector beyond the EHOs.

2.0 SECTOR CONTEXT AND ENABLING ENVIRONMENT

2.1 COUNTRY PROGRESS TO SUSTAINABLE DEVELOPMENT GOALS

Even though access to sanitation remains a challenge for Ghana, significant progress has been made toward achieving universal coverage. Figures 1 and 2 provide a picture of the progress made toward achieving SDG 6.2.1 on sanitation and hygiene, as reported by the Joint Monitoring Programme (JMP).

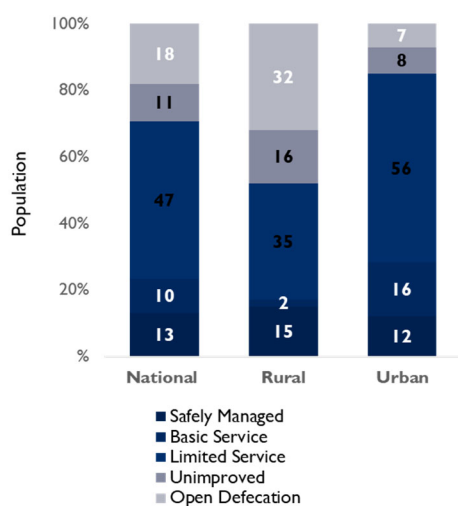


Figure 1. Ghana Sanitation Coverage Rates, JMP (2020)

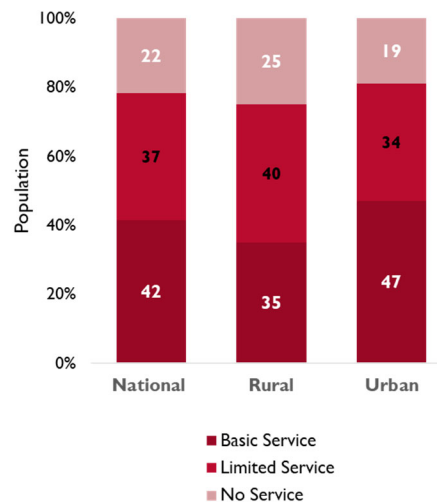


Figure 2. Ghana Hygiene Service Coverage Rates, JMP (2020)

Thirteen percent of the population has access to safely managed sanitation, 10 percent to basic sanitation services, while a significant 47 percent of the population use shared (limited) sanitation facilities. About 18 percent still practice open defecation, including 32 percent in rural areas. The 2021 Population and Housing Census in Ghana (Ghana Statistical Service 2022b) provides a breakdown of the types of facilities most often used (Figure 3).

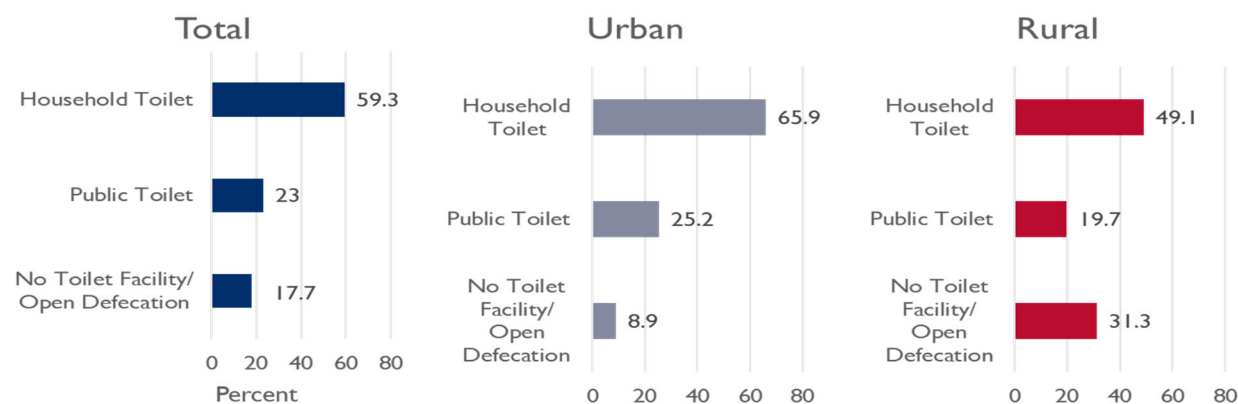


Figure 3. Access to Sanitation Facilities (Ghana Statistical Service 2022b)

The technologies widely used for rural sanitation have not evolved greatly since the 1990s: “basic” latrines and Kumasi ventilated improved pit (KVIP) latrine variations are the most widely promoted, though there have been some innovations/new standard options in recent years (United Nations Children’s Fund [UNICEF] 2020). More recently, biodigesters have become a common substructure for

household facilities, especially in the Greater Accra region. Approximately 130,250 households (representing 1.6 percent of the population) are now using biodigesters with 74,758 (57.4 percent) located in the Greater Accra region (Ghana Statistical Service 2022b). Table I provides a summary of technologies recommended for use by various entities. Most of the technologies are basic and do not require a high level of engineering skills to install and maintain; they can be installed, constructed, and/or maintained by artisans and community members with minimal supervision and support.

TABLE I. TECHNOLOGIES PROMOTED OR USED IN GHANA	
REFERENCE DOCUMENT	SANITATION TECHNOLOGY RECOMMENDED
Rural Sanitation Model and Strategy (RSMS) (Ministry of Local Government, Decentralization, and Rural Development [MLGDRD] 2011)	<ul style="list-style-type: none"> • Basic traditional latrine with available local materials • Simple washable, sealable slab with ring beam • Simple ventilated improved pit (VIP) latrine with slab, bamboo vent pipe (KVIP – dual pit (ideal for urban, schools, or communal areas) • Pour flush (off-set option) possible option where water is the preferred medium for water closet • EcoSan • Simple single pit Arborloo (short-term pit use with tree planting) • Twin pit Fossa Alterna (alternating pits allows full composting) – KVIP dual pit • Twin vault Skyloo incorporating urine diversion to reduce bulking and smell and providing an immediate source of fertilizer
National Environmental Sanitation Policy (MLGDRD 2010a)	Water closet and septic tank system, pour flush latrine, VIP, aqua privy, any other proven technologies recommended by the MLGDRD
National Environmental Sanitation Strategic Action Plan (NESSAP) (MLGDRD 2010b)	On-site and off-site systems: pit latrines, VIPs, KVIPs, water closet/septic tanks, aqua privies, variations of ecological sanitation facilities, and waterborne sewerage systems
Guidelines for Targeting the Poor and Vulnerable for Basic Sanitation Services in Ghana (Ministry of Sanitation and Water Resources [MSWR] 2018)	VIP, pour-flush, Aqua Privy, Digni-Loo, Biodigester
Community Water and Sanitation Agency (CWSA) Project Implementation Manual (CWSA 2014)	Basic pit latrines Water closet facilities

Nearly half of the population in Ghana has access to handwashing facilities, but only one in five households have water or other cleansing agents available at home (Ghana Statistical Service 2018). Access to handwashing facilities differs greatly between regions, with the Western and Central regions reaching up to 58 percent and the Upper West only reaching 26 percent. The most common handwashing facilities constructed in rural areas are the tippy-tap and veronica buckets (buckets with taps). In response to the COVID-19 pandemic, the government introduced a new policy that would seek to provide handwashing facilities across the country to ensure citizens changed their attitudes toward handwashing.

For schools and institutions, rain-harvesting infrastructure provides water for handwashing. This design is incorporated into the construction of the institutional sanitation facility.

2.2 SECTOR FUNCTIONS AND THE ACTORS THAT DELIVER THEM

Table 2 displays the (rural) sanitation and hygiene functions across the sector that were investigated across all countries and identifies the actors (i.e., employers) that fulfill these functions currently in Ghana. Organizational presence and mandates were explored against four geographies as explained in

Annex 1. In the context of Ghana, some functions were added to the original functional listing in Annex 1, and some national versus subnational functions were split out for additional clarity.

TABLE 2. ORGANIZATIONAL RESPONSIBILITIES ACROSS FUNCTIONS				
FUNCTION	RURAL REMOTE	RURAL ON ROAD	RURAL MIXED (PERI-URBAN)	URBAN
Policy, strategy, and coordination (national)	MSWR – general policy and strategy on environmental sanitation Relevant sector agencies, including CWSA			
	MLGDRD Office of the Head of Local Government Service (OHLGS): HR and recruitment, development of operational manual for sanitation departments, development of scheme of service, etc. Other ministries having a complementary or indirect role include the Ministry of Environment, Science, Technology, and Innovation (MESTI), Ministry of Health (MoH), Ministry of Education (MoE) (Ghana Education Service [GES], School Health Education Program [SHEP])			
Planning	National Development Planning Commission (NDPC), MSWR/Environmental Health and Sanitation Directorate (EHSD), Metropolitan, Municipal, and District Assemblies (MMDAs)			
Regulation (national, regional)	MESTI; Environmental Protection Agency; in charge of general environmental regulation and discharge Also, in charge of standard setting: Ghana Standards Authority and the Food and Drugs Authority MSWR/EHSD			
Regulation (District)	MMDAs			
Monitoring and evaluation (M&E) (national)	MSWR/EHSD, Ministry of Works and Housing (Research Statistics and Information Management unit)			
	MLGDRD			
	MoH/Ghana Health Service (information on disease outbreaks)			
	NDPC, MMDAs, OHLGS, Office of the Head of Civil Service (OHCS)			
M&E (regional)	Regional coordinating councils (RCCs) across 16 regions			
Advocacy/holding government to account	Media, CSOs, and NGOs Coalition of NGOs in water and sanitation [CONIWAS] with about 100 members nationwide consisting of both local and international NGOs); e.g., World Vision, Plan Ghana, WaterAid, UNICEF, Global Communities, Afram Plains Development Organisation (APDO), ProNet			
Oversight and support (provincial/local)	MSWR (at the national level)			
	CWSA and RCC/Regional Environment Health Unit of the RCC			RCC/Regional Environmental Health Unit of the RCC
	MMDA/District Environmental Health Unit of the MMDA		Municipality/Utility/District Environmental Health Unit of the MMDA	
Construction	Informal private sector (hired by household or NGO/government)	NGOs with private sector firms in informal settlements/informal private sector hired by household	Government programs, private sector/informal private sector hired by household	

TABLE 2. ORGANIZATIONAL RESPONSIBILITIES ACROSS FUNCTIONS

FUNCTION	RURAL REMOTE	RURAL ON ROAD	RURAL MIXED (PERI-URBAN)	URBAN
Community mobilization and community engagement	MSWR/EHSD (CWSA)			
	MLGDRD (Department of Community Development)			
	Assemblymembers, chiefs, other traditional leaders, private sector consultancies			
	MMDAs			
	CSOs/NGOs	NGOs/International Nongovernmental Organizations (INGOs)	INGOs	Utility, INGOs
Emptying and transport		Pit emptiers – often informal and unregulated private sector		
		MMDA pit emptying and institutional or public sector vacuum trucks		
	Local workmen (informal)	Local workmen	Local workmen	MMDAs acting as utilities (in the case of Accra, Tamale Metropolitan Assembly [TaMA], Greater Kumasi Metropolitan Area [GKMA])
Operation and maintenance (O&M) (including treatment and disposal)	Households			Households; MMDA utilities and private sector for sewerage networks and fecal sludge treatment plants
Research and technical design	Academic/Research Institutes (Kwame Nkrumah University of Science and Technology [KNUST], University of Ghana, technical universities across Ghana), technical institutes			
	NGOs, large private sector firms/small innovators (e.g., Duraplast – manufacturing firm working with Global Communities-developed Digni-Loo, small innovators [e.g., biofil]), other consultancy firms, etc.			
Business development	Ministry of Trade and Industry (stimulating private sector (indirect) engagement), Ministry of Employment and Labor Relations (meant to provide information through Ghana Labor Market Information Systems)			
	MSWR			
	Ghana Enterprises Agency (GEA) (working in collaboration with the Government of Ghana [GOG] under GOG/UNICEF-funded projects to train artisans in entrepreneurial skills)			
	Private sector and INGOs/DPs (through existing projects)			
Financing (including public-private partnership [PPP] coordination)	Financing (including PPP coordination); GOG – Ministry of Finance, MMDAs, DPs, private sector			

The lead ministry for implementation of sanitation and hygiene programs is the MSWR through the EHSD. In addition, activities of other ministries, departments, and agencies, as well as MMDAs affect the provision of sanitation and hygiene products and services in rural areas. Annex 3 presents an

institutional structure that further outlines how these agencies interrelate, but also illustrates the complexity of the sector setup.

In 2011, the GOG issued the RSMS as a district-led strategy to guide delivery of basic sanitation and hygiene services in rural areas and small towns. Much of the current programming around rural sanitation (especially community-led total sanitation [CLTS] approaches) is loosely based on this strategy. The strategy was anchored on five pillars: demand creation, supply of services, capacity building, M&E, and enabling environment (MLGDRD 2011). The RSMS outlines roles for the various stakeholders indicated in Table 3 but predates the latest round of sector restructuring. Some of these stakeholder roles and mandates and the related complexities linked to the restructuring are discussed below.

National-Level Actors and the RSMS

At the inception of the RSMS, the EHSD was under the MLGDRD. Now the EHSD is under the MSWR, which has taken over all of its functions. It is important to note that some of these functions could have been easily facilitated while the EHSD was under the MLGDRD, such as direct supervision and management of MMDA staff. But the MSWR has limited on-the-ground presence, while the MLGDRD maintains oversight over district-level actors and works with OHLGS for recruitment and staff development at the MMDA level.

With the move of the EHSD to the MSWR, responsibility for development of sanitation policy also has been transferred to the MSWR. Additionally, the MSWR, through the EHSD, now leads the process of implementing, monitoring, and evaluating the RSMS. The MLGDRD is still responsible for providing policy support in the implementation of Ghana's decentralization program and provides oversight on the activities of all RCCs and District Assemblies in Ghana. Given the large role of regional- and district-level actors in the rollout of the RSMS (see, for example, the multiple references to RCCs and MMDAs in Table 2), it is still important to have a role for the MLGDRD in rural sanitation and hygiene (for example, during the COVID-19 pandemic, the ministry was involved in the distribution of handwashing facilities for various MMDAs). Coordination between MSWR and MLGDRD is critical for effective implementation of the RSMS. Other ministries with roles defined in the RSMS are the Ministry of Finance and MoE/GES (through SHEP).

The Community Water and Sanitation Agency

CWSA is currently an agency under the MSWR, but before the latest restructuring operated under the then Ministry of Water Resources, Works, and Housing. CWSA is the national agency responsible for facilitating implementation of the National Community Water and Sanitation Program, which includes the provision of safe drinking water and related sanitation services. The RSMS proposed that CWSA would collaborate with EHSD in the implementation of sanitation and hygiene promotion interventions, while ensuring that CLTS and sanitation marketing are mainstreamed into CWSA policies and strategies (MLGDRD 2011). It was expected that the agency would contribute data to the M&E system, as well as support the dissemination of the RSMS document. In implementation, they facilitated projects that had water, sanitation, and hygiene (WASH) components. As noted in KIIs, currently the CWSA is transitioning toward a rural **water** utility and may have a more limited role in sanitation and hygiene provision moving forward. For example, the Extension Services Specialists who currently lead activities, such as sanitation and hygiene promotion, behavior change communication (BCC), and community mobilization, will be transitioned to Community Relations Officers (CROs) with responsibility for managing water systems and responding to customer complaints. The CROs will have a limited role in addressing sanitation in both schools and in communities. Key informants foresee the development of a

National Sanitation Authority (NSA)¹ that will take over the larger role that CWSA currently plays in facilitating the provision of rural sanitation and hygiene promotion. However, given the hiring freezes and a stop on development of new agencies announced in the government budget in November 2022, this may not happen in 2023 as anticipated.

The Local Government Service

The role of local government service (now OHLGS) is not clearly defined in the RSMS. However, while the RSMS recommends that District Assemblies should sign contracts for open defecation free (ODF) achievement with their regional ministers, it is the OHLGS that is responsible for performance evaluation of MMDAs, and thus it may be necessary to have ODF contracts between the MMDAs and the OHLGS or have OHLGS play a role in ODF contracts. In addition, as the OHLGS is directly responsible for the recruitment and management of all MMDA staff, they have a critical role to play in HR management for rural sanitation.

The RSMS also identifies DPs as key stakeholders for the delivery of sanitation and hygiene. Additional details on the roles of different sector partners and their contributions to the existing HR capacity are discussed in Section 3.

Households and the Informal Sector

As indicated in Table 3, particularly in rural areas, there are no formal public or private sector actors directly responsible for pit emptying and O&M, including treatment and disposal; these functions are carried out by households and the informal sector.

Coordination Committees

Given the multitude of actors engaged in sanitation and hygiene, Regional Inter-agency Coordinating Committees on Sanitation and District Inter-agency Coordinating Committees on Sanitation (DICCSs) provide important opportunities for essential coordination. Among others, DICCSs support ODF activities, particularly ODF verification. Currently, DICCSs are mainly present in MMDAs that are implementing the RSMS or the GOG/UNICEF programs, but there are plans to establish DICCSs in all MMDAs across the country. Questions arise, however, on how these can be sustainably funded outside of project/external funding.

2.3 LABOR MARKET DYNAMICS

According to the 2021 National Population and Housing Census, Ghana has a total workforce of about 11.5 million persons (Ghana Statistical Service 2022a), of which about 53 percent are female. General unemployment is about 13.4 percent, with youth unemployment around 19.7 percent. More than 75 percent of unemployed people are youth. The size of the informal workforce is about 77 percent of the total workforce, around 8.8 million people.

The World Bank (2022) reports that over 65 percent of formal jobs were categorized as “vulnerable employment.” They do not state what they mean by vulnerable employment, but it is assumed to mean that even those with formal jobs are either on contract basis or are workers that are underemployed (working less than they want).

The rural sanitation or hygiene sector is not recognized as a main industry for work in Ghana, and it is difficult to accurately determine the number of persons working directly in the sector. However, some related categories may be considered to generally include workers in the sanitation sector, particularly

¹ The MSWR is proposing establishment of an NSA, which is still at the stage of a cabinet memo.

urban sanitation. A Ghana Statistical Service report on employment in 2015 highlighted that about 35,943 persons are employed under the industry category, Water Supply, Sewerage, and Waste Management, representing 5.8 percent of industry workers (Ghana Statistical Service 2015). Similarly, 143,008 persons are employed under the services category, Human Health and Social Work, representing 5.3 percent of service workers.

Another World Bank report (Dadzie, Fumey, and Namara 2020) identifies agribusiness, **entrepreneurship, apprenticeship, construction**, tourism, and sports as key sectors that can offer increased employment opportunities for Ghanaian youth. The areas in bold indicate the sectors that could offer jobs to the youth to provide services in sanitation and hygiene.

3.0 SECTOR PARTNER ROLES AND EXISTING HUMAN RESOURCES

3.1 CURRENT SITUATION

Section 2.2 presented an overview of the key actors responsible for carrying out the functions to ensure the provision of sanitation and hygiene products and services. This section further discusses the roles and the available HR linked to these actors, grouped by public sector, volunteers, the private and informal sector, DPs, and NGOs.

3.1.1 THE ROLE OF THE PUBLIC SECTOR IN SANITATION AND HYGIENE

At the national level, the public sector is responsible for providing leadership, regulation, and overall policy direction, coordination and harmonization of sector activities, technical backstopping to the regional and MMDA-level structures, monitoring and data management, and mobilization of financial and human resources.

At the regional level, the public sector—mainly through the Regional Environmental Health Officers (REHOs)—are responsible for monitoring performance of the districts and technical backstopping where needed.

At the district level (MMDAs), the Environmental Health and Sanitation Unit (EHSU) is the main entity responsible for sanitation and hygiene. The EHSUs/EHOs were under MoH until 1994 when it moved to MLGRD. Currently, the EHSD/EHOs are under MSWR, but at the MMDA level the EHSUs/EHOs are still a unit under the District Department of Health (Republic of Ghana 2009). In practice, incomplete decentralization of the MoH affects the strength of the District Departments of Health, and EHSUs are sometimes managed under the central administration of the MMDA. In addition to the EHSU, HR for implementation of the RSMS are drawn from the District Health Management Team, District Works Department, Department of Social Welfare and Community Development, and SHEP. Other support units include the District Planning and Coordination Unit and the Finance and Budgeting Department.

The EHSD/EHSU has the Environmental Health Grade or Class (EHOs and Environmental Health Analysts [EHAs]) and the Public Health Engineer (PHE) Class. According to the 2014 Revised Scheme of Service for the OHLGS (Local Government Service 2014), objectives of the Environmental Health Grade include development and issuance of technical guidelines and advice, public education, M&E of services and facilities, and enforcement of compliance with standards of hygiene.

The structure and grades for the Environmental Health Grade are split into a professional class and a sub-professional class, each of these running along a position hierarchy. The professional grade (EHA) has a bachelor's degree in environmental health, environmental science, or a relevant discipline; while the sub-professional (EHO) grade has a diploma or certificate in environmental health. The Analyst grade requires a minimum of a Bachelor of Science degree, yet most of the current EHOs only have certificates and diplomas and were originally hired with these qualifications. The assessment team noted that the Analyst grade has yet to be fully operationalized, and there are some complexities in the conversion of EHOs into EHAs. While some EHOs have received the required bachelor's degrees, converting to the Analyst grade would require starting as an Assistant EHA at a lower pay grade. At the time of finalizing this report, Civil Service has started making the conversion, while keeping the grade level (e.g., Chief EHO would become Chief EHA).

PHEs have a similar set of objectives as the Environmental Health Grade but are expected to focus more on the technical aspects of environmental sanitation service delivery. Similar to EHAs and EHOs,

the PHE class is structured into professional and sub-professional classes. The professional class (Engineer) has a bachelor's degree in engineering, while the sub-professional (Technologists) class has a higher national diploma or other equivalent diploma.

Other staff in the district level include Planning Officers, Works Engineers, Finance Officers, Budget Officers, and so forth. These staff are in other departments such as Works, Education, Health, Social Welfare and Community Development, and Planning. While these other officers are not frontline sanitation workers, they may provide support to the EHSU/EHSD and some parts of the DICCSs where needed.

In practice, the assessment team noted that the numbers of PHEs are very limited at the MMDA level, where most of the staff are EHOs. This means that only EHOs monitor and evaluate the performance and utilization of WASH facilities without PHEs checking or guiding this process. EHOs may not necessarily have the requisite technical expertise to evaluate the performance of these facilities properly. In addition, there may be shortages of personnel to enforce compliance with engineering standards for environmental sanitation infrastructure and services.

EHOs, however, have a broad range of responsibilities. Activities expected to be undertaken by the EHOs based on the 2010 National Sanitation Policy and the NESSAP include:

- Vector and pest control, including control of insect infestation and of rodents;
- Inspection of food hygiene for prepared foods and eating and drinking establishments;
- Inspection of slaughtering facilities;
- Assurance of provision of market sanitation;
- Environmental sanitation education (through both national-level and local- or district-level programs);
- Sanitary inspection (including household premises) and enforcement;
- Maintenance of public open spaces;
- Disposal of the dead (including maintenance and inspection of cemeteries and crematoria); and
- Animal control.

Furthermore, the introduction of the RSMS and follow-up training of EHOs in CLTS resulted in EHOs taking more active roles in CLTS triggering and community mobilization for sanitation promotion and in post-ODF monitoring, and they are key personnel in the development of District Environmental Sanitation Strategic Action Plans. EHOs also are involved in donor-funded projects to deliver all community mobilization efforts. Multiple informants noted that EHOs risk being seriously overburdened.

Environmental Health Officers

Given that EHOs represent the biggest group of staff for (rural) sanitation and hygiene in Ghana, the assessment team sought to understand the situation of EHOs in more detail. Key highlights are presented in Box 1 and discussed in more detail below.

BOX 1. EHO SUMMARY DATA

- There are about 4,835 active EHOs.
- The EHO-to-population ratio is below the standard of 1:700.
- The Northern region has the highest number of EHO staff followed by Greater Accra and Ashanti regions.
- Most MMDA EHO teams range between 15–20 persons.
- More than a quarter (29.5%) of MMDAs have more than 20 EHOs.
- A smaller number (16.86%) of MMDAs have less than 10 EHOs.
- Very few (0.38%) MMDAs have less than 5 EHOs (e.g., a district with two staff in Oti region).

The assessment found an uneven distribution of EHOs across the regions with higher numbers of EHOs in Northern, Greater Accra, Ashanti, and Eastern regions. Also, the EHO-to-population ratios differ greatly across regions and fall well below the standard EHO-to-population ratio of 1:700 (Table 3).

TABLE 3. REGIONAL DISTRIBUTION OF ENVIRONMENTAL HEALTH OFFICERS (EHOS) (COLLECTED DATA)					
REGION	TOTAL REGIONAL EHO (REHO)	NUMBER OF DISTRICTS	DISTRICT EHO TOTAL	REGIONAL POPULATION	POPULATION PER EHO
Ahafo	3	6	113	564,668	4,997
Ashanti	6	43	636	5,440,463	8,554
Bono	4	12	241	1,208,649	5,015
Bono East	N/A	11	224	1,203,400	5,372
Central	6	22	279	2,859,821	10,250
Eastern	4	33	438	2,925,653	6,680
Greater Accra	N/A	29	682	5,455,692	8,000
North East	N/A	6	167	658,946	3,946
Northern	6	16	705	2,310,939	3,278
Oti	3	9	124	747,248	6,026
Savannah	N/A	7	149	653,266	4,384
Upper East	4	15	236	1,301,226	5,514
Upper West	6	11	186	901,502	4,847
Volta	10	18	341	1,659,040	4,865
Western	2	14	201	2,060,585	10,252
Western North	5	9	110	880,921	8,008

Overall, there is more staff available at the national level. Staff numbers are fewer at the subnational levels. Even though EHO recruitment is centralized at the OHLGS, and staff are expected to be distributed to different parts of the country, most people prefer to work in regional or district capitals. EHOs posted to the zonal councils will often stay at the district capital and visit communities and area councils as and when needed. Within each region, the maximum numbers of EHOs are typically found either at the regional or district capitals. For example, the TaMA (capital of Northern Region) has 146 EHOs, while GKMA has 110 EHOs. Combined, the Greater Accra Metropolitan Area (GAMA) has a total of 148 EHOs. Comparatively, remote districts have the smallest numbers of staff. For example, in the newly formed Guan district in Oti region, only two EHOs support a population of more than 28,238, or five EHOs in Tempene district (Upper East region) support a population of 86,993. The limited staff in the remote rural areas is due mainly to the lack of development and amenities. Some staff, when posted to remote areas, leave their families in the cities or their previous duty stations, and have to regularly go back to visit their families.

Gender distribution of EHOs is generally balanced at the district level, but there is gender disparity at regional and national levels (Figure 4). Female EHO staff numbers decline from an

average of close to 50 percent at the district level to less than 15 percent at the regional level to less than 5 percent at the national level. Eight districts had no female EHO staff. An outlier at the district level is TaMA, where females comprise 82 percent of the staff. A potential explanation is that females who are trained in Tamale and established their families there also want to stay in that area. On the other hand, for districts in the Western North and Oti regions, the total number of females represented are 23 percent and 25 percent, respectively.

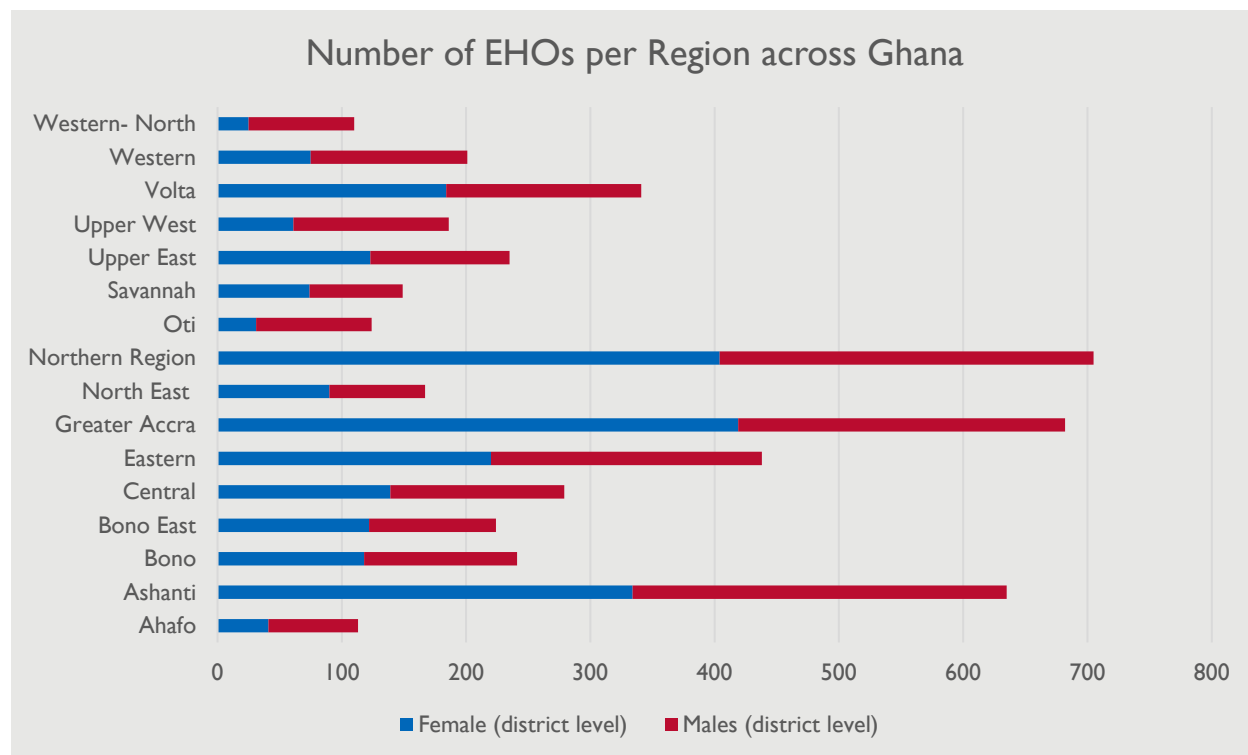


Figure 4. Geographic Distribution of EHOs per Region (Compiled from Data Collected)

Lastly, **EHO attrition is high (see Annex 4)**. For EHOs who are frontline workers, there are other opportunities in the MoH (including port health, hospitals, veterinary services, and other institutions that require the services of EHOs). The remuneration, other benefits, and/or conditions tend to be better in the health sector than in the sanitation sector. EHOs also sometimes leave for the private or NGO sectors due to better working conditions.

3.1.2 THE ROLE OF VOLUNTEERS IN SANITATION AND HYGIENE

Volunteerism is encouraged by implementers as part of donor-funded projects' community mobilization activities for sanitation and hygiene delivery, but there is no formal extension program through which sanitation/hygiene projects work. For some development projects, there are community-based volunteers and community members that volunteer their time to support project activities actively. For example, when it comes to managing small town water systems or boreholes with hand pumps, volunteers are selected to form water and sanitation management teams and water and sanitation committees. The Ghana MoH also has trained community health volunteers to support the promotion of primary health care.

Community entry activities usually involve meetings with chiefs and community leaders, as well as community members. As part of engaging the community, natural leaders and opinion leaders are often selected to support and drive the communities to achieve ODF status. These are not formal roles that

receive a salary from government, and volunteers do this on their own time. Some projects, such as the USAID/Water for Health project implemented by Global Communities, train natural leaders (more than 6,000 trained) to reinforce messages and promote latrine construction. Other projects (e.g., the GOG/UNICEF projects) also train community technical volunteers to support the construction of facilities within their communities. Generally, community members are also encouraged to volunteer their time to support the project. The following indicates some of the areas in which community volunteers provide support:

- Community leaders support community engagement and follow-up (natural leaders, opinion leaders, traditional leaders).
- Households are responsible for constructing their own facilities (under CLTS) with technical volunteers supporting with the construction of facilities.
- Community members use the *nnoboa* (a traditional form of cooperation through reciprocal labor aid and mutual support/communal labor) system to construct latrines for other members. A day per week is set aside for construction of facilities.
- When needed, community members also volunteer to construct toilets for those less able to do so (i.e., vulnerable community members).

Key informants indicated that there is potential to build on the existing communal volunteerism spirit (the *nnoboa*) because it helps to achieve results faster, especially since the volunteers are within the communities, understand the communities better, and can support with follow-up after project staff leave. Others highlighted that it would be beneficial to explore learning and experiences from the formal health volunteer extension systems under MoH as it is more formally structured and has fixed community health volunteers, rather than alternating volunteers; it also develops needed capacity and provides a potential incentive for the volunteers.

Some key informants expressed worries about the use and sustainability of volunteers, especially beyond short-term engagement. The fact that they are not paid means they will move and find work in other places. Other concerns were volunteers' lack of requisite skills to deliver the work. To create sustainability, some donors and NGOs working on projects in the communities are considering upgrading the volunteers into artisans or training them in sales and marketing to establish their own business.

Apart from the traditional role played by community volunteers, organizations such as Rotary International and the Red Cross Society have a corps of volunteers within their project communities that are engaged to support their projects, mainly with community mobilization for sanitation and hygiene promotion. Rotary International also has professional members that dedicate their time and resources to support projects within the communities. Rotary volunteers are not paid, but their transportation and accommodation costs are compensated. The Rotary International volunteers usually work according to their own time and pace, but when there is a timebound project, they have to engage a project manager or staff formally to get the project moving to achieve project results on time. The Red Cross Society has various volunteers across the country who support with sanitation promotion activities where needed. For construction activities, private contractors are hired.

3.1.3 THE ROLE OF THE PRIVATE AND INFORMAL SECTOR

Roles of the formal private sector, as identified by the stakeholders during interviews and confirmed during the stakeholder workshop, include design and construction, research, advocacy, financing, and lobbying, and are provided through various specializations, including BCC specialists, engineers, planning professionals, and sanitation finance experts.

The role of the informal sector (e.g., artisans, masons) in sanitation is in construction (and possibly maintenance) of household latrines and in the more urban areas also pit emptying and transport of fecal

sludge. However, the sector is not very attractive for private and small businesses because of low investment (i.e., low government funding for projects, lack of household subsidies or project-based subsidies). Many sanitation entrepreneurs or small and informal businesses go into solid waste management instead. Several DPs are working to strengthen the business environment for market-based sanitation. For example, UNICEF is working with the GEA on stimulating the development of small and medium enterprises (SMEs) in sanitation and is in the process of developing a fund to support the SME sector. USAID also has programs to strengthen the sanitation market, and iDE works in Northern Ghana through its SamaSama program. One of the most pressing needs is capital for businesses. If small businesses do not have capital to be functional, they cannot respond to work opportunities. For example, local hardware store owners were found to not have the capital to innovate, test, and bring new products to the market.

Latrine artisans experience several additional challenges, including:

- Vulnerability and job instability (especially when based on projects);
- Limited household demand in some areas;
- Limited knowledge of how to properly construct latrines (for example, those who have not received any training from a project or those who have been trained through technical and vocational education and training [TVET] centers but lack knowledge on sanitation technologies and CLTS);
- Lack of business acumen, marketing (market analysis), supply chain management, negotiation, and basic financing and accounting skills; and
- Restriction from contracts with MMDAs as they lack formal qualifications (learn through apprenticeships) and remain unregistered.

Key informants see an opportunity for artisans to take on a larger role in constructing the needed sanitation facilities and highlighted that some efforts have been taken to support, upskill, and professionalize artisans. Some projects—managed by the government, donors, and NGOs—are training artisans on how to construct latrines. These trainings are often combined with sanitation marketing and entrepreneurial skills. Two interviewed NGOs indicated that they had each trained more than 400 artisans through their projects within the past couple of years (and more than 1,000 artisans over the past 30 years). However, the careers of such trained masons are not generally tracked by those providing the trainings, making it hard to assess the longer-term impact.

GOG and UNICEF are developing a licensed artisan program and certification scheme where artisans—based on the level of certified work done—could rise through the ranks to become highly qualified or chief artisans (see Box 2).

The push to achieve the SDGs is one way to attract new HR for sanitation. A recent study (GOG and UNICEF Unpublished) indicated that Ghana requires more than 400,000 toilets per year to meet the SDG goals by 2030. Currently, all projects combined are only producing a little over 50,000 toilets annually. When issues such as demand creation and financing are addressed, a corresponding workforce is needed to construct the desired facilities. Gaps in fecal sludge management also represent an opportunity to develop HR, especially in the private sector.

BOX 2. CERTIFICATION OF ARTISANS (GOG-UNICEF PROGRAM)

The initial certification will be based on training programs undertaken by selected NGOs or training organizations. Following these initial trainings, artisans will be certified to construct latrines by the District Quality Assurance Team (made up of EHOs and the District Works Engineer), and these MMDA staff will inspect and undertake quality assurance of the work done. The artisans can then progress to senior certified artisans, and so on, similar to grades in career progression based on the quality of work and numbers of latrines constructed. The benefit of such a program for artisans is to improve their skills continuously and provide more opportunities for them either with the MMDAs or under other projects. Such artisans may need support in the

BOX 2. CERTIFICATION OF ARTISANS (GOG-UNICEF PROGRAM)

form of loans and additional training. For example, the artisans are initially trained in basic technologies like KVIP and VIP and based on their performance and adherence to standards as certified by EHOs, they will receive further training to upgrade their skills so that they can construct septic tanks and biodigesters or other types of facilities. They are expected to be supported to move to the level where they can operate their own enterprise, employing people to market their services.

Further development of the capacities of artisans and perhaps developing registered cooperatives may be a way of positioning artisans to be qualified for jobs within the MMDAs. Other opportunities to further develop the sanitation-related skills of artisans and masons include those offered by professional bodies (such as the Ghana Institution of Engineering) to register and further train craftsmen and from the Skills Development Fund of the Council for Vocational and Technical Education under the auspices of donors such as the World Bank.

Other informal sector actors are engaged in pit emptying and transport of fecal sludge (especially in urban areas). These include mostly drivers or truck owners who provide services to households. They remain mainly unregulated, though some guidelines have been developed by the MSWR. The main challenge faced is the lack of occupational health and safety knowledge around pit emptying. Most of these actors work without appropriate personal protective equipment. They have to travel long distances to find appropriate disposal sites and face the challenges of old trucks, as most of these actors can only afford secondhand trucks.

For the private sector involved in consultancy, it was noted that they have some weaknesses in organizational management, accounting, and HR management that affect their businesses. Private sector consultancy is highly dependent on the marketing and promotion of sanitation, usually implemented under DP and NGO projects. Projects tend to support marketing and promotion of sanitation, which helps the private sector get clients, but outside of projects, private sector consultancies cannot continue to undertake the level of large-scale promotion and marketing that projects support. This affects their businesses and the number of people they can employ.

3.1.4 THE ROLE OF DEVELOPMENT PARTNERS

Numerous DPs contribute to the sanitation and hygiene sectors in Ghana. These include bilateral partners such as Embassy of Kingdom of the Netherlands, Global Affairs Canada, USAID, Danish International Development Agency, and the German International Development Bank (KfW); multilateral partners such as the World Bank, African Development Bank, and European Union; United Nations agencies such as UNICEF, World Health Organization (WHO), and United Nations Development Programme; and a number of INGOs such as Global Communities, WaterAid, PLAN, and World Vision.

KIIs noted that in many ways, donor-funded projects are what attract and keep the sector HR engaged. DPs provide technical assistance, funding support through loans and grants, and support in sector learning (through working groups and various knowledge management platforms and sector reviews). DPs employ various HR to work directly in their organizations, on projects, or where needed to provide technical assistance to government organizations. Some of the HR employed by DPs include BCC Specialists, Water and Sanitation Specialists, Sanitation Financing Experts, Business Development Specialists, M&E Specialists, Environmental and Social Safeguards Specialists, and other types of specialists acting as program or project officers or project managers. DPs also pay for or provide secondments to GOG as part of ongoing projects (Box 3).

BOX 3. EXAMPLES OF DPS THAT PAY FOR HR POSITIONS	
GOG-UNICEF project (current)	UNICEF pays five regional consultants who provide technical assistance to regional officers at the RCCs, and about 30 district resource persons who support EHOs at the district level.
GAMA Sanitation and Water Project by World Bank (2021–present)	The project has engaged an Assistant Public Health/Sanitation Engineers and other specialists to support the government in the delivery of sanitation for low-income urban areas. They have hired staff to support MMDAs in Accra and Kumasi (eight and nine engineers) in providing oversight and quality assurance of latrines constructed.

KIIs also suggested that without these projects, most NGOs would not be viable. Currently, most projects in rural sanitation are financed or led by INGOs or DPs. Most professionals (e.g., project managers, planners, engineers) are hired when there are ongoing projects to be implemented. When there are no projects, resources are limited, and many (project) staff are laid off. At the same time, the private sector relies on the government for projects and hire their staff on a contract (project) basis. With few government projects in the rural sanitation sector, this is also reliant on donor-funded projects. The limitation is that when these projects cease, HR support also ceases, and sanitation cannot be delivered at the same pace.

Additionally, DPs engage trainers (including NGOs and consultants) to train artisans in construction of sanitation facilities and EHOs in CLTS. Some organizations involved in training include TREND, APDO, ProNET, and SkyFox who have built up significant experience over the years. KIIs and discussions from the workshop confirmed that the presence of donor programs in MMDAs had a positive impact on EHOs in those districts. These EHOs were said to have better skills and capacity and more confidence as a result of training received through DPs and other project partners. EHOs in districts that do not have active projects often lack some skills (e.g., CLTS processes, M&E), as they do not receive project-related training and capacity development.

3.1.5 THE ROLE OF NGOS

Similar to the role of DPs, NGOs in the sanitation and hygiene sectors have been involved in many areas, including:

- **Advocacy:** NGOs advocate for improved access to sanitation and hygiene for communities and hold the government accountable for commitments made to the sector.
- **Resource mobilization:** NGOs raise funds (mainly from donors) to undertake community-level interventions.
- **Project implementation:** NGOs are often partner organizations for DPs in program and project implementation.
- **Community mobilization:** DPs often use local NGOs to engage community members as part of sanitation delivery activities. In recent times, however, with the rollout of the RSMS CLTS programs, DPs such as UNICEF and the World Bank have increasingly started to use EHOs in various District Assemblies to undertake community mobilization and triggering of communities as part of CLTS, limiting local NGO engagement in this area.
- **Training (community members, artisans, etc.):** NGOs are often trained to train artisans and community members.
- **Knowledge management:** NGOs monitor projects and progress, and capture lessons learned for future programs.

Local NGOs usually engage BCC or community mobilization specialists for their community-level activities (for local NGOs, these may be former EHOs or community development officers). Other staff

engaged by NGOs may include business development officers, sanitation marketing officers, M&E officers, and gender officers.

A network of water and sanitation NGOs known as CONIWAS has over 100 registered NGOs across the country (Figure 5). CONIWAS was established in 2001 as an umbrella CSO to contribute to water resources management and sustainable provision of WASH service promotion in Ghana. CONIWAS focuses on advocacy, capacity development, and monitoring, and has established itself as a major and relevant sector player in the WASH sector in Ghana.

In general, most CONIWAS-member NGOs are based in Accra (where most INGOs also have their headquarters) or in Tamale (Figure 5). Most local NGOs do not have the capacity to attract local resources/raise funds, thus relying on external resources from donor-funded projects. If resources and projects are not available, local NGOs struggle with funds and cannot maintain their HR. For this and other reasons related largely to working conditions and remuneration packages, there is a high level of staff attrition to INGOs and other international organizations.

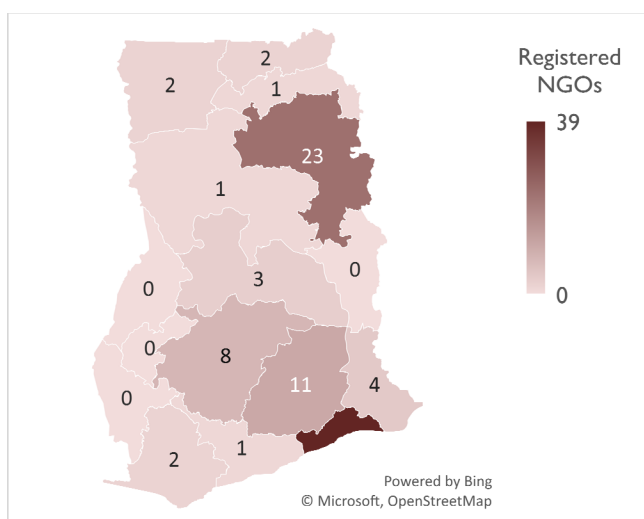


Figure 5. Geographic Distribution of CONIWAS Members across the Country

Interestingly, Klls made the point that while the public sanitation and hygiene sectors are dominated by EHOs who have a relatively singular skill set, NGOs employ practitioners from different backgrounds (including HR management, geology/hydrogeology, biological science, and publishing) to manage similar work (e.g., community mobilization, project management). Their unique competencies are unrecognized and underutilized in the sector.

4.0 ANALYSIS OF SHORTAGES AND GAPS

4.1 HUMAN RESOURCE SHORTAGES

The 2022 Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) report indicates that for the sanitation and hygiene sectors, Ghana has less than 50 percent² of the needed HR to deliver its plans (WHO 2022), and reveals no progress compared to the GLAAS 2019 data. The only area the GLAAS report identified as having slightly higher levels of HR was in community mobilization, which had 50–74 percent of the HR needed. Hence, Ghana seems to still be short of all professionals needed to deliver both sanitation and hygiene.

During the stakeholder workshop, a participatory mapping exercise was conducted (Table 4) against the full set of sanitation and hygiene functions to get a more granular impression of the shortages. This exercise provided a slightly more positive picture, with most functions scoring between 51–95 percent of the needed HR to deliver sanitation and hygiene services. The reasons for this difference are not fully understood but may be due to different actors being involved in identifying the shortages and the GLAAS report providing overall estimates, while this exercise distinguished between the different rural and urban geographies.

Generally, this assessment found larger HR shortages (i.e., fewer human resources) in hygiene than for the sanitation sector, especially in the policy, strategy, and coordination function. For the sanitation sector, the national- and district-level regulation and monitoring stood out as functions with significant HR shortages. For pit emptying and O&M in rural areas, it was noted there is limited to no HR available. Notably, in no area did workshop participants perceive that there was sufficient HR capacity.




TABLE 4. MAPPING OF EXISTING HUMAN RESOURCES (SOURCE: STAKEHOLDER WORKSHOP, WASHPALS #2 CNA)

FUNCTIONS	SANITATION				HYGIENE			
	URBAN	PERI-URBAN	RURAL ON ROAD	RURAL-REMOTE	URBAN	PERI-URBAN	RURAL ON ROAD	RURAL-REMOTE
Policy, strategy, coordination (national level)	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red	Red
Regulation (national level)	Red	Red	Red	Red	Red	Red	Red	Red
Monitoring (national level)	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Regulation (district level)	Red	Red	Red	Red	Red	Red	Red	Red
Monitoring (district level)	Red	Red	Red	Red	Red	Red	Red	Red

² GLAAS reports in percentages: less than 50% of HR needed, between 50–74% of HR needed, between 75–94% of HR needed, and between 95–100% of HR needed.

TABLE 4. MAPPING OF EXISTING HUMAN RESOURCES (SOURCE: STAKEHOLDER WORKSHOP, WASHPALS #2 CNA)

FUNCTIONS	SANITATION				HYGIENE			
	URBAN	PERI-URBAN	RURAL ON ROAD	RURAL-REMOTE	URBAN	PERI-URBAN	RURAL ON ROAD	RURAL-REMOTE
Management/oversight and external support (provincial, local government, municipality)								
Design and construction								
Sanitation only – Empty and transport					NA	NA	NA	NA
O&M (includes treatment and reuse)								
Community engagement and mobilization (participation)								
Business development								
Research and design								

-  Sufficient human resource to meet current demand (to reach SDG/national targets)
-  51–95 percent human resources to meet current demand (to reach SDG/national targets)
-  Under 50 percent of what is needed to meet current demand (to reach SDG/national targets)

4.2 HUMAN RESOURCE GAPS

In addition to actual shortages in numbers of HR responsible for various functions, the assessment team identified several key competency gaps both in technical and transferable³ skills and knowledge that affect how well the functions are carried out, or if at all. These are provided in Annex 5, together with an overview of the trends that are likely to affect future HR requirements, such as climate change and digitalization. Gap areas identified during the KIIs were validated during the stakeholder workshop. The table in Annex 5 highlights by function the gaps identified as well as the types of jobs and expected competencies needed to deliver on SDGs 6.2.1 and 6.2.2. This section discusses key takeaways from this exercise and the discussion on trends.

The following functional areas were identified as having shortfalls that needed attention, particularly in the public sector: policy development, M&E, engineering and technical skills, community mobilization and behavior change, and sanitation marketing and business development.

³ Technical (knowledge and skills) refers to the knowledge and skills a person has in a specific field, whereas transferable (knowledge and skills) refers to knowledge and skills that a person may need for their job but that are not specific to that field only and are applicable across multiple jobs (e.g., computer skills, relationship management, project management, interactive skills).

Regarding policy development, it was noted that apart from EHOs and PHEs, other categories of staff to support policymaking are lacking, including a policy analyst or experts, research and development experts, and legal experts.

In the discussion of trends, stakeholders noted a likely need for policy review or new policy development in response to sector developments, including to enable increased HR capacity. As noted by one key informant: *If we don't have our framework and guidelines tilted to those areas [e.g., post-containment, climate change and resilience] you will not get a lot of focus on it but if the policies and guidelines change, then the HR will emerge in those areas* (KII, NGO and Consultancy).

MSWR, with support from UNICEF, is planning changes to the current Environmental Sanitation Policy (MLGDRD 2010a). A consultant team has been hired to facilitate the discussions leading to the review and update of the existing policy. Beyond the need for policy experts and analysts, legal experts, and professionals working on policy dissemination and rollout, WASH personnel, political heads, and management of institutions, such as NDPC, OHLGS, and MMDAs, will likely all require further training and capacity development in line with the new policy, and possibly similar changes to other policies.

A key policy initiative that also may affect sector HR is the Ghana Beyond Aid Charter (Office of Senior Minister 2019) through which the country seeks to be self-reliant. In time, this may reduce the inflow of funds and support from DPs and could have a detrimental impact on HR in the sector given the important role of DPs currently (see Section 3.1.4).

For M&E, several competency gaps were identified, including a lack of or inadequate skills in data management, planning, budgeting, and geographic information system (GIS) and mapping skills. To address these gaps, especially at the MMDA level, apart from skills-building of existing staff, jobs such as sanitation M&E specialist, sanitation data analyst, and GIS expert or a combination thereof, and compliance and monitoring officer were also suggested.

Key informants further stressed the importance for Ghana to increasingly use digital data for planning, decision-making, monitoring and support, and timely reporting. Examples of digital systems in the sector include Basic Sanitation Information Systems, which is used to capture information on basic sanitation and is used extensively under GOG-UNICEF rural sanitation projects. There also is the Expanded Sanitary Inspections Compliance Application for monitoring and mobile money platforms for mobilization of household savings, and the planned Sector Information Systems for data management and planning. Digitalization is expected to have a major impact on sanitation delivery in the medium to long term, and in the short-term information technology (IT) professionals and data managers are required to provide support for the sector. These professionals could be employed at the MMDA and national levels. Current professionals also are expected to be trained in the use of IT and digital technologies, as the required skills are not yet widely present. Some areas that key informants suggested would need digital systems and professionals with the associated skills include HR management, digital imagery for sanitation and hygiene assessment of wider areas, and M&E of sanitation programs.

Stakeholders identified a limitation in the capacity of sub-professionals for the technical grade (i.e., Technologists) in engineering and technical skills. In response, some DPs are training EHOs on additional technical skills that will enable them to, for example, supervise the construction of latrines in rural areas. Similarly, a key informant noted that *the curriculum in the Schools of Hygiene is being adjusted to include training on construction of facilities and review of technical drawing for EHOs* (KII, national public sector). For urban areas, projects are able to employ additional engineers to inspect and certify works.

Stakeholders noted that **safely managed sanitation and associated technologies require new staff capacities.** Currently, there is an overwhelming focus on containment because this is the immediate and present need in most rural communities, and the current policy environment does not

invite or require the sector to think beyond containment. However, as communities grow and become more densely populated, simply replacing full pits may not always be an option. Similarly, different geographic, soil, and climate-related conditions may require different containment technologies and/or a stronger focus on emptying, transport, treatment, and disposal/reuse, as will the growing focus on waste-to-resource opportunities, like the use of biodigesters. Higher complexity and variation in technologies applied will likely require higher levels of qualification and possibly increased need for engineers. The increasing demand for aspirational toilet facilities is another opportunity to develop HR capacities in these more advanced solutions.

Workshop participants expected engineers, technicians, EHOs, artisans, and masons to require new or updated skills and training. Key informants indicated that this would need to be achieved through curriculum updates and practical training programs in the various training institutions such as universities, Schools of Hygiene, and TVETs.

For community mobilization, the suggestion was to engage more BCC experts in the sector (across all levels), with the following expertise: sociology, behavioral change science/psychology, and marketing. In addition, competencies that were seen to be lacking also included CLTS; knowledge on technologies; sanitation financing; how to reach the poor and vulnerable; targeting, planning, and budgeting; project management; and enforcement.

Regarding gender equality and social inclusion (GESI), stakeholders noted that, overall, sector actors require increased understanding and competencies in this area, and that GESI issues were promoted more by NGOs or DPs than by staff. The private and public sectors need to capacitate their staff to understand and incorporate GESI considerations. Some additional HR that will be needed are GESI officers in the public sector as well as gender advocates in the NGO sectors. Key informants further indicated the need to ensure lecturers and trainers include GESI in their sanitation courses.

Key informants highlighted the need for the sector to better appreciate the **O&M function** and to assign staff to ensure O&M of facilities, as this was one of the key areas where there was a shortage of staff and adequate planning and resources. Households are mostly left to their own devices but do require support and guidance at times.

Regarding business development, it was noted that the public sector is not able to provide adequate support for private sector actors (both large-scale and informal), especially in the areas of business development and support for private sector participation. For the private sector, key informants identified the need for business development managers. The skills missing in the (informal) private sector are business acumen, marketing and sales, financial management (and accounting), and supply chain management. For those private sector organizations that grow, HR and organization management are also needed. For the informal sector, key informants identified improved technical skills (i.e., knowledge on sanitation products/technologies) as well as negotiation and marketing skills as key competencies required.

Together with the HR shortages presented in Section 4.1, many of the identified skills gaps likely are linked to the finding that there is a limited diversity of jobs in the MMDAs beyond the frontline EHO/community mobilization staff. MMDAs are expected to perform a broad range of functions that require a more diverse range of skills to implement. Thus, the existing EHO/community mobilization staff are responsible for a wide variety of tasks, whether they are trained for them or not.

Looking ahead, a few other trends were also felt likely to impact sanitation and hygiene HR requirements:

Climate change is expected to have a major impact on sanitation service delivery in the long term and required skills and competencies in the short to medium term. Professionals

such as engineers and artisans ought to be trained to build more resilient sanitation infrastructure to deal with impacts of climate change, such as extended and more frequent flooding. Also, the curricula for various training institutions ought to be updated to incorporate different dimensions of climate change (e.g., temperature variations, drought, and flooding) in sanitation courses. Key informants also recommended the review of guidance documents and manuals (by GOG, UNICEF, and others) to include WASH technologies in emergencies. The OHLGS indicated that addressing issues of climate change may not necessarily mean hiring climate experts, but developing the capacity of existing staff on issues around climate change and how it may impact the sector, including the adjustments that might be needed to existing sanitation technologies **for rural areas**.

Increasing urbanization raises two issues: large-scale projects are focusing more on urban areas, and urbanization introduces more complexity in terms of access to sanitation.

Projects such as GAMA/GKMA, Greater Accra Sustainable Sanitation and Livelihood Improvement Project (GASSLIP), Greater Accra Resilient and Integrated Development, and other large urban projects have combined donor funding of more than United States dollars (USD) 500 million. These projects require staff and consultants to provide services and they tend to attract a large number of HR to the urban space.

This complexity is particularly extreme for low-income urban areas where access to sanitation is low, population densities are high, and the housing characteristics do not provide sufficient space for household-level sanitation facilities. Key informants indicated that professionals at the local authorities require capacity development to respond to the challenges of providing sanitation in an increasingly urbanized context. Professionals identified to be part of this increased urban sanitation delivery include Urban Planners/Planning Officers (development planners), Spatial Planners, and Engineers.

During the height of the COVID-19 pandemic, WASH received additional attention because of the requirements for handwashing and personal hygiene, which led the government to commit to paying the water bills for domestic consumers and providing handwashing facilities to institutions and public places across the country. This new development brought about significant technological innovations in handwashing facilities and equipment, providing artisans with many jobs. It also created a boost for women in soap making (one of the training areas offered by NGOs such as APDO for women in the communities). In the discussion regarding trends, stakeholders highlighted the occurrence of pandemics as a risk that required readiness of the existing sanitation and hygiene HR, but also as an opportunity for further job creation, as occurred during COVID-19.

5.0 CURRENT BARRIERS AND FUTURE OPPORTUNITIES

The assessment sought to understand the different dynamics and barriers affecting the current HR shortages and gaps presented in Section 4. These are described in Section 5.1. However, building on the discussions on trends and future HR needs, participants in the stakeholder workshop were also asked to undertake an exercise to project future HR capacities and to understand the steps required to realize these projections. This discussion is described in Section 5.2.

5.1 BARRIERS TO HUMAN RESOURCE DEVELOPMENT

Ghana reported to GLAAS (, 2022) the extent (low, moderate and high) to which certain factors are a constraint to HR development (Table 5).

FACTOR/CONSTRAINT	SANITATION	HYGIENE
Financial resources available for staff (salaries, benefits, pensions, etc.)	Moderate	Moderate
Insufficient education/training programs or courses to meet demand	Low or no constraint	Low or no constraint
Lack of awareness of WASH job opportunities	Low or no constraint	Low or no constraint
Insufficient competencies (skills and knowledge) of staff to perform duties	Low or no constraint	Low or no constraint
Skilled workers do not want to live and work in rural areas of the country	Moderate	Moderate

The GLAAS Country Survey Report notes that “Enough graduates are trained by the institutions annually, but the problem lies in the inability of the sector to absorb the graduates. Over 50 percent [of graduates] end up finding jobs in other non-WASH sectors” (WHO 2022).

The assessment team supports this argument, as it found, for example, that the supply of skilled graduates should be sufficient to meet the needs of EHOs, but they are not being hired. This includes graduates from universities and private training institutions. At the university level, more than 2,300 students graduate annually in relevant fields,⁴ and 450 graduate per year from TVETs.⁵

A longstanding challenge has been the delay in employment for graduates of the three Schools of Hygiene. Following numerous protests (Graphic Online 2019), graduates who had completed school between 2010–2019 were employed by the OHLGS in 2020 (Local Governance Service 2020). Interviews with the MSWR (and confirmed during the workshop) indicated that the backlog of unemployed School of Hygiene graduates has been cleared and that currently there are no challenges in obtaining financial clearance to employ them. However, university graduates and graduates from other training institutions that are not guaranteed or entitled to immediate employment by the local government have to wait until financial clearance is received from the Ministry of Finance.

Still, positions are not being created to increase the number of EHOs to reach the standard of one EHO per 700 people; currently the number of EHOs nationally would need to double to meet that standard. Given the aforementioned GOG civil and public servant hiring freeze for the 2023 fiscal year, this is not likely to happen soon.

⁴ The GLAAS assessment does not specify what is included or not in these numbers (e.g., is it only technical training, is it capturing all relevant disciplines, is it including university-based training only or not).

⁵ The GLAAS assessments do not include training or apprenticeship for the informal sector or at the community level.

Additional barriers to attracting and retaining HR in the sanitation and hygiene sectors, particularly the public sector, are discussed below.

1. Inadequate resources for sanitation delivery at the local level

In addition to the hiring freeze and lack of MMDA budget to recruit sufficient local HR for the delivery of sanitation and hygiene, the lack of financial resources limits the ability of existing staff to do community engagement. Aside from DP or NGO-funded projects, MMDAs do not have adequate budget for staff to travel regularly to communities to provide follow-up support. Some MMDAs consider both solid and liquid waste as sanitation, and with solid waste being of higher political interest, funds tend to be allocated more to solid waste management. This leaves very little for sanitation activities. Some funds are deducted at the central government level, leaving limited resources to be allocated for sanitation activities within the MMDAs. Delays in release of funds to MMDAs also affects their work and forces them to prioritize other infrastructure such as markets, truck stations, and clinics over sanitation expenditure. The inability of MMDAs to prioritize sanitation has an impact on the availability of HR and incentives for EHOs to work effectively.

2. Unattractive service conditions, especially compared to the health sector

Key informants identified that the conditions of public service, characterized by low remuneration and limited benefits and pension when compared to other sectors and types of organizations (e.g., private, DP, and NGOs), are often unattractive for professionals. As well, staff do not generally want to work in rural (remote) areas, as highlighted by WHO (in press).

Key informants noted that staff within the EHO grade in the MMDAs have lower benefits than similar staff in other sectors. For example, in the health sector, market premium (an allowance paid to health workers in short supply) for degree holders is pegged or calculated at 65 percent of their monthly salary and those for diploma holders at 58 percent. However, in the local government service, the premium is pegged at 15 percent, which is equivalent to support staff (e.g., laborer or security man) in the MoH (Asamani et al. 2021; GOG 2009). This makes the health care sector more attractive for EHOs that have licenses.

The private and NGO space may be attractive in the short term due to better service conditions, but the limitations include the challenges of job security due to the dependence on projects, and the lack of opportunities for career development and growth.

Another challenge identified by key informants was that in recent times, as noted, most large-scale government projects have begun to focus more on urban areas, attracting professionals with better living conditions.

3. Limited opportunities for career development inside the sector

There often are limited opportunities for training and career progression within the sanitation and hygiene sectors. Most training is ad hoc, tilted toward the public sector and often sponsored by donors or projects. For example, key informants highlighted that there is limited availability of on-the-job training for EHOs at MMDAs.

While there are opportunities to progress along the grades and classes to become a senior professional based on the number of years served, there are limited career growth opportunities in the (rural) sanitation and hygiene sectors. This may be due to the focus on basic technologies such as pit latrines that do not require high-level skills to deliver, and the low number of available jobs in this space.

Key informants highlighted that because of this, the sector is unattractive for skilled technical staff like engineers. Add to this the limited numbers of PHE positions at the district level, and some PHEs may

end up becoming district engineers because that gives them more responsibilities and exposure to other types of engineering work.

4. Inadequate coordination and unstructured nature of the sector

Key informants highlighted a lack of coordination between the different public sector agencies with responsibilities for various aspects of sanitation service delivery. Even though the MSWR was established to become an “institutional home” for sanitation, a key concern raised by key informants is that there is no direct line of reporting between field staff (EHOs) who work in the MMDAs and the MSWR. Having multiple institutions at the national level (MSWR, MLGDRD, OHLGS, and CWSA) that have a mandate for different aspects of sanitation and hygiene is a challenge and limits monitoring and oversight of work at the MMDAs. Disjointed recruitment postings and HR management, without adequate coordination with the sanitation managers in the field, have contributed to the unequal distribution of staff to districts and areas where they are most needed. For example, the OHLGS undertakes recruitment and postings with limited engagement with the MSWR, the REHOs, and others who have a better understanding of what is needed on the ground.

Coordination is also lacking in the overall assessments and planning of HR. The WHO’s GLAAS highlights that national HR assessments take place on an ad hoc basis. The most recent one was in 2013–2014 (Oduro-Kwarteng, Monney, and Imoro 2014). There is also no national plan or strategy to develop and manage HR for the sanitation and hygiene sectors, even if separate organizations may have their own plans.

5. Inadequate support to create an enabling business environment (limited innovation in the sector)

There is limited support for the private sector in the sanitation and hygiene sectors. If the public sector wants the private sector to play a larger role, they will have to ensure that adequate actions are taken to strengthen and support an enabling business environment. This role is currently highly dependent on DPs and NGO projects, but outside of these projects, the private sector risks losing opportunities or fails to have the same level of marketing and promotion that supports their business.

There are various barriers for the informal private sector to be formally recognized as skilled laborers, even though they may have the expertise acquired through experience and training through apprenticeships. This lack of qualification limits skills, knowledge, and quality of work, but also affects their ability to bring in new work. MMDA is not able to contract them (even for small O&M jobs), and these workers are now only involved with donor projects. This creates a lack of consistency and availability of work for them, which causes some of the artisans who are good at their job to migrate to other areas where they might find artisanal jobs, or when there are no other jobs, to go into farming.

5.2 FUTURE HUMAN RESOURCE CAPACITY FOR SANITATION

While the current HR shortages (as shown in Table 4 above) are significant, key informants had a far more positive feeling about the future (see Table 6). Key informants were of the view that with the right structures and incentives in place, the future of HR capacity could be positive, given that HR supply for the different areas is considered to be adequate. However, much needs to be done.

The assumption that the MSWR will continue to pursue establishment of the planned NSA to lead the funding and provision of sanitation and hygiene services underpins this positive outlook. Reviews of the sector policy and strategy documents are expected to support these changes. Key informants further believe that the NSA will improve the structure of the sector and support developing attractive working conditions. This will require a meticulous assessment and planning of future HR needs as well as the creation of new jobs for various professionals under the different functions. The NSA is also expected

to address some of the sector challenges, including the current fragmentation of the sector, sanitation not being well defined as a service with clear roles, the projectized sector (i.e., moving from a projectized sector to a sector with a clear program of action that is appropriately funded), and inequitable distribution of resources and staff.

To transform the sector’s HR capacity, key informants indicated that an HR audit is needed. This audit of skills and functions is expected to contribute to an HR policy. It was noted that the sanitation policy already has an HR or capacity-building component. Furthermore, there is a need for a sector HR strategy and plan to respond to the policy recommendations.

A comparison of Tables 4 and 6 shows that to move from the current status to the future scenario required to achieve SDG 6.2, all the functional areas need to build adequate capacity first in terms of numbers (i.e., reducing shortages) and secondly in terms of competencies (i.e., reducing the gaps). Other strategies that could contribute to the positive outcomes envisaged include continuing focus and prioritization of HR needs, working across sectors, planning and assessing HR, and focusing on knowledge management to ensure knowledge is not lost.

TABLE 6. PROJECTED FUTURE HR CAPACITY

FUNCTIONS	SANITATION				HYGIENE			
	URBAN	PERI-URBAN	RURAL ON ROAD	RURAL-REMOTE	URBAN	PERI-URBAN	RURAL ON ROAD	RURAL-REMOTE
Policy, strategy, coordination (national level)	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Regulation (national level)	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Monitoring (national level)	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Yellow
Regulation (district level)	Green	Green	Green	Green	Green	Green	Green	Green
Monitoring (district level)	Green	Green	Green	Green	Green	Green	Green	Green
Management/oversight and external support (provincial, local government, municipality)	Green	Green	Green	Green	Green	Green	Green	Green
Design and construction	Green	Green	Green	Green	Green	Green	Green	Green
Sanitation only – Empty and transport	Green	Green	Yellow	Yellow	NA	NA	NA	NA
O&M (includes treatment and reuse)	Green	Green	Yellow	Yellow				
Community engagement and mobilization (participation)	Green	Green	Green	Green	Green	Green	Green	Green
Business development	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Research and design	Green	Green	Green	Green	Green	Green	Green	Green

6.0 SUPPLY OF HUMAN RESOURCES

6.1 SUPPLY THROUGH COORDINATION, COOPERATION, AND WORKING ACROSS SECTORS AND INDUSTRIES

The vast majority of HR in the sanitation and hygiene sectors comes from the three Schools of Hygiene operated in coordination with the MoH and MSWR. While recruitment of students is facilitated by the MoH, funding for training of the students and infrastructure development is provided by MSWR. Given that graduates of these schools are theoretically guaranteed employment, upon completion, graduates of these schools are employed mostly by the local government service (i.e., OHLGS and MSWR) while others are hired into the MoH.

Training institutions partner with sector professionals in delivery of courses. For instance, the Departments of Civil Engineering at KNUST and the University of Energy and Natural Resources (UENR) have a pool of sector professionals that contribute to program development and serve as guest lecturers. Students from the Department of Environmental Health and Sanitation Education at the Akenten Appiah-Menkah University of Skills Training and Entrepreneurial Development (AAMUSTED) work with sector professionals as their mentors during internships to acquire practical skills.

6.2 ATTRACTING STAFF FROM OTHER SECTORS

There is no conscious effort in the public sector to attract staff from other sectors (e.g., health, construction) for sanitation and hygiene. Staff from other sectors may come to the sector as consultants or are hired as staff to undertake a project based on their expertise and leave when the project ends. Compared to other sectors, such as the health sector, the sanitation and hygiene sectors do not offer working conditions that attract staff for the long run.

Even though the public sector does not offer good remuneration or job conditions, the public sector does offer job security. This job security at times outweighs salary considerations of the private sector or of DPs and NGOs.

Projects (often donor-funded) that require diverse skills are often able to attract students/graduates from non-sanitation or hygiene-specific fields of study, such as BCC specialists, business development specialists, marketers, sociologists and social scientists, governance specialists, M&E specialists, and procurement specialists. Graduates from the Ghana School of Journalism and School of Communication Studies are also attracted to communication work on WASH projects. These individuals may work with the MMDAs, directly for donors or NGOs, or in project offices. The MMDAs also attract planners, administrators, and community development officers. These graduates come with degrees in planning, administration, social science, or similar, and their work in the MMDAs support or complement the work of hygiene- or sanitation-specific graduates.

6.3 COMPETENCY DEVELOPMENT OF CURRENT STAFF

Competency and skills development for sanitation and hygiene sector staff is achieved through a variety of mechanisms, including in-service training, short courses, and enrollment in higher education programs. In the public sector, employees who qualify are given paid leave to pursue programs in tertiary education institutions.⁶ Upon completion of the program, they are promoted to a higher professional rank/grade. Short courses also are offered by training institutions for sector professionals

⁶ Tertiary education refers to all education post secondary school (high school).

(Table 7). Some of these short courses are financed by DPs as part of capacity-strengthening projects, and therefore the participants are not required to pay.

TABLE 7. TRAINING PROVIDED THROUGH SHORT COURSES FOR EMPLOYEES IN SANITATION AND HYGIENE SECTORS	
INSTITUTION	TRAINING PROVIDED
Regional Water and Environmental Sanitation Centre, KNUST ⁷	<ul style="list-style-type: none"> • Applications of GIS and Remote Sensing in Environmental Systems • Water Safety Planning • Sustainable On-site Sanitation and Fecal Sludge Management • Boreholes and Drilling Wells • Environmental and Social Impact Assessment
Institute for Local Government Studies (ILGS)	<ul style="list-style-type: none"> • Environmental Health, Sanitation, and Hygiene • Public Health and Population Studies • Sanitation and Hygiene Governance
University for Development Studies	<ul style="list-style-type: none"> • Professional Borehole Drilling Supervision • Sanitation Approaches (CLTS/Community-led Urban Environmental Sanitation) • M&E • Water Policy and Governance • Effective Hygiene Behavior/Hygiene and Health Promotion • Household Water Quality: Storage and Treatment

The ILGS also offers short courses and programs in line with the scheme of service of employees in the local government service. This is consistent with their mandate to equip staff of local assemblies with the requisite skills, knowledge, and attitudes to perform their functions. The short courses are structured to meet the needs of entry-level professionals, mid-career professionals, and senior managers. The fees charged per course range between Ghana Cedi (GHS) 1500 (USD 150) to GHS 4,000 (USD 400). Additionally, to increase competency on the job, in-service training is provided to employees as and when new employees are recruited into the sector. Key informants, however, indicated that the offer is limited, and an in-service training program has not been fully designed in the sanitation and hygiene sectors, as exists in the health sector. One key informant noted, *One of the gaps in sanitation – we don't have the structure for in-service training. We don't have a formal process for staff entering the service; sector specific training nor onboarding. The MoH has a structured and formal system that has been successful in rolling out national in-service training schemes and there may be potential for the WASH sector to learn from this (KII, private sector).*

Interestingly, most of the professionals outside the public sector interviewed indicated that they had built their capacity and skills for sanitation more from working (learning by doing) than through formal education. For them as well, more structured sector-oriented (in-service) learning opportunities would have been welcome.

Key informants suggested several strategies to increase and improve the current offering of capacity development programs for employees in the sanitation and hygiene sectors:

- Sector institutions (private sector, OHLGS, MSWR, MoH) should strengthen formal feedback and interactive sessions with training institutions to inform them on the skills that are lacking among graduates, and to collaborate on the design of tailored programs to meet the needs of the sector.

⁷ Regional Water and Environmental Sanitation Centre courses for 2022: <https://rwesck.org/short-courses/>

- Sector professionals should be encouraged to mentor and coach students (both from university and TVETs).
- Internship programs for students in training institutions should be standardized.
- Sector institutions should recommend research areas to training institutions and universities.
- Research findings—by institutes (and students)—relevant to the sector should be shared and operationalized.

These strategies were discussed during the stakeholder workshop and informed the recommendations, reflected in Section 7.

Notably, key informants also stressed the importance of knowledge management. Knowledge management in the sector occurs through several platforms, including the National-Level Learning Alliance Platform (NLLAP), the Mole Conference Series, the CLTS national stock-taking forum, and working groups such as the National Technical Working Group on Sanitation and the WASH in Emergencies working group. These platforms provide an effective means for practitioners to improve their knowledge and capacities on different methods and mechanisms used by projects, through various channels, including face-to-face meetings, communiqués such as the “WASH Reflections” published by the NLLAP, social media groups, and an (online) EHO Public Health Library.

6.4 NEW HUMAN RESOURCES THROUGH UNIVERSITIES AND TRAINING INSTITUTES

New HR to the sector come from a variety of organizations: universities, TVETs, training institutes, and international graduate/post-graduate programs (Figure 6). Much of the workforce comes from local universities and technical universities that produce graduates with diplomas, bachelors, and post-graduate degrees. Additionally, three Schools of Hygiene (Accra, Greater Accra; (Tamale) Northern region; and (Ho) Volta region) supply the sector with employees. Graduates from these schools usually hold a certificate or diploma in environmental health. Altogether, employees from these two sources (universities and Schools of Hygiene) constitute about 90 percent of the sector workforce.

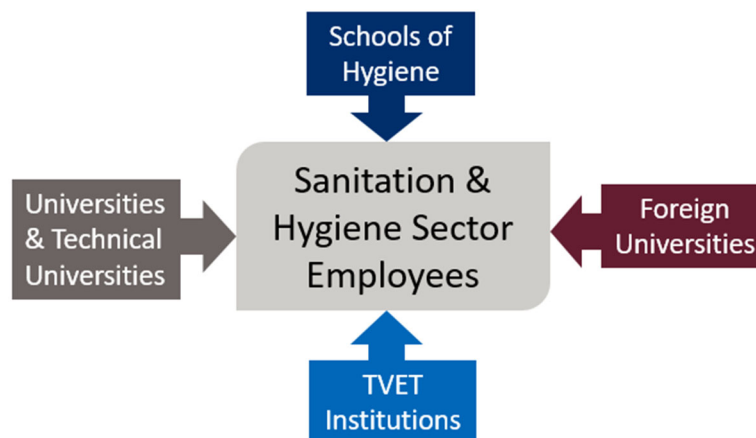


Figure 6. Sources of Supply of Employees for the Sanitation and Hygiene Sectors in Ghana

Some foreign universities also supply employees with post-graduate training to staff in the sector. Usually, these are students who have completed a local university degree and earn a scholarship to study abroad for a post-graduate degree. Notably, the Dutch Organization for Internationalization in Education scholarships are given to students to study in institutions in the Netherlands (e.g., IHE Delft, Wageningen University), and in the UK, the Commonwealth scholarships have supported some Ghanaians to pursue post-graduate programs in sanitation and hygiene in universities such as Cranfield University and Loughborough University.

Some TVET institutions also supply staff with technical skills to the sector (e.g., carpentry, masons, plumbing, mechanics), but these—who have National Vocational Training Institute (NVTI) Certificates—are often attracted to work in other sectors (e.g., building and construction). Therefore, they are generally involved in larger construction projects (which may include sanitation) but are to a lesser degree involved in constructing household facilities.

Universities that provide bachelor’s degree-level education related to sanitation and hygiene issue up to about 200 bachelor’s degrees annually (Table 8). Conversely, doctorate-level training institutions produce up to 12 graduates annually. For the certificate and diploma levels, training through the Schools of Hygiene is two years for a certificate and three years for a diploma. Students who attend these training institutions are paid a monthly allowance by the government and are assured of employment after graduation, albeit often with delays as discussed above. Additionally, one public university, AAMUSTED, offers training at the diploma level in environmental health and sanitation to augment the workforce in the sector; this is a two-year program. As such, graduates from the Schools of Hygiene are drawn to AAMUSTED to upgrade from a certificate to diploma in Environmental Health and Sanitation. Currently, there are plans to offer bachelor’s degrees in Environmental Health in the Schools of Hygiene to support developing EHAs. Although the curriculum has been developed, the program has yet to start.

TABLE 8. SUPPLY OF EMPLOYEES TO THE SANITATION AND HYGIENE SECTORS IN GHANA				
LEVEL OF TRAINING	TOTAL NUMBER TRAINING INSTITUTIONS NATIONWIDE*	SAMPLE OF TRAINING INSTITUTES CONSULTED	AVERAGE ANNUAL GRADUATE OUTPUT	PROPORTION FEMALE (%)
Certificate	2	2	120	80%
Diploma	4	3	40–60	65–80%
Bachelor’s degree	6	4	10–200	20–40%
Master’s degree	8	3	12–45	20–40%
Doctorate degree	3	2	10–12	20–30%

*Table covers mainly Environmental Health and Public Health Engineering Classes in selected training institutions. Details of courses offered are provided in Annex 6.

The proportion of females graduating from these training institutions drops dramatically as the level of degree increases. At the post-graduate level, the GOG, through a World Bank loan facility, has established two centers for training students in sanitation and hygiene: the Regional Water and Environmental Sanitation Centre Kumasi and Regional Centre for Energy and Environmental Sustainability in Sunyani. These centers offer scholarships to students to pursue post-graduate studies and usually set a target of 30 percent female for their annual enrollments.

The inflow of students and proportion of graduates entering the sanitation and hygiene sectors is shown in Figure 7. Predominantly, students who study for certificate, diploma, and bachelor’s degrees related to sanitation and hygiene come from senior high schools. They constitute between 90 and 100 percent of students entering these institutions. Upon graduation, many of the students who go through certificate and diploma training go back to the sanitation and hygiene sectors. However, at the bachelor’s degree level, most graduates are at liberty to choose any field they want to pursue, and therefore only up to half of them take up careers in the sanitation and hygiene sectors.

At the post-graduate level, more than half of students who enroll for the programs are professionals already working in the sector. Therefore, a significant proportion of graduates return to the sector upon

graduation. However, at the doctorate level, most graduates take up teaching and research positions in universities instead of returning to the sector as professionals.

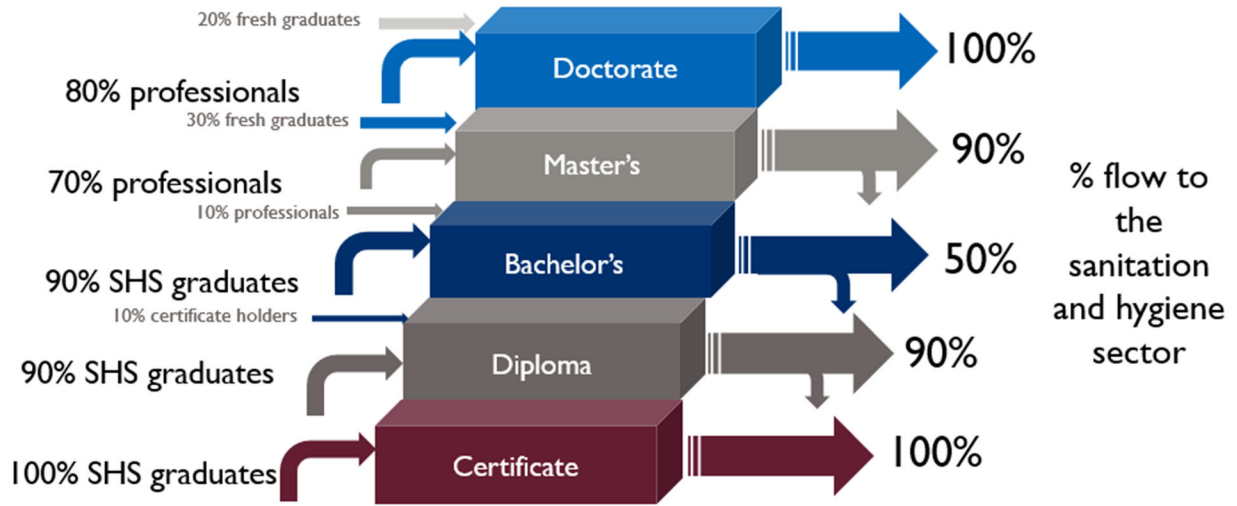


Figure 7. Student Inflow into Training Institutions and Graduates Entering the Sanitation and Hygiene Sectors

7.0 RECOMMENDATIONS

From the above discussion, several high-level recommendations emerged. These were finalized in consultation with participants at the stakeholder validation workshop, who were able to add granularity and prioritize them (that is, provide a timeframe for implementation). The recommendations are directed at primary stakeholders active in the sector and structured around key areas of engagement, namely: Policy and Oversight, Training and Capacity Development, and Product and Service Delivery (see Figure 8). Some recommendations apply to more than one category of stakeholder. An additional category reflects where efforts need to be taken that are beyond the direct control of sanitation and hygiene stakeholders.

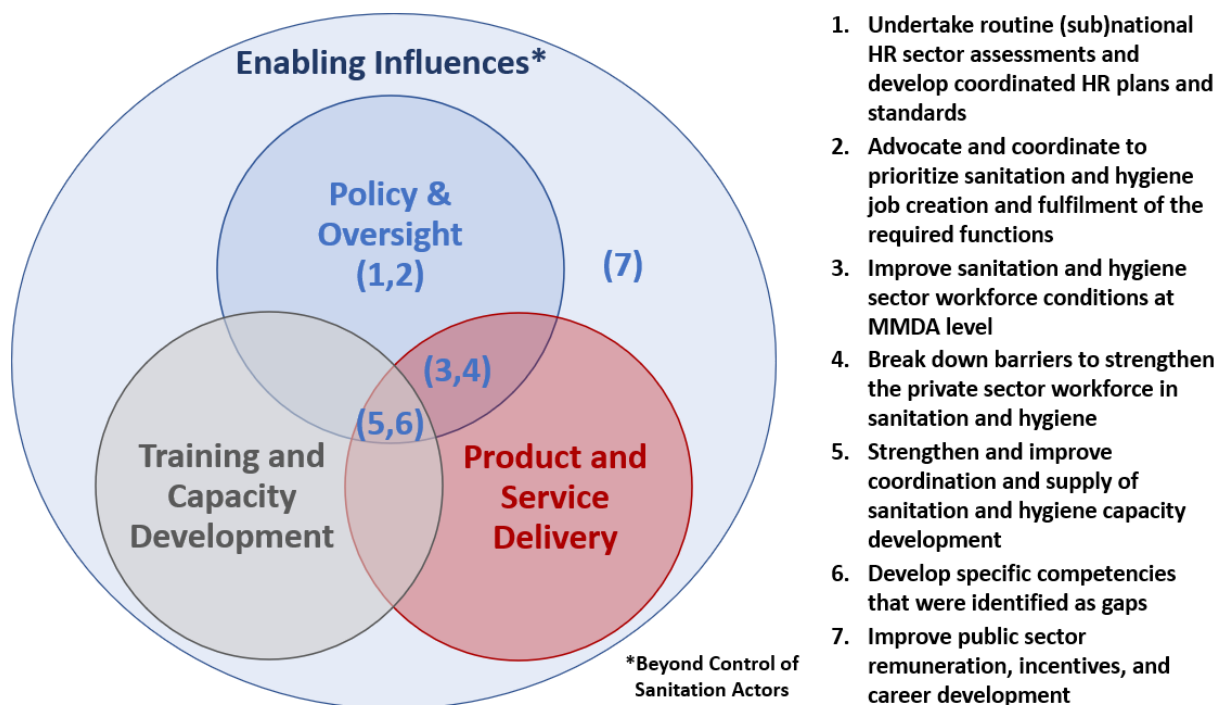


Figure 8. Overview of Recommendations

The recommendations are presented in Table 9 together with an indication of the key actors involved in executing the various actions identified for each, as well as the expected implementation timeframe (short term is within two years, medium term is between two to five years, long term is five years or more). Not all the recommendations were developed in the same level of detail. They are meant as a kickoff point for further discussions and actions in response to this CNA.

TABLE 9. RECOMMENDATIONS FOR ADDRESSING BARRIERS TO HR DEVELOPMENT			
RECOMMENDATION	TIME FRAME	RESPONSIBLE ENTITY	COMMENTS
INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT			
1. Undertake routine (sub)national HR sector assessments and develop coordinated HR plans and standards			
a. Undertake a detailed HR capacity audit for the sector to identify all the key skills and HR needed for sanitation and hygiene, and develop	Short term	Led by MSWR and OHLGS with support from DPs and NGOs	Advocate for diversity of skills in the development of standardized jobs. This can be built on the existing

TABLE 9. RECOMMENDATIONS FOR ADDRESSING BARRIERS TO HR DEVELOPMENT

RECOMMENDATION	TIME FRAME	RESPONSIBLE ENTITY	COMMENTS
standardized jobs for the sector, inclusive of lower skilled workers.			grade system defined as by the public sector.
b. Improve or better define the functions and HR structure and operationalize at the local level.	Short to medium term	MSWR, OHLGS, other sector agencies and DPs	These could be included in the review of sector policy.
c. Develop a consolidated sector HR plan, including a consideration of future HR demand, and create grades for additional professionals as needed.	Medium term	Led by MSWR and OHLGS with support from DPs and NGOs	Contingent on completing the two recommended actions above.
2. Advocate and coordinate to prioritize sanitation and hygiene job creation and fulfilment of the required functions			
a. Mobilize funding and rationalize staff distribution to address regional-level disparities in numbers of EHOs and ensure that each district gets adequate staff.	Medium to long term	MSWR with OHLGS support	Planned establishment of the NSA is likely to contribute to this recommendation. MSWR has indicated that plans may not be affected by the November 2022 directives in the government budget statement to not set up new government agencies in 2023.
b. Continue to advocate for and implement the planned NSA.	Short to medium term	MSWR/central government MSWR working with sector partners (e.g., DPs and NGOs)	The proposed NSA would create clarity on roles, tasks, and collaborations and ensure that all required functions are fulfilled. It would enhance the provision of sustained sanitation and hygiene services by coordinating actors and donor contributions, countering projectization, and coordinating capacity development (and interaction with the training institutes).
c. Explore creating Director of Sanitation (for the engineering professionals) and Director of Environmental Health (for EHO professionals) positions with equal status in MSWR.	Short to medium term	MSWR working with sector partners (e.g., DPs and NGOs)	Creating these new positions may avoid conflicting situations where reporting lines and heads of departments are unclear.
POLICY AND OVERSIGHT INSTITUTIONS WITH PRODUCT AND SERVICE DELIVERY AGENTS			
3. Improve sanitation and hygiene sector workforce conditions at the MMDA level			
a. Mobilize adequate financial resources at the MMDA level to improve working conditions, and have sufficient equipment, materials, and resources for staff to do their work.	Medium to long term	MMDAs, OHLGS with support from MSWR	This, to counter the identified shortage of staff, insufficient skills diversity, and overburdened staff at MMDA level.
b. Collaborate with other departments (and/or their volunteer programs) to coordinate tasks and assign or share	Short term	MMDA	

TABLE 9. RECOMMENDATIONS FOR ADDRESSING BARRIERS TO HR DEVELOPMENT

RECOMMENDATION	TIME FRAME	RESPONSIBLE ENTITY	COMMENTS
staff or volunteers to reach the population and achieve planned tasks.			
c. Recruit a diversified range of employees that include BCC specialists, M&E specialists (equipped with skills to apply digital tools), and the new grade of EHA, which could replace a more expensive and harder to attract PHE.	Short to medium term	MMDA and OHLGS	Align efforts with HR skills audit and consolidated HR plan describe in recommendation 1c.
d. Increase the availability of HR for construction by recognizing the informal private sector and allowing them to take on smaller MMDA assignments, like repairs and rehabilitation.	Short term	MMDA	This is contingent on appropriate basic training on technologies, and oversight and quality control mechanisms.

4. Break down barriers to strengthen the private sector workforce in sanitation and hygiene

a. Explore enhanced private sector roles and provide business development support for the private sector (including informal sector and SMEs), e.g., through provision of tax incentives.	Medium to long term	Government (MSWR, Ministry of Employment and Labor Relations, GEA)	DPs and INGOs can support these activities, bringing in expertise, conducting research to understand what works and what does not, and supporting the private sector in finding their business potential.
b. Provide a means for the informal sector to formalize through certification schemes.	Medium to long term	MSWR	Regarding professionalization of artisanal services—the GOG-UNICEF program for professionalization and certification of artisans.

POLICY AND OVERSIGHT INSTITUTIONS IN CONJUNCTION WITH TRAINING INSTITUTIONS AND SERVICE DELIVERY AGENTS**5. Strengthen and improve coordination and supply of sanitation and hygiene capacity development**

a. Coordinate and strengthen the links between sector organizations and education and training institutions and interact on needs and adjustments in curricula, the use of sector professionals in courses/capacity development or mentoring of students, internship programs, and university research.	Short to medium term	MSWR, universities, Schools of Hygiene, other organizations	This will continue to ensure that the education and capacity development efforts meet the needs of and anticipated shifts in the sector. Local government service could absorb interns, trainees, and/or recent graduates; possibly formalized through a memorandum of understanding between relevant institutions.
b. Collate and bring together all (recent) open-source capacity development materials to avoid duplication of effort and identify gaps.	Short to medium	MMDA with OHLGS	For example, open-source material for artisans to be trained on all technologies used in Ghana.
c. Continue to upgrade Schools of Hygiene trainers, curricula, and equipment to implement the planned bachelor's degree for EHAs and	Short term	MSWR, MoH, and Schools of Hygiene	This is partly in the making as the Schools of Hygiene have a

TABLE 9. RECOMMENDATIONS FOR ADDRESSING BARRIERS TO HR DEVELOPMENT

RECOMMENDATION	TIME FRAME	RESPONSIBLE ENTITY	COMMENTS
respond to the need for more technical know-how by EHOs.			bachelor's degree developed, but not yet implemented.
d. Deploy diverse learning opportunities and continuous professional development (CPD) programs for sector professionals that correspond with identified needs—on-the-job training, short courses, and reskilling and retooling of existing professionals to increase access to information and knowledge and the application of learning.	Short to medium term	Different sector agencies and government Private sector and NGOs to also provide training for their staff	The sector HR plan from recommendation 1c could identify HR needs to complement existing capacity development requirements in the current scheme of service.
e. Form a national sanitation and hygiene platform (meeting) to share the CPDs, motivate staff, and provide opportunities to network, share knowledge and experience, as well as co-design and develop best practices.	Long term	MSWR, different sector agencies	Explore the possibilities to link this to an existing coordination platform/sector working group, such as NLLAP. The CPD is adopted and regularly reviewed and updated by sector agencies.
f. Continue to develop professional trainers with solid facilitation skills and awareness of adult learning methods, who can incorporate new and important knowledge and skills (e.g., climate resilience, digital tools, GESI, etc.).	Medium term	Training institutes	This will improve the quality and relevance of course offerings and trainings.

6. Develop specific competencies that were identified as gaps

MMDAs to develop community mobilization skills, BCC, technical knowledge on affordable technologies and suppliers, hygiene education, GESI, M&E and use of digital tools, sanitation marketing, and business development (support).	Short to medium term	MMDA, OHLGS	Various competency gaps were identified that should be considered in future capacity development efforts (by DPs, INGOs, training institutes/universities, and others). This report provides an indicative picture that should be verified by those identified to be missing skills or competencies and local actors. For those involved directly in or that influence the delivery of products and services, a set of more immediate enhanced capacity requirements emerged as described herein.
Informal private sector (e.g., artisans, hardware store owners, soap developers) to develop business acumen, marketing and sales, financial management, and supply chain management.	Short to medium term	MSWR, INGOs, DPs	
Local NGOs to develop advocacy, influencing, and grant management skills.	Short term	INGOs and DPs	
INGOs and DPs to develop an improved understanding of local public sector governance and interaction. Additionally, as INGOs and DPs take a role in private sector development and leaving no one behind, their skills in business	Short term	Local Training institutes, INGOs, DPs	

TABLE 9. RECOMMENDATIONS FOR ADDRESSING BARRIERS TO HR DEVELOPMENT

RECOMMENDATION	TIME FRAME	RESPONSIBLE ENTITY	COMMENTS
development and GESI need to be ensured.			
Develop national-level public sector competencies on governance and policy reform, rural financing, GESI, BCC, data collection, analysis and management, and use of digital tools.	Short term	MSWR, OHLGS	Institutions responsible for policy and oversight need to continuously strengthen staff skills and understanding of these themes and how these pieces fit together to create a system-wide approach.

WIDER ENABLING INFLUENCES**7. Improve public sector remuneration, incentives, and career development**

a. Develop a fair wage scheme for sanitation and hygiene sector professionals that is equal to what is offered in other sectors.	Medium to long term	Government (MSWR, OHCS, OHLGS)	These are strongly contingent on completion of recommendations 1 and 2.
b. Develop incentive packages (such as extra allowances or promotion opportunities) for those working in rural areas.	Medium to long term	Government (MSWR, OHCS, OHLGS)	
c. Professionalize the in-service training for sanitation and hygiene.	Medium term	MSWR, OHLGS, with training institutions	This scheme could draw on experiences from the health and education sector.

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ANNEX I. METHODOLOGICAL FRAMEWORK

This annex summarizes the key frameworks and definitions that informed the global and individual country capacity needs assessments (CNAs). A full description of the methodological framework is included as Annex I in the CNA Final Report (United States Agency for International Development [USAID] 2023).

Frameworks

Assessing and addressing human resources (HR) capacity shortages (numbers) and/or gaps (competencies) requires a full understanding of four interconnected levels of capacity: individual, organization, enabling environment, and society (Lincklaen Arriens and Wehn de Montalvo 2013). Figure 9 demonstrates that individuals' (HR) ability to perform functions, solve problems, and set and achieve objectives are dependent on the organizations and broader society in which the professionals work (including the enabling environment and the society they aim to impact) (WaterAid 2021). In the country-level CNAs, this framework was primarily applied to the barrier analysis undertaken.

A large number of functions need to be fulfilled across sanitation- and hygiene-related sectors to reach universal safely managed sanitation (SMS) and practice of basic hygiene behaviors. In this CNA, we developed a set of functions to guide our analysis of HR capacity and shortages, and required knowledge, skills, and competencies, either at national or local levels or for the different rural to urban geographies within countries. This set of functions was informed by an earlier set developed by WaterAid (2021), but incorporated additional functions felt to be pertinent to our assessment's focus on delivering area-wide (predominantly on-site) sanitation, based on key informant interviews (KIIs) in the start-up phase of our global assessment.

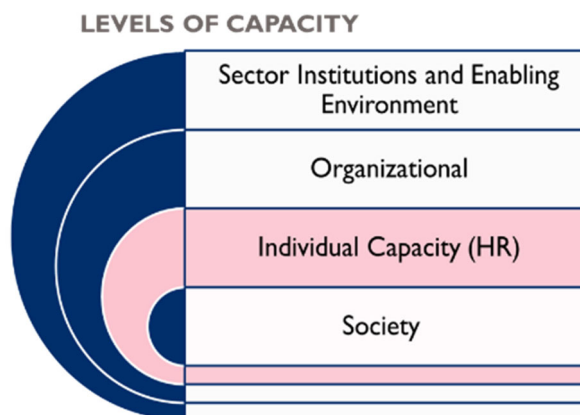


Figure 9. Framework for the Assessment

TABLE 10. FUNCTIONS TO DELIVER SANITATION AND HYGIENE

Policy, strategy, and coordination
Regulation
Monitoring
Oversight and support
Community mobilization and engagement
Construction
Emptying and transport
Operation and maintenance (O&M) (including treatment, disposal, and reuse)
Research and design
Business development

Definitions

TABLE 11. GENERAL DEFINITIONS	
Area-wide sanitation	Sanitation that goes beyond the household and the community to area-wide (district/county) or market systems-level approaches (USAID 2020)
On-site sanitation	A sanitation system in which excreta and wastewater are collected, stored, and/or treated on the plot where they are generated (SSWM n.d.)
Hygiene	In this study, strictly confined to fecal-related environmental cleanliness and hygiene
Capacity	Capacity refers to the ability of individuals, organizations, and societies to perform functions, solve problems, and set and achieve objectives (Fukuda-Parr et al. in Willems and Baumert 2003)
HR capacity (individual capacity)	The number of HR (personnel or self-employed individuals) and their competencies available to perform functions, solve problems, and set and achieve objectives
HR shortages	Refers to a deficit in numbers of HR needed, versus those available
HR gaps	Refers to a deficit in competencies needed, versus those available
Competency	Knowledge, skills, and abilities needed for an employee to perform their job in an effective manner
Technical (knowledge and skills)	Knowledge and skills that a person has in a specific field (e.g., Behavioral scientist – behavior change communication (BCC) skills; Environmental engineer - design skills to develop a fecal sludge management [FSM] treatment plant)
Transferable (knowledge and skills)	Knowledge and skills that a person may need for their job but is not specific to that field only. These knowledge areas or skillsets are applicable across multiple jobs (e.g., computer skills, relationship management, project management, interactive skills).
Formal workforce (ILOSTAT n.d.)	All workers in incorporated enterprises
Informal workforce (ILOSTAT n.d.)	All workers in unincorporated enterprises that produce at least partly for the market and are not registered. It excludes households that produce exclusively for own final use, subsistence agriculture, construction of own dwellings, etc.

TABLE 12. GEOGRAPHICAL AREAS DEFINED (ADAPTED FROM: WATERAID. 2019. GUIDANCE ON RURAL SANITATION PROGRAMMING)	
Rural Remote (far from urban)	<ul style="list-style-type: none"> • Small and remote communities • Unpaved roads • Low population density • Primary agricultural livelihood • Low market reach (products and services not reaching rural remote area) • Low affordability of sanitation products and services • Few sanitation finance options (few finance institutions or services available)
Rural-on-Road (close to urban)	<ul style="list-style-type: none"> • Small to medium communities connected with rural centers • All-weather roads • Low to medium population density • Agricultural and other livelihoods • Low to medium market reach • Low availability of market products and services • Low affordability of market-based sanitation products and services • Some options for sanitation finance
Rural Mixed (peri-urban)	<ul style="list-style-type: none"> • Large rural settlements and rural areas within urban catchments • Paved roads • Medium to high population density (some congestion problems) • Mixed livelihoods • Some tenants (rented accommodation) • Medium to high market reach • Medium availability of market products and services • Low to medium affordability of market-based sanitation products and services • Increased options for sanitation finance
Urban	<ul style="list-style-type: none"> • Large settlements within urban catchment • Unpaved or paved roads • High population density (congestion problems) • Mixed livelihoods • Fall in mandated area of the utility • Medium to high market reach • Medium to high availability of market products and services • Can have lack of land

TABLE 12. GEOGRAPHICAL AREAS DEFINED (ADAPTED FROM: WATERAID, 2019. GUIDANCE ON RURAL SANITATION PROGRAMMING)

ownership (informal/illegal settlement) • Low affordability of market-based sanitation products and services • Increased options for sanitation finance

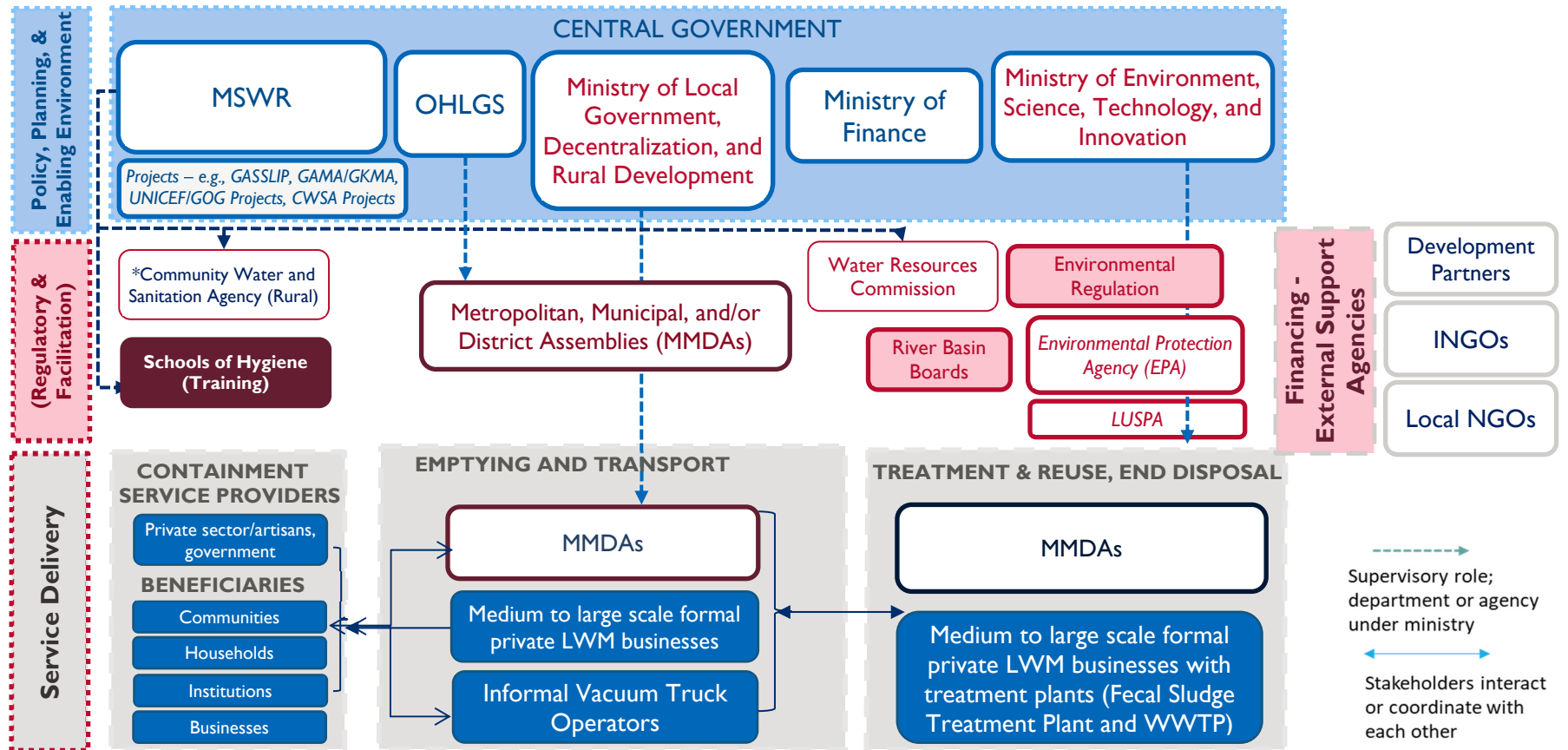
ANNEX 2. LIST OF STAKEHOLDER ORGANIZATIONS ENGAGED

TABLE 13. STAKEHOLDER ORGANIZATIONS ENGAGED DURING STUDY			
SN	STAKEHOLDER CATEGORY	ORGANIZATION	PERSONS INTERVIEWED
1	Local Government/National	Office of the Head of Local Government Service (OHLGS)	Head of Service HR Director Director of Research Statistics and Information Management
2	Central Government/National	Ministry of Sanitation and Water Resources (MSWR)	Deputy Director Environmental Health and Sanitation Directorate Senior EHO (focal person for Rural Sanitation and Government of Ghana (GOG)/United Nations Children's Fund (UNICEF) Project)
3	Central Government/National	Community Water and Sanitation Agency (CWSA)	Director of HR Director of Technical Services Head of Extension Services
4	Nongovernmental Organization (NGO)	CONIWAS	Executive Secretary
5	NGO	ProNet South	Managing Director
6	NGO	Afram Plains Development Organisation	Managing Director
7	International Nongovernmental Organization (INGO)	WaterAid	Technical Officer
8	INGO	Global Communities	Chief of Party/Deputy Chief of Party
9	Consultant/Professional Body	WHS Solutions (also a member of West African Postgraduate College of Environmental Health [WAPCEH])	Managing Director (President of WAPCEH)
10	Professional Body/Trainer	WAPCEH/Ministry of Health Training School - Kintampo	Member of professional body and Trainer
11	NGO/Private Sector	TREND/ISSCO	KIs (Managing Director, Consultants) 3 persons
12	Private Sector	SkyFox	Managing Director
13	INGO/United Nations Agency	UNICEF	Water, Sanitation, and Hygiene (WASH) Officers 3 persons
14	RTI	Kwame Nkrumah University of Science and Technology (KNUST), Department of Civil Engineering	1 person

TABLE 13. STAKEHOLDER ORGANIZATIONS ENGAGED DURING STUDY

SN	STAKEHOLDER CATEGORY	ORGANIZATION	PERSONS INTERVIEWED
Additional From Workshop			
15	RTI	Department of Civil and Environmental Engineering, University of Energy and Natural Resources (UENR)	Lecturer: 1
16	TI/Government	School of Hygiene, Accra	Principal
17	RTI	Department of Water and Sanitation, University of Cape Coast	Senior Lecturer/Professor
18	TI/Government	School of Hygiene, Ho	Principal
19	Private Sector	Napagah Consult	Managing Consultant
20	Government Regional	Greater Accra Regional Coordinating Council	REHOs: 2
21	Central Government	Ghana Enterprises Agency	2 persons
22	NGO	Rotary	Project Manager: 1
23	Central Government	MSWR	HR Director Project Officer for WASH Public Health Engineers (PHEs) 4 persons
24	Central Government	CWSA	Assistant HR: 1 person
25	Development Partner	USAID	WASH Specialist: 1
26	Private Sector	SkyFox Rep	Technician: 1

ANNEX 3. THE INSTITUTIONAL STRUCTURE OF SANITATION AND HYGIENE



ANNEX 4. ATTRITION RATE FOR LOCAL GOVERNMENT STAFF

The following tables provide an overview of research done on the local government staff attrition by OHLGS for the year 2022 (up to mid-year).

TABLE 14. ATTRITION RATE FOR LOCAL GOVERNMENT STAFF FOR FIRST QUARTER OF 2022						
NO.	PROFESSIONAL CLASSES	DEATH	RESIGNATION	RETIREMENT	VACATION OF POST	GRAND TOTAL
1	Administrative		7	6	1	14
2	Agricultural		4	6		10
3	Auxiliary	1	1	5		7
4	Development Planning		5	1		6
5	Engineering		3	1		4
6	Environmental Health		14	3		17
7	Human Resource		1			1
8	Internal Audit		2			2
9	MIS/Information Technology		3			3
10	Procurement		1	1		2
11	Revenue		1	3		4
12	Secretarial		2	1		3
13	Social Development		4	2		6
14	Statistics		1			1
15	Technical			2		2
16	Transport			4		4
	Grand Total	1	49	35	1	86

TABLE 15. ATTRITION RATE FOR LOCAL GOVERNMENT STAFF FOR SECOND QUARTER OF 2022						
NO.	PROFESSIONAL CLASSES	COMPULSORY RETIREMENT	RESIGNATION	VACATION OF POST	VOLUNTARY RETIREMENT	GRAND TOTAL
1	Administration	10	11	3	1	25
2	Agriculture	6	3			9
3	Auxiliary	5	2		1	8
4	Budget		4			4
5	Catering	1	1			2
6	Environmental Health	2	17	1		20
7	Executive	1				1

TABLE 15. ATTRITION RATE FOR LOCAL GOVERNMENT STAFF FOR SECOND QUARTER OF 2022

NO.	PROFESSIONAL CLASSES	COMPULSORY RETIREMENT	RESIGNATION	VACATION OF POST	VOLUNTARY RETIREMENT	GRAND TOTAL
8	Human Resource		2	2		4
9	Internal Audit		3	1		4
10	Management Information System		4			4
11	Planning		2			2
12	Procurement	2	3			5
13	Records		1			1
14	Revenue	10			2	12
15	Secretaryship	3				3
16	Security				1	1
17	Social Welfare and Community Development	4	3	1		8
18	Technical	3	1			4
19	Transport	2			1	3
20	Works	4	1			5
	Grand Total	53	58	8	6	125

ANNEX 5. FUTURE TRENDS, JOBS, AND COMPETENCIES

TABLE 16. ANTICIPATED IMPACT OF EMERGING TRENDS ON SECTOR'S HR⁸

TREND	MINOR IMPACT	IMPACT	MAJOR IMPACT	SHORT TERM	LONG TERM
Climate change			X		X
Reforms/policy changes (including legal system, legislation, and enforcement)			X		X
Political economy		X		X	
Technologies utilized (tippy taps, biodigesters, decentralized waste treatment systems)		X			X
Digitalization			X	X	
Urbanization			X	X	
Gender equality and inclusion			X	X	
Innovations in rural financing			X		X
Circular economy/resource reuse		X			X
Area-wide sanitation		X			X
COVID-19 and other pandemics			X	X	X
Ghana Beyond Aid policy			X		X

TABLE 17. REQUIRED JOBS AND COMPETENCIES

FUNCTION	ACTORS/ EXISTING JOBS	IDENTIFY (NEW) JOBS	COMPETENCY (TECHNICAL SKILLS NEEDED)	COMPETENCY (TRANSFERABLE SKILLS NEEDED)
Policy, strategy, coordination (national level) MSWR	<ul style="list-style-type: none"> Chief Director Director of Water Director of Sanitation Director of Policy Planning Budget Monitoring and Evaluation EHO 	<ul style="list-style-type: none"> Research and Development (R&D) Expert Policy analyst Health education expert WASH expert Climate change/health expert Infectious disease expert Legal officer PHE Environmental health analyst Policy expert Data and research specialist 	<ul style="list-style-type: none"> Policy development Public administration Planning BCC Circular economy Legal/policy knowledge Environmental engineering Governance Research skills 	<ul style="list-style-type: none"> Project management Monitoring and evaluation (M&E) Leadership Problem solving Community mobilization Negotiation and lobbying skills

⁸ Short is within two years, medium is between two to five years, and long is five years. Here without medium term, all beyond two years is considered long term.

TABLE 17. REQUIRED JOBS AND COMPETENCIES

FUNCTION	ACTORS/ EXISTING JOBS	IDENTIFY (NEW) JOBS	COMPETENCY (TECHNICAL SKILLS NEEDED)	COMPETENCY (TRANSFERABLE SKILLS NEEDED)
Regulation (national, provincial, local government)	<ul style="list-style-type: none"> Planner Directors Regional Environmental Health Officer (REHO) DEHO Chief Director Policy Planning Budget M&E 	<ul style="list-style-type: none"> Regional, Municipal Director of Environmental Health Regional, Municipal, District Director of Sanitation Environmental health prosecutors Regulatory officer 	<ul style="list-style-type: none"> Public administration Policy development PPME Environmental health HR management R&D Legal knowledge Environmental management skills Enforcement skills Organizational skills Information and communications technology (ICT) skills 	<ul style="list-style-type: none"> ICT Financial management M&E Project management Facilitation skills Communication skills ICT Problem-solving skills
Monitoring (national, provincial, local government)	<ul style="list-style-type: none"> Planners REHO DEHO Directors DCD PPME Engineer 	<ul style="list-style-type: none"> M&E Officer Geographic information system (GIS) Data analyst EHOs Planning officer Compliance and monitoring officer M&E specialist 	<ul style="list-style-type: none"> GIS Staff appraisal skills ICT GIS M&E Environmental management skills 	<ul style="list-style-type: none"> Community mobilization M&E Facilitation skills Communication skills ICT
Advocacy monitoring and hold to account	<ul style="list-style-type: none"> Program officers Field facilitator M&E Officer DEHO REHO EHOs 	<ul style="list-style-type: none"> Advocacy officer 	<ul style="list-style-type: none"> Community mobilization Sociology Anthropology Psychology 	<ul style="list-style-type: none"> Facilitation skills Human development Communication Lobbying skills
Management/ oversight and external support (provincial, local government, municipality)	<ul style="list-style-type: none"> Municipal/ metropolitan EHO Analyst REHO 	<ul style="list-style-type: none"> Grant managers Business development managers Engineer WASH officer Project manager 	<ul style="list-style-type: none"> Environmental engineering Environmental science 	<ul style="list-style-type: none"> Project management Public administration
Design and construction (in sanitation capture and contain)	<ul style="list-style-type: none"> PHEs/engineers EHOs Artisans Households Academia Artisans Consultants 	<ul style="list-style-type: none"> WASH engineers Civil/environment/ sanitation engineers Contractors Artisans 	<ul style="list-style-type: none"> Engineering design Construction management National Vocational Training Institute (NVTI) certification Entrepreneurial skills Sales and marketing skills 	<ul style="list-style-type: none"> Human relations Analytical skills
Sanitation only - empty and transport	<ul style="list-style-type: none"> Vacuum tanker drivers 	<ul style="list-style-type: none"> Vacuum truck operators Drivers Manual pit emptiers 	<ul style="list-style-type: none"> NVTI certification Occupational health and safety Driving skills 	<ul style="list-style-type: none"> Communication Negotiation
O&M (includes treatment and reuse)	<ul style="list-style-type: none"> Household Municipality Private sector 	<ul style="list-style-type: none"> WASH engineers Artisans 	<ul style="list-style-type: none"> Hygiene Environmental/ sanitation engineering NVTI certification 	<ul style="list-style-type: none"> Human relations

TABLE 17. REQUIRED JOBS AND COMPETENCIES

FUNCTION	ACTORS/ EXISTING JOBS	IDENTIFY (NEW) JOBS	COMPETENCY (TECHNICAL SKILLS NEEDED)	COMPETENCY (TRANSFERABLE SKILLS NEEDED)
(household, municipality)				
Behavior change and community engagement and mobilization (national, local government, municipality level)	<ul style="list-style-type: none"> • National government (MSWR, CWSA, and NGOs) • MMDAs – EHOs, NGOs • Media 	<ul style="list-style-type: none"> • Sociologists • Behavioral change scientists/psychologists, marketing specialists • Communication officer • BCC expert • Community development/ mobilization officer 	<ul style="list-style-type: none"> • Community studies • Psychology 	<ul style="list-style-type: none"> • Community mobilization • Communication

ANNEX 6. HUMAN RESOURCE SUPPLY

TABLE 18. DETAILS OF ANNUAL GRADUATE OUTPUT, STUDENTS' INFLOW, AND EMPLOYEE OUTFLOW INTO SANITATION AND HYGIENE INSTITUTIONS IN GHANA

LEVEL OF TRAINING	RELATED PROGRAMS	INSTITUTIONS	AVERAGE ANNUAL GRADUATE OUTPUT	PERCENT FEMALE	INFLOW	OUTFLOW INTO SANITATION AND HYGIENE SECTORS
Certificate	Environmental Health	School of Hygiene, Ho	120	80%	100% senior high school (SHS) graduates	100%
	Environmental Health	School of Hygiene, Tamale	120	80%	100% SHS graduates	100%
Bachelor's degree	Environmental Health and Sanitation Education	Akenten Appiah-Menkah University of Skills Training and Entrepreneurial Development (AAMUSTED)	40	65%	80% Environmental Health Officers 10% fresh SHS graduates 10% Community Nurses	80%
	Environmental Health	School of Hygiene, Accra	60	80%	100% - SHS graduates	100%
	Environmental Health	School of Hygiene, Ho	40	80%	100% Certificate holders	100%
	Environmental Science	KNUST	200	20%	100% - SHS graduates	50%
	Civil Engineering		150	20%	90% - SHS graduates	10%
	Environmental Health and Sanitation Education	AAMUSTED	200	40%	80% - SHS graduates	50%
	Environmental Engineering	UENR	140	20%	100% - SHS graduates	30%
	Sanitation and hygiene	University of Cape Coast	10	35%	100% - SHS graduates	90%
	Public Health (Environmental Health option)	University for Development Studies	-	-	-	-
	Environmental Management and Sustainability		-	-	-	-

TABLE 18. DETAILS OF ANNUAL GRADUATE OUTPUT, STUDENTS' INFLOW, AND EMPLOYEE OUTFLOW INTO SANITATION AND HYGIENE INSTITUTIONS IN GHANA

LEVEL OF TRAINING	RELATED PROGRAMS	INSTITUTIONS	AVERAGE ANNUAL GRADUATE OUTPUT	PERCENT FEMALE	INFLOW	OUTFLOW INTO SANITATION AND HYGIENE SECTORS
	Public Health	Catholic University	-	-	-	-
Master's degree	Environmental Sanitation and Waste Management	KNUST	45	40%	80% professionals	100%
	Water Supply Engineering and Management					
	Water Engineering					
	Environmental Health and Sanitation	Presbyterian University	-	-	-	-
	Environmental Sanitation	University of Ghana	-	-	-	-
	Environmental and Occupational Health	AAMUSTED	12	20%	90% professionals	90%
	Environmental Engineering and Management	UENR	20	25%	50% professionals	60%
	Public Health	University of Health and Allied Sciences	-	-	-	-
	Public Health	University for Development Studies	-	-	-	-
Environmental Science Policy and Management	Institution for Local Government Studies	-	-	-	-	
Sanitation and Water Governance						
Doctorate degree	Environmental Sanitation and Waste Management	KNUST	12	30%	100% professionals	90%
	Water Supply and Treatment Technology					

TABLE 18. DETAILS OF ANNUAL GRADUATE OUTPUT, STUDENTS' INFLOW, AND EMPLOYEE OUTFLOW INTO SANITATION AND HYGIENE INSTITUTIONS IN GHANA

LEVEL OF TRAINING	RELATED PROGRAMS	INSTITUTIONS	AVERAGE ANNUAL GRADUATE OUTPUT	PERCENT FEMALE	INFLOW	OUTFLOW INTO SANITATION AND HYGIENE SECTORS
	Water Resources Management					
	Environmental Engineering Management	UENR	10	20%	50% professionals	100%
	Environmental Science	University of Ghana				

U.S. Agency for International Development

1300 Pennsylvania Avenue, NW

Washington, DC 20523

Tel: (202) 712-0000

Fax: (202) 216-3524

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