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# SANITATION AND HYGIENE SECTOR CAPACITY NEEDS ASSESSMENT

## RWANDA COUNTRY REPORT

**OCTOBER 2023**

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Tetra Tech Contacts: Morris Israel, Chief of Party  
morris.israel@tetratech.com

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

Lucia Henry, Project Manager  
lucia.henry@tetratech.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

ASSWERWA	Association of Sludge Emptiers in Rwanda
AWS	Area-wide Sanitation
CBEHPP	Community-Based Environmental Health Promotion Programme
CHC	Community Health Club
CHD	Community Hygiene Dialogue
CHW	Community Health Worker
CNA	Capacity Needs Assessment
CSO	Civil Society Organization
DP	Development Partner
DSAHO	District Sanitation and Hygiene Officer
EHO	Environmental Health Officer
FEPEAR	Association of Water and Sanitation Operators
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GESI	Gender Equality and Social Inclusion
GOR	Government of Rwanda
HR	Human Resources
HRH	Human Resources Health
INGO	International Nongovernmental Organization
IT	Information Technology
JICA	Japanese International Cooperation Agency
KII	Key Informant Interview
MBS	Market-based Sanitation
MINALOC	Ministry of Local Government
MINEDUC	Ministry of Education
MININFRA	Ministry of Infrastructure
MIS	Management Information System
MOH	Ministry of Health
NGO	Nongovernmental Organization
NISR	National Institute of Statistics Rwanda

NST I	National Strategy for Transformation
O&M	Operations and Maintenance
PPP	Public-private Partnership
RDB	Rwanda Development Board
RURA	Rwanda Utilities Regulatory Authority
SDG	Sustainable Development Goal
SEDO	Social Economic Development Officer
SWAP	Sector-wide Approach
SWG	Sector Working Group
TWG	Thematic Working Group
TVET	Technical and Vocational Education and Training
UN	United Nations
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
USD	United States Dollar
WASAC	Water and Sanitation Corporation
WASH	Water, Sanitation, and Hygiene
WASHPaLS	Water, Sanitation, and Hygiene Partnership and Learning for Sustainability
WATSAN	Water and Sanitation

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



## EXECUTIVE SUMMARY

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 resource (HR) capacity needed to deliver safely managed area-wide sanitation and basic hygiene sustainably and at scale. The overall assessment included six country-level CNAs, including in Rwanda. The Rwanda assessment was a limited review, which included a desk review, key informant interviews, and a focus group discussion, intended to highlight key findings and identify issues for further investigation.

### KEY FINDINGS

**Rwanda has made substantial investments in sanitation and hygiene service delivery, including through building a diversified sanitation and hygiene workforce.** Following the genocide in the 1990s, the Government of Rwanda (GOR) made considerable efforts to reconstruct the country's physical infrastructure but also develop its human resources, working together across ministries and institutions and with the support of development partners (DPs), the private sector, and nongovernmental organizations through the phases of reconstruction, consolidation, and acceleration. As a result, Rwanda was among the few countries that reached the Millennium Development Goals by 2015; reported access to basic sanitation in Rwanda is 75.1 percent (Ministry of Infrastructure [MININFRA] 2021). Guided by the ongoing National Transformation, Vision 2050, and Sustainable Development Goal (SDG) 6 targets, the GOR's focus is now on achieving targets of universal and sustainable safely managed sanitation and basic hygiene services.

The assessment indicated that Rwanda has a solid enabling environment framework in place for the sanitation and hygiene sectors in terms of policies, regulations, institutions, and strategic plans. There are a range of mandated and active actors along the decentralized structures, from national to village levels. Communities and the individuals within them are important actors who are mobilized through traditional structures and Community Health Clubs (CHCs).

**Through the CHC model, communities play an important role in performing sanitation and hygiene functions linked to mobilization and prevention of environmental diseases.**

Through the cascaded training model, a range of health-, hygiene-, and sanitation-related knowledge and skills has been built among key personnel across the decentralized structures. CHCs contributed substantially to achieving Millennium Development Goal targets and, in line with the latest iteration of the Community-Based Environmental Health Promotion Program, will continue to play an important role in achieving SDG targets. The overall strong focus on traditional values, such as volunteerism, and the growing focus on income-generating activities and inclusion are expected to contribute to increased CHC sustainability and effectiveness. Nonetheless, several challenges were identified, including insufficient coordination, inconsistency of CHC implementation and monitoring across the country, and funding shortfalls; less than half of the constituted CHCs were said to be active.

**Formal private sector employment opportunities around sanitation and hygiene are still limited, and further skills building is required.** Private sector engagement and market-based sanitation (MBS) are important potential contributors to accelerated growth and progress against targets. Although some efforts are evident in terms of strengthening the enabling business environment, more is required in the areas of regulation, incentivization, and removal of barriers for sanitation enterprises; building knowledge and understanding of effective MBS and business development; and building skills for quality design and construction. Skill building is also needed related to emptying,

transport, treatment, and reuse of waste and in supply chain management, partnering processes, and contract negotiation.

**Certain sanitation and hygiene functions are understaffed, and there is need for a more diverse range of skills and jobs.** With regard to the sanitation and hygiene functions, more actors and jobs were associated with the overall rebuilding of the country and the sector in terms of policy, regulations, institutions, and behaviors. HR shortages are associated with more technical functions linked to ensuring technical quality of toilets, business development, safely managed sanitation, and oversight and monitoring. The assessment also identified a need for new job positions and better skills in areas related to climate change and environmental impact, gender equality and social inclusion (GESI), and sustainability, as well transferable skills such as partnership building, stakeholder engagement, and cross-sectoral coordination.

**There is scope to improve coordination of the sanitation and hygiene sectors around HR development,** by strengthening existing mechanisms such as the sector-wide approach (SWAP) and the Thematic Working Group (TWG), and further participation of the Ministry of Education (MINEDUC), universities, and technical and vocational education and training institutions in the development and production of a critical number of appropriately skilled personnel for the sector.

## RECOMMENDATIONS

From the analysis, several high-level recommendations emerged. These are aimed at primary stakeholders active in the sector and are structured around key areas of engagement: Policy and Oversight, Training and Capacity Development, and Product and Service Delivery. (Section 8 provides the recommendations in a detailed table that incorporates timeframes and key actors.)

### INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT

#### 1. Undertake a national HR sector assessment and develop a coordinated HR plan

The Ministry of Infrastructure (MININFRA) with support from the Ministry of Health (MOH), the Ministry of Local Government, the Rwanda Development Board (RDB), and others should conduct a comprehensive HR capacity gap analysis and formulate a costed HR development plan. This should take stock of current and expected gaps, needs, and sector trends to inform skills development and job training programs, including for future positions. The analysis could also consider the establishment of district-level mechanisms or programs to strengthen HR capacity of sector institutions and partners, including the private sector.

#### 2. Advocate for increased funding to prioritize sanitation and hygiene job creation and fulfillment of the required functions

To ensure continued progress toward achievement of national safely managed sanitation and hygiene targets, sector institutions (with support from DPs and civil society) need to advocate for more funding and investment in sanitation and hygiene sectors and HR, including for improved water, sanitation, and hygiene (WASH) services in rural areas.

### INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT IN CONJUNCTION WITH PRODUCT AND SERVICE PROVIDERS

#### 3. Improve and increase private sector engagement in sanitation and hygiene

To stimulate further private sector engagement and investment in increased HR capacity, the enabling environment for effective MBS needs to be strengthened through policy reform, development of

standards, and support to and incentivization of sanitation enterprises. An initial assessment of needs, drivers, and barriers for effective MBS could further inform these efforts, and more public resources should be channeled toward the development of private service providers' capacity.

Research institutions, private companies, and the RDB should engage in research and development of best-fit sanitation and hygiene models and products for various market segments. This should then be accompanied by engagement and training of entrepreneurs on the roll-out of these models and investigation of appropriate sales agent modalities.

## **INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT IN CONJUNCTION WITH SERVICE PROVIDERS AND TRAINING INSTITUTIONS**

### **4. Increase sector coordination on HR development**

Increased coordination between the sanitation and hygiene sectors on HR development could be facilitated through strengthening of existing mechanisms such as the SWAP and TWG. This should also entail increased participation of specialized training institutions, the University of Rwanda, and the MINEDUC in these coordination mechanisms.

### **5. Strengthen HR capacity and build skills and competencies for sanitation and hygiene service delivery**

In general, the assessment identified a need to strengthen and create more HR capacity of the national-level institutions involved in management and regulation of the WASH sector. Specific areas for skills building would be informed by the capacity gap assessment under Recommendation 1, but should likely include trainings on leadership, enterprise, program management, and GESI, including for sector managers at central-level agencies such as MININFRA, MOH, the Water and Sanitation Corporation, and the Rwanda Utilities Regulatory Authority.

To improve the quality of sanitation service delivery and ensure improved understanding of and focus on safely managed sanitation services, service providers should be supported in the use of benchmarking processes, peer-to-peer learning, or other knowledge-sharing opportunities that stimulate uptake and application of new learning and service orientation.

## 1.0 INTRODUCTION

### 1.1 BACKGROUND AND OBJECTIVE OF THE ASSESSMENT

With less than a decade remaining to achieve 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 sanitation and hygiene requires tackling 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 Partnership and Learning for Sustainability (WASHPaLS) #2 Activity conducted a sanitation and hygiene sector workforce capacity needs assessment, 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 capacity needs assessment concentrated on rural sanitation and hygiene and was designed to assess the HR capacity needed to deliver safely managed area-wide sanitation and basic hygiene sustainably and at scale, with emphasis on on-site sanitation. The overall assessment included six country-level assessments to validate and complement initial findings from a global desk review and informant interviews 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 six country assessments were conducted somewhat differently in each instance, but all sought in some form to address the following questions:

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?

In Rwanda, the capacity needs assessment took the form of an investigation of five key HR-related questions (see below), the findings of which are summarized in this report. These questions were developed by the assessment team based on sector-specific information and inputs from the USAID Mission in Rwanda and key implementing partners. The main audience for the findings and recommendations contained in this report is the Government of Rwanda (GOR) and its country-level partners, including international nongovernmental organizations (INGOs) and nongovernmental organizations (NGOs), training and education institutes, and development partners (DPs).

The five assessment questions for Rwanda are listed below. Each question is covered in a separate section of this report; sub-questions for each are outlined at the start of each section.

1. In light of the progress made in Rwanda, how did the country assess, plan for, and fund HR?
2. What are the capacity gaps impeding sanitation and hygiene sector achievement of universal access to sustainable services?
3. What are the HR requirements to deliver market-based sanitation (MBS)?
4. What is the role of community health clubs (CHCs) in delivering sanitation and hygiene messaging, products, and services and what are important HR considerations?
5. What are the additional HR needs to move to universal, sustainable, safely managed sanitation, and what are the Government of Rwanda's plans to address these needs?

For the purposes of this assessment and in line with the focus of the Ministry of Health (MOH), sanitation refers to the provision of facilities and services for the safe disposal of human urine and feces, and to the maintenance of hygienic conditions through services such as garbage collection and wastewater disposal (MOH 2020). Hygiene refers to the conditions and practices that help maintain health and prevent the spread of disease (MOH 2020). To distinguish between different rural and peri-urban contexts, the assessment adopted the rural typologies used in the *Guidance on Programming for Rural Sanitation* (WaterAid, Plan International, and UNICEF 2019), recognizing rural remote (far from urban), rural-on-road (close to urban) and rural mixed (peri-urban) contexts. For the purposes of understanding roles and responsibilities of actors across the rural-urban spectrum, the assessment added an urban category. Difficult contexts, a further category used in the *Guidance*, were not distinguished as a separate geographical zone in this assessment but are reflected in the discussions on specific skills and competencies required to achieve sector goals. See Annex I for descriptions of these typologies.

## **I.2 METHODOLOGY**

Guided by the five assessment questions, the data gathering methods included a review of pertinent documents, key informant interviews (KIs), and a focus group discussion (FGD). The assessment was conducted by a local subject matter expert between September and October 2022.

The desk review focused on a review and analysis of strategic sector documents such as country vision statements, policies, and regulations (see References for the list of documents consulted) and served to identify key stakeholders in the sanitation and hygiene sector for inclusion in the KIs and FGD. KIs were conducted with individuals directly involved in the process of HR development and/or capacity building in sanitation and hygiene, either at the policy level or in implementation. In all, 17 KIs were conducted, either as formal interviews or informal discussions. In addition, one FGD was organized that included members of training institutions, representatives of private operators, and some NGOs, with the purpose of collecting views on the main gaps in the sanitation and hygiene HR development process. The list of key informants and FGD participants is provided in Annex 2. The consultant triangulated and analyzed the data to compile the present report.

## **I.3 LIMITATIONS OF THIS ASSESSMENT**

Limited by time and resources, the capacity needs assessment in Rwanda included only a modest number of interviews and limited stakeholder engagement, with actors operating at the national level or in larger (multi-district) programs. The assessment did not involve in-depth analysis of sub-national data or engagement with sub-national actors. As such, the assessment sought to highlight key findings and identify issues for further investigation and did not set out to estimate numerical HR gaps in the sanitation and hygiene sector.

Section 2 of this report provides a brief overview of the sanitation and hygiene sector, including the broader HR environment and an overview of sector trends with potential HR impact. Sections 3 to 7 provide a discussion and findings for the five assessment questions, and Section 8 presents recommendations stemming from the analysis.

## 2.0 SECTOR CONTEXT AND ENABLING ENVIRONMENT

### 2.1 COUNTRY PROGRESS TO SDG 6.2

According to the fifth Population and Housing Census conducted in 2022, Rwanda has a population of approximately 13.2 million people, 52 percent of which are women and 48 percent men. Seventy-two percent of the population lives in rural areas (National Institute of Statistics of Rwanda [NISR] 2022), down from 83 percent in 2012, highlighting the significant shifts in rural to urban populations in the past decade (NISR 2012).

According to the Ministry of Infrastructure's (MININFRA) Water, Sanitation, and Hygiene (WASH) Management Information System (MIS) report (2021) and in accordance with United Nations Children's Fund (UNICEF) and World Health Organization (WHO) Joint Monitoring Program (JMP) definitions, in August 2021, at the national level, 75.1 percent of households had access to basic sanitation services, 9.2 percent had access to limited sanitation services, 13.1 percent were using unimproved sanitation, and 2.7 percent were practicing open defecation. By contrast, in 2000, just over 45 percent of the population had access to basic sanitation services (UNICEF, WHO, and JMP n.d.). The rural districts of Rwamagana and Muhanga had the highest access to basic sanitation services (90 percent and 89 percent, respectively), while the urban districts of Kicukiro (57 percent), Rubavu (51 percent), and Huye (58 percent) had the lowest level of access to basic sanitation services. In Kigali City and more developed secondary cities, household sanitation facilities are frequently shared.

On average, 24.3 percent of households had access to basic hygiene services, 15.2 percent had access to limited hygiene services, and 60.5 percent had no access to hygiene services. Access to basic hygiene services is high in Kigali City (47.7 percent) relative to Eastern (22.8 percent), Northern (19.6 percent) Southern (23.3 percent) and Western (19.3 percent) Provinces (MININFRA 2021).

Access to basic sanitation services in schools was 92.9 percent; 75.5 percent of schools had access to basic hygiene services, 12.7 percent had access to limited hygiene services, and 7.3 percent had no access to hygiene services (MININFRA 2021).

On average, access to basic sanitation services in public places like markets and transport hubs was 53.8 percent, while 61.1 percent of public places had access to basic hygiene services, 5.7 percent had access to limited hygiene services, and 33.2 percent had no access to hygiene services (MININFRA 2021).

SDG 6.2 calls for sanitation facilities that are suitable for use by men, women, girls, and boys of all ages, including people with disabilities. In Rwanda, five percent of the population aged five years and above (or about 450,000), has a disability, with roughly equal proportions being male and female (MINALOC 2021). Poverty incidence is higher among households headed by a person with a disability than among those headed by a person without a disability, and this often is linked to lack of basic services such as water and sanitation. Similarly, while the overall access rate to improved sanitation facilities is relatively high among the Rwandan population, the proportion of female-headed households with access to improved sanitation facilities (80.6 percent) is lower than that of male-headed households (88.0 percent) (Gender Monitoring Office 2019).

In general, on-site sanitation facilities are common in rural areas, and sanitation systems for urban areas are currently limited to small decentralized systems with few households connected. Major hotels, hospitals, and some industries have installed their own treatment systems as part of commercial and industrial environmental management requirements.

## 2.2 SANITATION AND HYGIENE POLICY AND LEGAL FRAMEWORK

The GOR has made the provision of adequate and equitable sanitation services for all by 2030 one of the priorities of the national development agenda and is establishing supportive policies and legislation to achieve this goal. Key documents and programs are discussed below.

**Sanitation and hygiene in the Rwanda Vision 2050.** Vision 2050, which followed Vision 2020, articulates the long-term strategic direction for “the Rwanda we want” and the enabling pathways to achieve this ambition. It sets a path that will lead the country to the living standards of an upper-middle-income country by 2035 and a high-income country by 2050. Vision 2050 builds on existing strategic plans and states, among other things, that access to safely managed sanitation will be increased from 86 percent (est. 2016) to 100 percent by 2035.

### **Sanitation sector targets in National Strategy for Transformation I (NSTI, 2017–2024).**

The NSTI, or the Seven-Year Government Program, is the implementation instrument for the remainder of Vision 2020 and for the first four years of Vision 2050. NSTI integrates global and regional commitments by embracing, among others, the SDGs (GOR 2017). The NSTI is anchored on three main pillars: economic, social, and transformative governance. The social transformation pillar entails strategic interventions that go beyond measures such as general increases in gross domestic product (GDP) per capita, to bringing positive qualitative change in all aspects of people’s lives including access to clean water, sustainable sanitation, and hygiene. Water and sanitation are mentioned alongside electricity and internet broadband as key infrastructure elements of achieving priority area 5: Moving Toward a Modern Rwandan household (GOR 2017).

Informants expressed some confusion on the progress and measurement of basic sanitation versus safely managed sanitation. While the 2021 WASH MIS (MININFRA 2021) does not include values for access to safely managed sanitation services and the NSTI quotes a 2016/17 baseline percentage of households with access to basic sanitation facilities of 86.2 percent (GOR 2017), this figure is quoted in the Vision 2050 as the baseline for the indicator ‘households using safely managed sanitation services.’ The latter also states that “Efforts shall be directed toward increasing household on-site access to sanitation services from two percent to 80 percent by 2035 and 100 percent by 2050” (GOR 2020).

**Sanitation policies and implementation strategies (2016).** The National Sanitation Policy developed in 2016 (MININFRA 2016a) is the guiding document for sanitation. The vision articulated in the Sanitation Policy is to “ensure sustainable, equitable and affordable access to safe sanitation and waste management services for all Rwandans, as a contribution to poverty reduction, public health, economic development and environmental protection.” The policy outlines the key objectives, institutions involved, and modalities of implementation at central, district, and local levels (see Box 1 for a description of administrative levels). The implementation of the sanitation policy/strategy is based on a sector-wide approach (SWAP)—an inclusive process that involves relevant stakeholders from government institutions, civil society, NGOs, the private sector, and user communities.

**Community-based Environmental Health Promotion Program (CBEHPP) (2020).** In 2009, the MOH led the development of the CBEHPP as an “approach to reach out to all communities and empower them to identify their personal and domestic hygiene and environmental health related problems (including safe drinking water and improved sanitation), to actively participate in solving the problem” (MOH 2010). The original roadmap of CBEHPP was revised in March 2020 to consider the current SDG targets (3, 6, 11, 15), NSTI, and Vision 2050 (MOH 2020a).

MOH also developed a five-year National Handwashing Sub-Strategy (2019) to guide key actions to promote a culture of hygiene that enables and promotes the practice of handwashing with soap for all people at all critical moments.



<b>BOX I. DECENTRALIZED ADMINISTRATIVE LEVELS OF RWANDA</b>	
Rwanda is composed of two layers of government (central and local) and of six complementary administrative structures:	
<b>ADMINISTRATIVE ENTITY</b>	<b>DESCRIPTION</b>
4 Provinces and the City of Kigali	Provinces serve mainly as an advisor to the decentralized entities mentioned below and coordinate development activities. The four are: Eastern, Western, Northern, and Southern.
30 districts	Autonomous administrative entity with legal status and administrative and financial autonomy (prior to 2001, known as communes).
416 sectors	Administrative entity responsible for implementation of development programs, service delivery, and promotion of good governance and social welfare.
2,148 cells	Entity that provides basic services and helps the population achieve sustainable development.
14,837 villages	Administrative entity in which the population directly participates in their own affairs and where they can reconcile their differences. It is the basic population mobilization entity entrusted with responsibilities such as data collection, conflict resolution, community mobilization, and information provision.

Source: Government of Rwanda. n.d.

### **2.3 ACTORS RESPONSIBLE FOR SANITATION AND HYGIENE**

The sanitation and hygiene sectors in Rwanda are coordinated primarily by MININFRA and MOH, respectively. However, key actors in sanitation are coordinated under the water and sanitation (WATSAN) SWAP Secretariat and include important government institutions such as the Ministry of Finance and Economic Planning, the Ministry of Environment, the Ministry of Education (MINEDUC), the Ministry of Local Government (MINALOC), the Water and Sanitation Corporation (WASAC), the Rwanda Environment Management Authority, the Rwanda Utilities Regulatory Authority (RURA), development partners, United Nations (UN) agencies, the private sector, and NGOs. Actors involved in the hygiene sector are coordinated by MOH under the Thematic Working Group (TWG) on Environment and Hygiene, which includes, among others, MINALOC, MINEDUC, WASAC, development partners, UN agencies, and NGOs.

The MININFRA is represented at the district level by district WASH officers, and the MOH by Environmental Health Officers (EHOs) at District Health Facilities. Following instruction by MININFRA, all districts established district WASH boards to oversee the planning, design, and implementation of WASH activities (MININFRA 2020).

Table 1 lists the functions (see Annex 1) related to sanitation and hygiene and the actors involved. Functions related to policy and strategy, including policy formulation, are carried out by the lead ministry such as MININFRA, MOH, and MINEDUC, while the coordination function is led by the SWAP Secretariat hosted by MININFRA, including through facilitating the WATSAN Sector Working Group (SWG) (MININFRA n.d.). Functions related to regulation of the major services such as transport, energy telecommunication, water, and sanitation are fulfilled by the RURA, the national agency that prepares regulations and guidelines and issues licenses to service providers, ensuring fair competition and consumer protection. MOH is responsible for regulating the hygiene sector.

TABLE I. FUNCTIONS AND KEY ACTORS IN SANITATION AND HYGIENE BY CONTEXT				
FUNCTION	RURAL REMOTE	RURAL-ON-ROAD	RURAL MIXED (PERI-URBAN)	URBAN
Policy, strategy, coordination (national)	MININFRA (sanitation), MINEDUC, SWAP Secretariat			
	MOH Department of Environment and Hygiene (Hygiene), TWG on Environment and Hygiene			
Regulation (national, regional)	RURA MOH			
Monitoring (national/regional)	WASAC, Department of Rural Sanitation		WASAC, Department of Urban Sanitation	
	MOH Department of Environment and Hygiene (Hygiene)			
Oversight and support (provincial/local)	Districts		Districts	
			WASAC	
Construction	Informal private sector (hired by household/civil society organization (CSO))	Informal private sector (hired by household/CSO)	NGOs with private sector firms in informal settlements	WASAC and private sector
Community mobilization and engagement	MOH/MINALOC			
	CSOs/NGOs/INGOs	NGOs/INGOs	INGOs	NGOs
	Districts			
Advocacy and holding to account	CSOs and NGOs			
Emptying and transport	None available	None	Pit emptiers - private companies	
Operations and maintenance (O&M), including treatment, disposal, and reuse	Households			
			WASAC	
Research and technical design	Academic/research institute (e.g., University of Rwanda/Integrated Polytechnic Regional College)			
	Private sector companies			
	NGOs			
Business development	Ministry of Trade and Industry			
	Private Sector Federation			
	Rwanda Development Board (RDB)			
	Development partners			

Service providers for water and sanitation include, among others, WASAC in urban and peri-urban areas and private operators in rural areas. They fulfill functions related to oversight and local management, design, and construction. WASAC includes in its structures a full Directorate of Rural Sanitation Services that supports the districts and private operators in rural areas. WASAC also carries out functions related to O&M of major sanitation infrastructure, while the district governments are in charge in rural areas.

Emptying and transport functions are implemented by private operators who obtain licenses from RURA. In rural areas, there is no emptying or transport—waste is transformed by households/farmers into organic fertilizer and spread on agriculture fields as manure. No formal regulation or guidelines exist on emptying or waste transport in rural areas.

Research and technology design are generally implemented by research institutions such as the University of Rwanda, technical and vocational education and training institutions (TVETs), NGOs, and private companies, while business development and skills empowerment are promoted by the Ministry of Trade and Industry, Private Sector Federation, and RDB. MINEDUC is responsible for coordination of all formal education offerings in Rwanda, including the TVETs and universities.

Regarding hygiene promotion, MOH designs the policies and strategies related to behavior change through its Directorate of Environment and Hygiene, and implementation is carried out jointly by local institutions such as districts, sectors, cells, villages, and *Isibo*<sup>1</sup> (communities) that are linked to the MINALOC, while local institutions from MOH include district health centers, community health workers (CHWs) at the village level, and CHCs at *Isibo* level.

## 2.4 LABOR MARKET DYNAMICS

The WASH labor market and sector HR are linked to and informed by broader labor market dynamics. The distribution of formal employment in Rwanda under the three branches of economic activity in 2020 was as follows: 20.4 percent for industry, 40.5 percent for services, and 39.1 percent for agriculture. Between 2017 and 2020, the hotel and food service sector was the fastest growing in terms of the number of workers with an increase of 111 percent, followed by the administrative and support activities sector with an 85 percent increase, other services sector with an 80 percent increase, construction sector with a 60 percent increase, and financial and insurance activities with a 59 percent increase (NISR 2021).

According to the Rwanda Labor Force Survey of 2020 annual results, the working age population (16 years and above) was 7,472,601, of which 4,212,972 (56.4 percent) were in the formal labor force, while 3,259,630 were in the informal workforce.<sup>2</sup> For those in the formal labor force, 3,460,860 were employed, while 752,112 were unemployed. This put the 2020 employment-to-population ratio at 46.3 percent—one percentage point higher than in 2019 and the highest since 2017. The ratio was higher among males (55.2 percent) than females (38.5 percent), higher among adults (49.5 percent) than youths (aged 16-30) (42.6 percent), and higher in urban areas (54.9 percent) than rural areas (44.0 percent) (NISR 2021).

The annual unemployment rate was 17.9 percent in 2020 and was higher among females (20.3 percent) than males (15.9 percent), higher among youths (22.4 percent) than adults (14.1 percent), and slightly higher in the urban areas than in the rural areas (18.1 percent and 17.7 percent, respectively). It is estimated that the total workforce working on WASH is about 7,000 people (NISR 2021).<sup>3</sup>

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<sup>1</sup> A kinyarwanda term defined as a group of 15 to 20 neighboring households in a village.

<sup>2</sup> Informal sector: 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. Formal sector: all workers in incorporated enterprises.  
<https://ilostat.ilo.org/resources/concepts-and-definitions/description-labour-force-statistics/>

<sup>3</sup> The figure includes water supply, sewerage, and waste management.

## 2.5 TRENDS AFFECTING THE FUTURE SANITATION AND HYGIENE SECTOR HUMAN RESOURCES

The ambition articulated in Rwanda Vision 2050 to become an upper-middle-income country by 2035 and a high-income country by 2050, entails a sharp rise in GDP per capita: by 2035, GDP per capita is targeted to be over USD 4,036, and by 2050, over USD 12,476 (in 2021 it was USD 822) (GOR 2020). If this ambitious growth is realized, it will have implications for employment, rates of education, and the labor force at large, including for the future sanitation and hygiene sector. Other trends with expected impact on sanitation and hygiene sector HR are outlined below.

**Urbanization.** Rwanda is urbanizing rapidly. According to Vision 2050, the objective is to have 70 percent of the population live in urban areas by 2050 (GOR 2020). This urbanization target is linked to the achievement of socio-economic development targets like increased access to sanitation facilities, clean water, and electricity, and to increased average GDP per capita. With an associated drive toward universal access to affordable and decent housing and quality services and amenities, including improved toilets and sustainable hygiene, this will require considerable efforts in HR development for, among other aspects, planning, construction, and service delivery.

**COVID-19 pandemic.** The COVID-19 pandemic that started in 2020 sparked the need for greater consideration of regular handwashing with water and soap. In Rwanda, this has caused a significant positive shift in handwashing behavior (USAID 2021a) and has further increased the number of jobs related to soap production and other jobs associated with establishing handwashing facilities, coaching, and raising awareness on the importance of handwashing.

**Climate change and environmental impact.** Climate change is affecting all sectors in Rwanda, including sanitation and hygiene, through increased frequency of flood events, recurrent drought, among others. According to the Country Climate Development Report by the World Bank Group (2022), observed temperatures are rising and the variability of rainfall is increasing. In the coming decades, temperatures are likely to increase significantly, and there will be a considerable rise in extreme heat and the number of hot days. Rainfall patterns also will change, with an increasing intensity of heavy rainfall, as well as shifts in annual and seasonal levels. Climate change will affect sanitation provision, as floods and landslides may affect key infrastructure. Increased temperatures will increase the proliferation of bacteria and microorganisms, which may affect population health in cases of poor hygiene behavior.

With the exception of high-income urban areas, most buildings in Rwanda's cities, towns, and rural areas are not connected to decentralized wastewater treatment systems or facilities. They mostly rely on individual latrines that allow for the percolation of treated effluent into the ground through leaching pits, with known risks of groundwater contamination. With increased occurrences of flood events and heavy rains, specialized skills in dealing with mitigation of groundwater pollution by solid or liquid wastes, as well as in construction of more resilient infrastructures, will become increasingly important.

**Digitalization.** Digitalization is inevitably the future of development for all sectors, including sanitation. Digitalization will be required in data monitoring, data analysis, and data reporting, but also in supplying the materials required for hygiene and sustainable sanitation services.

Since the adoption of the Smart Rwanda Master Plan, a strategic plan approved in 2015 which leads all sectors toward a knowledge-based economy that focuses on digital transformation, considerable efforts were observed in all key sectors—mainly governance, education, and health. The education sector has advanced tremendously with technology tools in the past five years, with the purpose of improving the quality of education, increasing access to and utilization of knowledge, and allowing diversity of learning methods. MOH, in collaboration with Babyl, the largest digital health service provider in Rwanda, started an e-health platform where citizens can access services using their mobile phones, and CHWs are connected to MOH via their smartphones.

### 3.0 RWANDA'S PLANNING FOR SANITATION AND HYGIENE HUMAN RESOURCES

This section seeks to understand how Rwanda assessed, planned for, and funded the development of HR that supported the significant progress made in recent decades in access to basic sanitation and hygiene services. The guiding sub-questions are:

- Is there an HR plan/strategy at national level that supported the progress over the last five to 10 years? If so, how was this plan executed and funded?
- How did the sector actors coordinate on capacity development (including education and professional institutes) and across sectors?
- Was there any level of formalization of the informal sector and how? What are the successes and failures in this process?

Understanding this progress requires understanding the evolution of the WASH sector through interrelated drivers, including cultural factors and home-grown solutions, the post-genocide reconstruction process, progress in related sectors, and specific WASH sector initiatives.

Table 2 summarizes key actions taken since 1994 in skills development related to sanitation and hygiene.

TABLE 2. KEY ACTIONS IN HUMAN RESOURCES SKILLS DEVELOPMENT			
YEARS	PERIODS	KEY ACTIONS	HR ACTIONS
1995–2000	Reconstruction period	Prioritized reforms in agriculture, health, and education	Training human capital including nurses and doctors  Setting up health institutes
2001–2005	Consolidating the strategy	Vision 2020 between 1998 and 1999	Developing sectoral strategies and HR development in line with a knowledge-based economy  CHWs elected in each village and trained on basic sanitation and hygiene
2005–2020	Accelerating the progress	Policy on Water and Sanitation in 2010  National Community Health Policy (MOH 2008)  Launching of CBEHPP in 2009  Decentralization in sanitation  Master plan for sanitation elaborated	Building block analysis carried out in human capacity building for sanitation and hygiene  HR development plan recommended for WASAC and decentralized and private operators
2020–Present	Looking ahead to SDG 6	Vision 2050 and NSTI developed	HR development plan designed and implemented for WASAC

#### 3.1 HISTORICAL CONTEXT: HOME-GROWN SOLUTIONS

Traditional factors often are seen to impede improvements in sanitation. In contrast, Rwandan society has several traditional institutions and social structures that the government has called upon to strengthen the reconciliation process and to support reconstruction, including improvements in sanitation. (Open defecation, estimated at just eight percent in 1992, was historically low due in part to several traditional customs, including those described in Box 2.) These traditional factors also have been important in promoting human skills development on a large scale with limited resources (Jain 2011).

By returning to these traditions after the war, Rwanda’s leaders were able to draw on social capital to help address the severe socio-economic problems, reform agriculture and the economy, foster good governance, and build capacity in sanitation and hygiene to support the socio-economic development of the country (Jain 2011). One of the noteworthy programs in human skills development was called *Itorero* (see Box 2).

#### **BOX 2. ITORERO CIVIC EDUCATION PROGRAM**

*Itorero* was a Civic Education Program installed before the colonial period (in the 1890s) with the objective of training complete and distinguished leaders mastering the various aspects of the country’s social, cultural, political, and military life. Traditional *Itorero* was a leadership and cultural school in which Rwandans would learn language, patriotism, social relations, sports, dancing, songs, martial arts, and leadership. Young people were sent into *Itorero* care from early adolescence until their early twenties.

*Itorero* was reintroduced in 2009 as a way to rebuild the nation’s social fabric, mobilize Rwandans to uphold important cultural values, and to spur a sense of dedication to their country. The culture of an *Intore* (a person who has received the teachings of *Itorero*) is regarded highly.

The modern *Itorero* program creates opportunities for both male and female participants to enhance positive values, build a sense of responsibility through patriotism, build a culture of volunteerism, and hone professional abilities. Through *Itorero* and similar initiatives, the GOR sought to reintroduce the culture of serving the country at no financial reward to encourage selfless service—attributes that contribute to accelerating progress and promoting social cohesion, peaceful cohabitation, and public integrity.

The National *Itorero* Commission was established to oversee implementation of the program and to ensure that all Rwandans have the opportunity to take part. By June 2017, the National *Itorero* Commission had trained more than 1,700,000 *Intore* from various sectors including teachers, health workers, executive secretaries, farmers, community policing committees as well as students from Rwanda and the diaspora. Among the topics included in the training were sanitation, handwashing, and appropriate hygiene practices at all levels (Jain 2011).

### **3.2 RECONSTRUCTION PERIOD (1995-2000)**

Like most other services in 1994, the sanitation and health sectors in Rwanda were in disarray. In the immediate aftermath of the war, the GOR, donors, relief agencies, and NGOs embarked on a massive housing reconstruction program. The reconstruction process, which included the construction of improved latrines in new housing, had a significant impact on sanitation coverage, with almost 1.5 million people gaining access between 1995 and 2000.

As basic capacity was a severe constraint, the government established institutes, such as the Kigali Health Institute, to train a cadre of skilled doctors and nurses and tapped into community-level health workers to extend services to households. Setting up these training institutes was an important factor in building local capacity within the health sector and may have contributed to important policy decisions in the next phase that emphasized a shift from curative to preventative approaches to improving health.

During the reconstruction period, attention started shifting from emergency relief to a development path. By 2000, the government outlined Rwanda Vision 2020, which set out a path to achieve macroeconomic stability and wealth creation to reduce aid dependency. This included transforming from an agrarian society to a knowledge-based economy, creating a productive middle class, and fostering entrepreneurship. HR development and a knowledge-based economy were main pillars for Vision 2020 (Ministry of Finance and Economic Planning 2000).

### 3.3 FROM CONSOLIDATION TO ACCELERATION

Once Vision 2020 was approved by the GOR and rolled out across the country, all institutions had to work toward achieving its targets. The institutions in charge of WASH, including MININFRA, MOH, MINEDUC, and MINALOC, had to design their sectoral and institutional strategic plans to reflect how they would practically achieve Vision 2020.

Each of these strategic sectoral plans also had to include human capacity action plans (generally in the form of internal working documents rather than published reports), which contributed significantly to effective implementation of programs and activities to address human capacity gaps. Other factors included the development of systematic multi-sectoral HR plans with clear targets called “*Imihigo*” (see Box 3), government interaction with training institutions, improved cross-institutional coordination together with DPs, and the formalization of informal CHWs into professional agents of health at the local level.

#### BOX 3. TRADITIONAL CUSTOMS FORMALIZED INTO ADMINISTRATIVE SYSTEMS

**Imihigo:** a practice where people publicly commit themselves to the achievement of a given task. Breaking this commitment is considered a great dishonor for the individual and the community. Following the government’s strategy to decentralize decision making, *Imihigo* was resurrected in 2006–2007 in the form of contracts between the President and district mayors. *Imihigo* also are signed between mayors and local leaders at the *Isibo* level and include among others a component related to improved hygiene and sustainable sanitation in all households.

**Ubudehe:** the tradition of mutual assistance or local collective action, especially in farming, used to encourage community support for poorer households without the ability to finance improved sanitation facilities including latrines.

**Umuganda:** a traditional cultural practice predating the colonial era that has been used in various forms to mobilize labor, usually for work on public projects, and often is used in constructing public and household latrines (Jain 2011).

Decentralization was a key reform of this period, establishing a basic institutional framework to improve sanitation coverage. The government’s main strategy to achieve good governance and sustainable economic development was to decentralize decision making to bring the development process closer to the people. This included, in 2017, the directive for all districts to establish district WASH boards, although the process of capacitating all these structures will take time (MININFRA 2020).

In terms of human skills development in sanitation and hygiene, Participatory Hygiene and Sanitation Transformation and *Hygiene et Assainissement en Milieu Scolaire* programs were initiated to promote hygiene and sanitation by influencing positive behavioral change and adoption of better practices among Rwandan communities. These programs also introduced concepts that later evolved and were mainstreamed under the national community health promotion program.

Until 2010, the policies covered sanitation but, in practice, mainly focused on water supply. Financing within the WASH sector also showed a strong bias toward water. Donor projects always had a sanitation component, but this was often ignored in implementation. Health systems mainly focused on curative approaches to improvements in health. This started shifting as stakeholders started advocating the need to focus more on preventative measures, and as the global and regional focus shifted toward the SDGs. In response, the government began to invest in effective low-cost promotional strategies to encourage household investments in improved sanitation. Table 3 summarizes the key goals and actions impacting the HR capacity requirements and HR development over the years.

TABLE 3. KEY SECTOR GOALS AND ACTIONS AFFECTING HR DEVELOPMENT			
	VISION 2020 (2000)	VISION 2050 (2021)	NSTI (2017)
Goal(s)	Transform Rwanda into a middle-income country by the year 2020.	Rwanda to become an upper middle-income country by 2035 and a high-income country by 2050.  Achieve safely managed water and sanitation targets by 2035.	Achieve 100 percent household access to basic sanitation services by 2024.
Key Actions	Shift from a curative to a preventive approach.  Adopt CBEHPP.  Adopt a policy that emphasizes empowering districts and private sector through public-private partnerships (PPPs) in water and sanitation.  Establish WASAC in 2014.  Develop National Sanitation Policy and Implementation Strategy (MININFRA 2016a and 2016b)	Empower districts in service delivery.  Set targets increasing household on-site access to safely managed sanitation services to 100 percent by 2035.  Incorporate SDG 6 targets.	Establish WASH MIS.  Increase number of households using basic sanitation services.  Increase number of safely managed sanitation facilities and services.

Since 2005, there has been a positive, results-based shift within the government. Top leadership responded to the sanitation crisis outlined by the international community and regionally, through AfricaSan and the eThekweni declaration (AMCOW 2008). Efforts have focused on development of household sanitation in rural areas, strengthening the enabling environment in terms of policy, regulation and institutional frameworks, and infrastructure development of sewage collection systems, storm water drainage, and solid waste, especially in urban areas. Skill development efforts focused mostly on community health promotion.

While developing policies and the national commitment to improving access to sanitation have been critical to progress, the process of translating these national targets and policies into action on the ground has been Rwanda’s biggest success. Adapting *Imihigo* and institutionalizing it to enhance local government reform and stimulate development, has been the key to this success (Jain 2011). Another key driver of change in Rwanda’s progress was the evolving role of the community who, as beneficiaries, were increasingly expected to view their own health and wellbeing as their most valuable asset. Apart from the strong focus on community mobilization described in Box 2, this also included a focus on CHCs (see Section 6).

### 3.4 HUMAN RESOURCE CAPACITY AND SECTOR STRENGTHENING EFFORTS

In line with the broader sectoral shift toward systems strengthening and with support from DPs, in 2019 Rwanda undertook a WASH sector bottleneck and building blocks analysis that entailed a broad look at the sector enabling environment. The analysis had a strong focus on sustaining the gains made in recent decades through Rwanda’s strong investment in WASH infrastructure and behavior change. This included an acknowledgement that for rural water and sanitation services to be sustainable, the full costs of providing the services must be matched indefinitely to sufficient sources of financing. Nine WASH building blocks were considered by sector analysts, namely: policy, strategy, and regulation; institution, and coordination; finance and budget; planning; monitoring; learning and adaptation; capacity building; service provision/infrastructure; and crosscutting issues (MININFRA 2019).



Under the capacity building theme, analysis also included a broader look at sector HR. Bottlenecks and skills gaps identified during that process are listed in Tables 6 and 7 (in Section 4). Several recommendations were made to address these gaps, including:

- Strengthen capacity of the national level institutions involved in management and regulation of the WASH sector as well as the private sector.
- Ensure availability of trainings on leadership, enterprise, and program management especially at national level for sector managers (MININFRA, MOH, WASAC, RURA, etc.).
- Support service providers in the establishment of Benchmarking Systems for service provision improvement.
- Build capacities of district WASH boards especially in rural areas.
- Support strengthening the capacity and role of the private sector in service provision:
  - Attract the interest of international organizations in providing advice and to promote PPPs with local companies; and
  - Identify opportunities for technical assistance from international utilities to local companies and potential joint ventures, as the case of Aquavirunga.
- Undertake different studies, such as on sanitation status, to establish baselines for customizing SDG indicators (MININFRA 2019).

MININFRA is regularly tracking progress on the implementation of the recommendations from the building block analysis. However, only WASAC has an HR Plan or Strategic HR Plan in place.

Since 2012, MOH has worked with DPs such as the U.S. Government and the Global Fund to Fight AIDS, Tuberculosis, and Malaria to rebuild the health system through a comprehensive Human Resources Health (HRH) Program. This seven-year program (2012–2019) trained a large, diverse, and competent health workforce and strengthened the capacity of academic institutions in Rwanda.<sup>4</sup> Outcomes of that initiative have contributed substantially to the reduction of child mortality and hygiene related diseases.

Coordination of other partners involved in HR capacity on sanitation is ongoing through regular meetings of the TWG and the WATSAN SWG. In these meetings, issues of HR development are discussed, especially with MINEDUC, which oversees the training institutions, including TVETs, and higher learning and research institutions, such as Integrated Polytechnic Regional Colleges.

### **3.5 ROLE OF COMMUNITY HEALTH WORKERS**

A portion of the informal sector in sanitation and hygiene has been formalized through the empowerment of CHWs. CHWs evolved from Volunteer Health Workers, who were recruited after the war to provide support for traumatized individuals in the wake of the genocide. Their role was gradually expanded to include basic preventive services including sensitizing community members on child health, family planning, nutrition, hygiene, and various diseases at monthly village meetings. Under the CBEHPP, each village elected a male and a female volunteer to serve as CHWs for the general population, working without any salary. Their commitment was to serve the country, receiving only some transport fees during a training or some prizes at the end of the year as incentives. Their role was officially recognized in the 2009 National Community Health Policy and in subsequent reforms.

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<sup>4</sup> The HRH Program was an innovative and ambitious 7-year health professional training initiative led by the GOR and funded by the U.S. President's Emergency Plan for AIDS Relief through the Centers for Disease Control and Prevention and the Global Fund to Fight AIDS, Tuberculosis, and Malaria (Global Fund) with an initial budget of approximately USD 150 million.

### **3.6 REMAINING CHALLENGES**

Rwanda's success in increasing access to sanitation and hygiene services has been fueled by a concerted effort and remarkable progress over the past 25 years in the development and application of policies, strategies, and regulations of the sanitation sector, as well as the construction of basic infrastructure for sanitation and hygiene at the community level across the country. Through the strong focus on community mobilization, a critical mass of people acquired skills that enabled them to cope with issues of basic sanitation and hygiene. Skills were provided using formal, informal, and traditional mechanisms of capacity building.

Yet, there is still some way to go for Rwanda to meet its target of 100 percent sustainable sanitation and hygiene coverage. GOR policy tools with agreed-upon national targets are largely in place, but there is still institutional fragmentation, mainly because the process of decentralization is still recent. While promotion programs to trigger demand for better sanitation have been effective, the market for rural sanitation needs to be strengthened. Improved sanitation technologies are too expensive for many households, and the network of suppliers and masons is weak. District WASH boards are not sufficiently skilled to carry out all their technical roles in sanitation, and the competition for financial resources between sanitation and water supply, particularly from the Ministry of Finance and Economic Planning, remains a challenge. Private sector interest in sanitation market investment is still limited and needs to be encouraged.

Appropriate skills will be required in fund community mobilization, project formulation, private sector engagement, affordable technologies, and regulation. As mentioned by various KIIs, one of the biggest challenges will be the considerable budget required to support sanitation in urban and rural areas. More and different skills also will be required in the face of climate change and an increase occurrence of pandemics. These and other skills gaps are explored in Section 4.

## 4.0 CAPACITY GAPS IMPEDING ON-SITE SANITATION AND HYGIENE

Through the NSTI and Vision 2050, the GOR set ambitious goals of reaching 100 percent household access to basic sanitation facilities by 2023/24 (GOR 2017) and safely managed sanitation for all people by 2035 (GOR 2020). While Section 3 outlined remarkable progress toward Rwanda’s achievement of this goal, the assessment also identified a number of challenges. This section discusses the HR capacity gaps impeding or challenging sanitation and hygiene sector achievement of its goals and targets. To guide this analysis, several sub-questions were formulated:

- Who are the actors responsible for the various functions in sanitation and hygiene?
- What are the functions that may face some gaps and what is the scale of such shortages?
- What are the technical and transferrable<sup>5</sup> knowledge and skills gaps per function?

The first question was largely answered in Section 2.3. This section seeks to further understand perceived gaps related to mandated actors or their HR capacity, and gaps in sector knowledge and skills with regards to on-site sanitation and hygiene specifically.

### 4.1 FUNCTIONS THAT FACE A GAP OF ACTORS

Although as indicated in Table I, there are many institutions involved in the sanitation and hygiene sector, key informants observed that some functions are not performed well due to a lack of required HR capacity and/or a lack of actors. Based on findings from the desk review, FGDs, and selected interviews, the country consultant undertook a qualitative scoring exercise to classify gaps in actors and reflect on the availability of jobs against functions. (The assessment did not include a detailed quantitative HR gap assessment.)

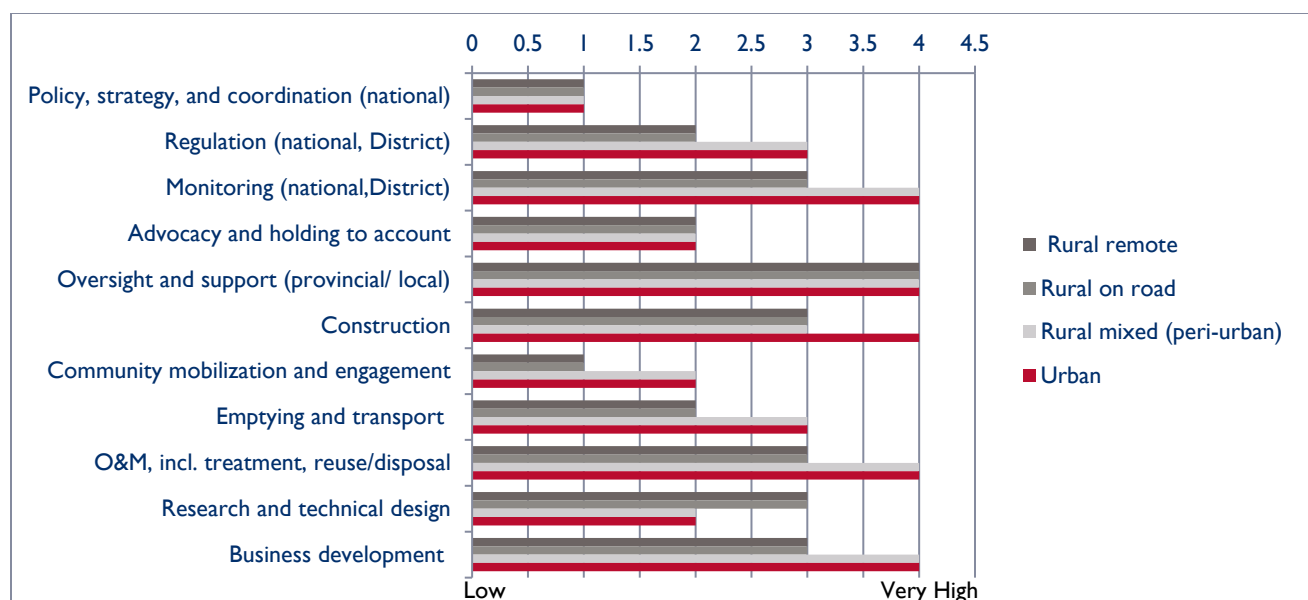
Gaps were scored from low to very high. Scores were assigned to each function by qualitatively assessing the number of mandated and sufficiently capacitated actors across the four geographic contexts (rural remote, rural-on-road, rural mixed, and urban). For example, functions related to policy, strategy, coordination were generally found to have a good number of actors and staff involved and scored low in terms of gaps, while functions related to business development were found to be missing a good number of actors, particularly in urban and rural mixed areas, and scored very high, indicating a significant gap (see Figure I).

Functions associated with community mobilization and engagement had a low gap score as there is a good number of actors perceived to be active in this space in rural areas, although less so in urban or peri-urban areas. While functions related to O&M, oversight and support, construction, and monitoring scored quite high, as key informants and the desk review pointed out that these functions face significant gaps in terms of capacity.

These high-gap functions are associated particularly with new developments in the sanitation sector – mainly decentralization, MBS, and the need to ensure O&M of infrastructure constructed in recent years.

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<sup>5</sup> Technical (knowledge and skills) refers to 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).



**Figure 1. Functions and Gaps of Actors**

Other functions facing a slight gap of actors include emptying and transport, research and technical design, and regulation in rural areas. Economic development of secondary towns and population increase (and increasing population density), especially in predominantly rural areas, lead to changes in the types of services requested and increase the need for regulation.

Positions are filled and functions are addressed by mandated actors (as in Table 1), but also by households, informal service providers, community-based structures, and volunteers, with the latter groups being much more represented in some functions than others. Compared to other functions, there is a high number of jobs associated with community mobilization and engagement across the rural geographies, and with policy, strategy, and coordination. This is explained by the high political priority given to sanitation and hygiene, where the government created new jobs along the spectrum, from top leadership to the lowest administrative unit of *Isibo*, in an effort to mobilize a large segment of the population for sanitation and hygiene. During the COVID-19 pandemic, additional jobs were created to advance hygiene practices and increase handwashing facilities (soap makers and handwashing facility constructors). The mobilization function includes all jobs associated with engaging the community to adopt good hygiene behaviors, end open defecation, and construct improved latrines, including through schools-based programs.

In contrast, the presence of jobs associated with emptying and transport, treatment, disposal, and reuse and even construction is minimal, especially in rural areas. This could be explained by a lack of demand for latrine emptying, transporting and treatment or reuse. Also, youth volunteers often construct latrines during community work (through “*Umuganda*”; see Box 3 and Section 4.2) and when latrines are full, they are not emptied by a service provider, but rather by the household owner who spreads the waste on his agricultural fields. It should be noted, though, that jobs linked to emptying, transport and treatment, reuse or disposal are more prevalent in urban areas where there is a stronger market.

Other functions where the number of available jobs was still considered low include advocacy and holding to account, particularly in rural areas where there is limited civil society engagement in this space; business development in rural areas; and community mobilization and engagement in urban areas.

## 4.2 WHAT ARE THE TECHNICAL KNOWLEDGE AND SKILLS GAPS?

In addition to understanding the key actors and the presence of jobs linked to the sanitation and hygiene functions, the assessment also undertook a participatory exercise during the FGD to get a sense of the key knowledge and skills gaps in the sanitation and hygiene sector, and the new or additional types of jobs that might be required to fulfill all functions. The outcomes of these discussions, triangulated with information derived from the KIs and the desk review, are summarized in Table 5 (next page).

From the discussions, it appeared that there are technical and transferable knowledge and skills gaps across all sanitation and hygiene functions. Sanitation has always been perceived as being a technical or engineering subject but, with the growing focus on behavior change, social mobilization, gender equality and social inclusion (GESI) and private sector engagement/business development, as well as funding challenges and environmental risks, sanitation-related functions increasingly require a much broader range of knowledge and skills.

Skills gaps were identified particularly in functions linked to policy, regulation, strategy, and coordination. These gaps were seen to be associated with critical problems around fund mobilization, coordination, private sector involvement, and supervision. Other skills gaps were associated with regulation functions to translate policy recommendations into legal frameworks.

More technical functions face skills gaps in areas of construction, design, O&M, and business development. Regarding oversight and external support functions related to local administration, the skills gaps include lack of management skills by district staff and lack of knowledge and skills to supervise/engage with the private sector. Capacity issues of the private sector include a lack of skills in appropriate design of user-friendly latrines and other inclusive WASH infrastructure.

Sanitation skills gaps were discussed in 2019 during the WASH bottleneck and building block analysis (see Section 3.4). In 2021, WASAC carried out a comprehensive needs assessment that built on the 2019 building block analysis, identifying the same but also some additional skills gaps. A conclusion of the WASAC assessment was that sanitation and sewerage are not properly addressed in rural areas (WASAC 2021). Gaps from both analyses are listed in Table 4.

TABLE 4. SKILLS GAPS IDENTIFIED IN PRIOR ANALYSIS	
2019 WASAC WASH SECTOR BUILDING BLOCK ANALYSIS	2021 WASAC LTD COMPREHENSIVE NEEDS ASSESSMENT
-	Lack of awareness and understanding of the national policy on hygiene and sanitation (2016)
Insufficient professionals skilled in the sector for the design, operation and maintenance of sanitation systems, poor competencies in the areas of pipe fitting, pump repairs, and masonry	
Inadequate capacities (soft leadership skills) for management and corporate managers to perform executive duties such as skills in communication, teamwork, decision making, problem solving, empowerment and delegation	
Inadequate waste sanitation engineering technicians and other required skills to cope with demand linked to the new construction projects of Kigali sewerage and semi-centralized sewerage systems in secondary cities	
Insufficient planning and implementation capacity to manage complex projects and monitor good performance of contractors (especially at local level)	
Inadequate capacities and mismanagement of sanitation under the PPPs	
Insufficient knowledge of sanitation technologies and marketing approaches	

**TABLE 5. KNOWLEDGE AND SKILLS GAPS**

<b>FUNCTIONS</b>	<b>KEY ACTORS</b>	<b>NEW JOBS LINKED TO THESE FUNCTIONS</b>	<b>COMPETENCY (TECHNICAL SKILLS/KNOWLEDGE) NEEDED</b>	<b>COMPETENCY (TRANSFERABLE SKILLS/KNOWLEDGE) NEEDED</b>
Policy, strategy, coordination (national level)	MININFRA/MOH/ MINALOC/MINEDUC	Financial Expert  Coordinator	Understanding of innovative financing  Understanding of the sector institutional context, coordination, stakeholder engagement, political engagement skills	Leadership skills, communication
Regulation (national, provincial, local government)	RURA/MOH	Business Developer	Business legislation, private sector engagement, legislation skills/licensing	Communication and facilitation skills
Monitoring (national, provincial, local government)	MININFRA/MINALOC/ WASAC/districts	Data Manager	Skills in information and communication technology in database, data collection with community, data analysis and reporting	Communication, presentation, computer skills
Oversight and support (provincial, local government, municipality)	DPs/districts/WASAC	Integrated Project Manager	Skills in coordination/social mobilization/private sector engagement  Technical knowledge in line with relation between hygiene, health and environment, climate change impact	Leadership skills, communication skills, project management skills
Community mobilization and engagement (national, local government, municipality level)	MOH/districts	Behavior Change Expert	Understanding of behavioral change communication theories, methods; developing a behavior change communication design for a program; practical communication skills  Intercultural understanding, communication, and interactive skills  Civil society engagement	Communication, project management, relationship management
Advocacy and holding to account	NGOs/DPs	Institutional Engagement Specialist  Communication Specialist	Diplomacy skills, understanding of sector institutional context and processes, lobbying skills, advocacy and influencing skills  Communication skills, campaign skills, communication strategy	Communication and stakeholder engagement skills

**TABLE 5. KNOWLEDGE AND SKILLS GAPS**

<b>FUNCTIONS</b>	<b>KEY ACTORS</b>	<b>NEW JOBS LINKED TO THESE FUNCTIONS</b>	<b>COMPETENCY (TECHNICAL SKILLS/KNOWLEDGE) NEEDED</b>	<b>COMPETENCY (TRANSFERABLE SKILLS/KNOWLEDGE) NEEDED</b>
Design and construction	WASAC/district WASH boards/masons	Latrine Designer/ Maker  Handwashing Facility Constructor	Skills in designing affordable and technical viable and sustainable technologies in sanitation  Climate resilient designs, adaptative design	Entrepreneurial skills
Emptying and transport	Private operators	City Latrines Emptier  Liquid Waste Transporter	Understanding of cost-effective emptying techniques, and affordable transportation schedules for waste	Communication, scheduling/ planning, customer relations
O&M (includes treatment, disposal, and reuse) (household, municipality)	WASAC/private operators/districts	Solid and Liquid Waste Reuse Plant Operator  Reuse Technician	Knowledge on how to reuse of solid and liquid waste, skills to operate a plant	Management, communication, information technology (IT) skills
Research and technical design	MINEDUC/universities/ technical schools	Market Researcher and Analyst  Research and Development Specialist	Research, analytical engineering (including chemical and climate change impact)  Market research and analysis	Planning and scheduling  Engaging stakeholders
Business development	Ministry of Trade, RDB, Private Sector Federation	Supply Chain Developer/Manager  Sales and Marketing Specialist  Accountant and Financial Manager	Market analysis and business modelling Entrepreneurship/business development Marketing  Supply chain management  Business financing (i.e., banking, micro-finance)	Planning, data collection, management and analysis, IT skills, leadership skills financial management

These skills gaps are associated with high levels of pipe leakage and issues with sanitation, particularly in urban and peri-urban schemes, due to poor design and community engagement in infrastructure planning. There also are no customer satisfaction feedback mechanisms on the quality of sanitation services offered.

With functions related to emptying and transporting, skills gaps mentioned during the FGD were in relation to affordable techniques of emptying and transporting the solid and liquid waste.

The 2019 Building Block Workshop also sought to understand factors underlying or resulting from skills gaps in sanitation. These are summarized in Table 6. (Section 8 proposes a set of recommendations to address some of the skills gaps.)

**TABLE 6. BOTTLENECKS CAUSING OR LINKED TO SKILLS GAPS**

Absence of a broad national HR development strategy and action plan for the water and sanitation sector and hygiene
Insufficient regular mentorship for sustainability of sanitation services
Insufficient harmonized training tools for capacity building at household level (through CHCs), public institutions, practitioners, latrines builders
Absence or insufficiency of systematic monitoring and evaluation systems, tools/instruments, and monitoring capacities at central and decentralized levels, leading to weak evidence-based decision making, weak strategic targeting of resources for investment, and low effective sector performance due to insufficient information
Lack of legal framework to support implementation of effective sustainable sanitation services, as recommended by standard best practices
No national guidelines on recycling and reuse of wastes (especially solid waste)
Lack of collaboration between institutions working in sanitation, health and drinking water



## 5.0 MARKET-BASED SANITATION

MBS seeks to improve sanitation coverage by building the sanitation market of goods and services for which the customer makes a full or partial monetary contribution (with savings and/or cash equivalents) toward the purchase, construction, upgrade, and/or maintenance of their toilet from the private sector (USAID 2018). MBS does this by strengthening domestic private sector supply of, and stimulating and activating customer demand for, sanitation goods and services.

MBS will help governments reach their SDG 6.2 targets by 2030 in three fundamental ways. First, it leverages household investment in an improved toilet. Second, it leverages domestic private sector investment and builds local private sector capacity to deliver more affordable, desirable improved toilet options to more people and places. This can lead to a domestic sanitation industry with greater resilience, sustainability, and capability. Third, it serves low-income households, supporting governments to achieve the programmatic principles of sustainability and scale more equitably and inclusively (UNICEF 2020).

This section explores the question, “what are the HR requirements to deliver market-based sanitation?” Several sub-questions guided the analysis:

- What are the incentives and barriers for entrepreneurs to enter the sanitation market?
- What are the competencies (skills, knowledge, and attitudes) needed to deliver MBS (including what knowledge and skills are missing to enable MBS across all functions described earlier)?

In Rwanda, promotion of MBS can be traced to the National Sanitation Policy as part of increasing overall private sector participation. The government has the mandate to improve the enabling environment for service providers (e.g., masons, constructors, shops, vacuum tanker operators, solid waste operators, and recyclers) so they can provide affordable services to households, industries, and trade (MININFRA 2016a). According to the National Sanitation Policy, the sanitation sector will continue to promote delegated management of sanitation service provision through private providers. The private sector also will be encouraged and supported by the government in developing capacities for investment, construction, and service delivery in sanitation and solid waste management. This sectoral drive is further supported by the broader Entrepreneurship Development Policy, supporting private sector entrepreneurs and providing the necessary enabling environment for private sector growth and development in general (Ministry of Trade and Industry 2020).

One of the success criteria for MBS programming is that it leads to a market of affordable products such as latrines that can be purchased by those who need them, at a price point that is affordable to most (acknowledging that subsidy may be required for the poorest and most vulnerable people). Moreover, sustainability needs to be ensured, in terms of sustained use of sanitation, sustained business viability, and sustained availability of toilet products on the market. With respect to these criteria, MBS is at a nascent stage in Rwanda.<sup>6</sup> Contractors and private operators are still seen as suppliers, while in MBS, they need to be looked at as business partners. Sanitation products do not yet cater sufficiently to poor, vulnerable, and disabled populations. The sanitation market is still highly dependent on support from development partners such as UNICEF, USAID, WaterAid, and Water for People.

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<sup>6</sup> According to personal communication from Chairman of the Association of Sludge Emptiers in Rwanda (ASSERWA), there are now 16 companies under its umbrella, 7,000 masons in Eastern Province, 12 emptiers, and 12 transporters. ASSERWA was set up with support from Water for People.

## 5.1 INCENTIVES AND BARRIERS TO ENTER THE SANITATION MARKET

The current HR capacity in the sanitation and hygiene private sector is related to the number and type of viable businesses active in MBS. This section discusses the incentives and barriers to sanitation and hygiene business development highlighted by the KIIs and FGD, which impact job availability and development, and inform the types of knowledge and skills required.

**Incentives:** Based on information collected during this assessment, there are no specific incentives for entrepreneurs to enter the sanitation market; however, according to the Investment Law, general incentives are applied to strategic sectors such as tourism, energy, transport, and health. It typically takes less than one hour to open a company in Rwanda, illustrating the government’s interest in facilitating and encouraging entrepreneurship.

**Barriers:** Participants in the FGD identified barriers such as the lack of replicability of efforts by various DPs, lack of access to enterprise capital hampering entrepreneurs’ ability to start and grow sanitation enterprises (“capital” barriers), and lack of qualified commercial actors (“availability” barriers). Water for People found that these capital barriers also are related to a lack of appropriate skills in finance, project design, and loan negotiation among sanitation entrepreneurs (USAID 2022). Participants also cited language barriers related to sector regulations and standards being available in English, if accessible at all, a lack of guidelines for MBS promotion, and challenges related to enterprise license fees and obtaining licensing from RURA. Other barriers were related to lack of materials and local spare parts, high import costs, lack of innovation and technical skills (e.g., on new product solutions or latrine construction for different soil types and water table conditions), and lack of skills in demand generation, marketing, and sales of appropriate and affordable toilets. Moreover, the desk review pointed out a general lack of knowledge on and active demand for improved latrines and safely managed sanitation services among the clients, with the majority still investing in/constructing basic facilities, and low willingness and capacity to purchase toilets with savings and/or cash equivalents, for example due to seasonal cash flow fluctuations.

The USAID *Isoko y’Ubuguzima* (or THRIVE WASH) program implemented by Water for People undertook an assessment for the Association of Water and Sanitation Operators (FEPEAR) to understand their capacity needs. While this assessment was focused particularly on water operators (because, to date, FEPEAR had been unable to attract sanitation operators), it did identify some elements that may be similar for sanitation operators in the future (Box 4).

### BOX 4. USAID ISOKO Y’UBUZIMA ASSESSMENT OF PRIVATE (WATER) OPERATOR CHALLENGES (USAID 2022)

**Being eligible for contracting** – To get a contract, companies should have qualified staff and accounting systems. An accountant should be hired according to the regulations, but the reality is that only 54 percent of private operators have this, as accountants are noted to be too expensive.

**Business plans are written but not implemented** – To get a license, business plans are written, but they are not used beyond that for implementation nor for regulators to check. The result is poor planning both of activities and finances.

**Procurement processes are not in place** – While procurement helps to streamline processes, reduce raw material costs, and identify better sources of supply, many do not have procedures or units/committees in place to make this happen. Private operators indicate their businesses are too small to have these units and skills.

**Human resource management is lacking** – HR management is still mainly done by managers, without any separate unit, or HR framework. Only 31 percent of private operators do performance appraisals on a yearly basis, and there is a high turnover due to poor remuneration and benefits. While female participation is low, they are relatively high in decision making positions.

## 5.2 COMPETENCIES NEEDED TO DELIVER MARKET-BASED SANITATION

To be successful, MBS in Rwanda will require special skills in all functions of sanitation, from policy, to regulation, to implementation. Table 7 provides an overview of skills required for successful implementation of MBS, as discussed during the FGD. These skills span across the public and private sectors. There is a need to empower policy makers with skills in effective business development, to encourage the effective engagement of the private sector in sanitation and hygiene service delivery.

<b>FUNCTION</b>	<b>SKILLS/KNOWLEDGE REQUIRED IN MBS</b>
Policy, strategy coordination (national)	Small companies' business development, establishment and management of sanitation kiosks, human-centered product design and promotion, equity, inclusivity, private sector engagement
Regulation (national/regional)	Business development, decentralized business, incentivization, private sector promotion, licenses
Monitoring (national/regional)	Monitoring, tracking, data analysis
Advocacy and holding to account	Communication, business promotion, private sector engagement
Oversight/management (provincial/local)	Coordination, supervision
Construction	Market research, human-centered product design, construction optimization
Community mobilization and behavior change	Partnerships' skills development, communication, coaching, conflict resolution, negotiation
Emptying and transporting	Sales, market skills, small business training
O&M	Sales data collection, tracking, analysis, supervision, technical repair/maintenance skills
Research and tech design	Community engagement, coordination, business
Business development	Accounting, project development, market research

MBS requires different sets of skills and expertise at different stages of the process. Skills and expertise needed in the design phase of an MBS intervention include market research, human-centered product design, construction optimization (to ensure construction of high-quality toilet models, appropriate to context), small enterprise business development, and sales and marketing. In the implementation phase, MBS implementing partners need field-based operational teams with strong coordination, supervision, and process monitoring and action learning capacity, as well as experience working effectively with local government. Specialized technical skills during implementation include small business training, mentoring and coaching, sales and marketing, sales data collection, and tracking and analysis (UNICEF 2020).

The government has established a suitable environment for the promotion of private sector engagement in sanitation, but it still focuses on supply-driven approaches through which projects, DPs, and government institutions tend to drive the supply of sanitation products—some steps removed from a situation where the market itself ensures sustained access to local market supply of affordable, desirable household sanitation products and services. Businesses have been established that are involved in transport of solid wastes in cities; other companies have been established to supply appropriate latrines; and others are involved in emptying and reuse of solid waste. Most of these companies are supported in some way by the government and local districts in their regular efforts (for example, local administrations supporting businesses in the collection of waste collection fees from households) and can receive some ad hoc training by development partners. Despite all ongoing efforts, barriers persist,

and there are still gaps in terms of skills and knowledge for effective MBS across the entire sanitation value chain. These include lack of appropriate skills in business development. However, representatives of local companies participating in the FGD indicated strong willingness to promote MBS and to learn and acquire updated skills in different stages of the sanitation value chain, from market sales research to sales marketing, to supply and delivery of products to customers.

In summary, MBS will require a mindset change, seizing the opportunities provided by the current sanitation policy. On the demand-side, suitable regulations, guidelines, and training materials need to be developed to build and activate household demand and increase willingness to purchase and invest in durable, hygienic toilets. Section 8 proposes recommendations for HR and skills development to support successful implementation of MBS.

## 6.0 COMMUNITY HEALTH CLUBS

CHCs are part of the CBEHPP established in 2009 by the MOH, with the main goal of improving community health by reducing disease burden related to inadequate sanitation, poor hygiene practices, and drinking unclean water, through participatory environmental health dialogues and actions in schools and communities. CHCs help mobilize people at *Isibo*, village, and school level through positive peer pressure and participatory training, thereby contributing to government prevention efforts against environmental diseases.

This assessment set out to answer the question: what is the role of CHCs in delivering sanitation and hygiene messaging, products, and services and what are important HR considerations? Sub-questions included:

- Who are the members of the CHCs (including gender, caste, ethnicity), and what are their educational backgrounds?
- How are CHCs organized, and who guides and oversees what they do? Do they receive sufficient support and guidance?
- How are CHC members recruited and selected, and what training do they receive?
- What benefits do CHC members receive, or what may be incentives for people to join them? Are there opportunities to grow into a municipal, community department, or health center role?
- What are the conditions of work, and what is the sustainability of volunteer input?

### 6.1 ORGANIZATION AND TRAINING OF COMMUNITY HYGIENE CLUBS

Initially, CHCs were limited to the village level and could be composed of three to six members (each representing a household) per club. But since the revision of CBEHPP in 2020, CHCs are formed at community, *Isibo*, and school level. Membership can be between 10 to 20 households, depending on the number of households in each *Isibo*. Members meet twice a month for one to two hours in Community Health Dialogue Sessions (CHDS) to learn about health and hygiene with a goal of monitoring all public health issues of the community (MOH 2020c)

CHCs are organized jointly by MOH and MINALOC. Both ministries have officers at district and sector level (District Sanitation and Hygiene Officers [DSAHOs] and District Environmental Officers). That work jointly with officers at sector level and at health centers to implement the CHC program. CHC members are selected at each *Isibo* by MINALOC. Figure 2 presents the CHC organizational structure.

CHC members are trained at *Isibo* level by elected Community Hygiene Dialogue Session Facilitators (CHDSF), who receive training from the CHC Supervisor/CHWs, and the village/CHC Coordinator or Head of Village. The training includes modules, or cluster, on diseases, water and sanitation, hygiene, income generation for WASH activities, WASH inclusion, and ecological health. By way of illustration, the diseases cluster covers topics related to prevalent diseases conditions, diarrheal diseases transmission and prevention, intestinal parasites/worms, skin diseases, respiratory tract infections, and malaria, while the water and sanitation cluster includes topics related to water point sources, household drinking water treatment and storage, the sanitation ladder, and waste management. The hygiene cluster includes personal hygiene, handwashing, menstrual hygiene management, BABY WASH, and food safety, and the WASH Inclusion cluster focuses on wash and disability and the role of gender in WASH promotion.

MOH, in collaboration with MINALOC and MININFRA, identifies the districts for CBEHPP implementation. The MOH conducts orientation meetings with districts officials on new training modules and dialogue tools. The MOH also nominates, establishes, and certifies a national team of

CBEHPP master trainers, made up of individual local consultants, and provides refresher trainings for the Master team as needed (MOH 2020c). From here, training cascades downwards to the *Isibo* level.

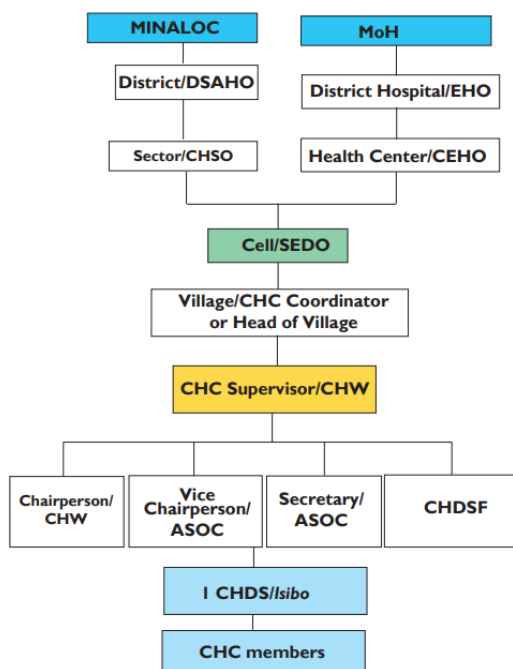


Figure 2. CHC Organigram (MOH 2020a)

The Master team trains the DSAHOs, EHOs, and Disease Prevention and Health Promotion Officers (DPHPO). They in turn cascade the training down to the sector level by training the Health Center EHOs and the officers in charge of social affairs, who train the cell level CHWs, Social Economic Development Officers (SEDOs), heads of villages, and CHC facilitators in their catchment areas. The sector level team must ensure that the cell team is well-equipped in terms of skills and training materials to implement the program. The trained team at the cell level will then train elected CHDSFs, who will facilitate the CHC dialogue and training sessions.

Each CHC member needs to be registered in the registry book and be given a membership card. On the membership card, the training sessions and homework assignments are listed and attendance is noted. One member from each household is the primary member of the CHC (father, mother, or adult member of the household). Members who have not completed some topics must complete missed sessions in the next round.

While capacity levels to deliver the training are generally high at the upper levels since they are delivered by skilled personnel from the MOH, as the trainings cascade down toward the local level some loss in quality is expected, although the assessment did not unearth any evidence to support this.

Overall, KIIs confirmed that the CHC model has had positive impacts on sanitation and hygiene knowledge levels. Community members do not receive specific stipend or monetary benefits, beyond the knowledge and skills gained, but have nonetheless shown interest and organize themselves to find free time for learning. Since CHCs receive some training on income generating activities, some communities also have started activities such as soap or brick production, or managing public latrines, with some of these initiatives developing into small businesses that can access loans and grow further.

## 6.2 SUSTAINABILITY

CBEHPP is seen as an important contributor to Rwanda’s progress in terms of sanitation and hygiene access and practices. The success of CBEHPP implementation has been largely associated with traditional values of patriotism, resilience, working on targets, volunteerism, and *Umuganda*. These values have been incorporated in the administrative system of the country throughout its governance system and are driving Rwanda’s socio-economic development.

But the model also faces challenges. A 2019 study of implementation challenges for CHCs in Rwanda pointed out that there is a need for better coordination, as implementation is fragmented and predominantly donor driven; sustainability of the model may be compromised if the funding gap is not addressed; improved accountability mechanisms, district , and harmonized monitoring are needed to improve the sustainability and functionality of CHCs, and more needs to be done to emphasize inclusiveness (Ekane et al. 2019). While some of these issues require broader institutional and

programmatic shifts, these challenges also point to weaknesses in skills, particularly around coordination, monitoring, accountability, and GESI.

MOH is aware of the challenges CBEHPP is facing, especially those associated with external funding and associated conditionalities. It has therefore prepared a revision of the roadmap of the CBEHPP, placing emphasis on working with local administrative units of the sector, cell, village, and *Isibo* to strengthen its sustainability component. While exact numbers of people enrolled in or fully trained by CHCs were not available from the MOH, the current level of functioning CHCs (regularly convening and proceeding through the modules as intended) is about 45 percent.<sup>7</sup> It will therefore be of interest for the sector to carry out a more in-depth investigation on the effectiveness of the CHC model, as well as on the potential for further engagement of the many people trained as facilitators or otherwise as part of the CHC program.

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<sup>7</sup> Personal communication from MOH staff.

## 7.0 MOVING TOWARD SUSTAINABILITY

This assessment builds on the concept of area-wide sanitation, which goes beyond the household and community level to consider area-wide (district/county) and market systems-level approaches (USAID 2020). Sustainability in this case involves systems aspects such as HR needed to deliver sanitation and hygiene services, environmental aspects such as groundwater quality and environmentally safe reuse of organic waste by the agricultural sector, and programmatic aspects such as the effective combination of different models of sanitation service delivery and effective expansion of MBS. In this light, the question this assessment sought to explore is: what are the additional HR needs to move to universal, sustainable, safely managed sanitation, and what are the GOR's plans to address these needs? Sub-questions included:

- What are the jobs and positions known or expected to be needed to move toward universal, sustainable safely managed sanitation and hygiene? Where should the responsibilities for these tasks lie?
- What are the critical knowledge and skills needs to move to sustainable safely managed sanitation and hygiene, in which of the key functions?
- How does Rwanda anticipate developing these competencies among existing staff and volunteers and/or among graduates/new professionals coming into the sector?

### 7.1 JOBS AND REQUIRED POSITIONS FOR SUSTAINABLE SAFELY MANAGED SANITATION AND HYGIENE

To understand additional HR requirements for ensuring universal, sustained, safely managed sanitation and basic hygiene services in Rwanda, this assessment identified critical skills gaps and missing job positions linked to a number of key themes and components, as outlined below. Overall, key required skills and knowledge continue to include fund mobilization and financing mechanisms for the responsible government institutions to implement the existing policies and strategies to achieve Vision 2050. Similarly, across all functions, skills and competencies related to partnership building, stakeholder interaction, cross-sectoral coordination, and collaboration will be essential.

**Gender equality and social inclusion.** Functions where GESI concerns were particularly highlighted included policy, strategy coordination; regulation; advocacy/holding to account; and community mobilization and behavior change. With regards to policy, strategy, and regulation, as well as for civil society advocacy and accountability roles, an important new position in this respect would be that of a GESI expert. Such experts should be employed across the key ministries, and by (I)NGOs and DPs, if not already in existence. Knowledge and skills would include, among others, rights-based programming and policy development, pro-poor regulation, and effective engagement of marginalized groups. For community mobilization, strengthening GESI outcomes should focus on building gender and inclusion-related skills and competencies of community mobilizers, CHWs, and behavior change specialists.

**Monitoring, accountability, and transparency.** The GOR has set ambitious goals, requiring the large-scale mobilization of multiple sectors, actors, and administrative levels, down to the *Isibo* level and the CHCs. To ensure effective implementation of roles and functions and achievement of outputs, outcomes, and targets, solid monitoring and reporting systems and skills are required, including at the key ministries as well as at the local administrative and community levels. It also requires a commitment to transparency and accountability, which, at a minimum, demands that all stakeholders have knowledge and understanding of the goals, targets, and implications of sanitation and hygiene interventions and service delivery.

In key sector ministries such as MININFRA, MOH, and MINALOC, required skills and competencies include effective communication, transparency, and accountability mechanisms; impact assessments;



monitoring and evaluation; and data analysis. In WASAC, district and local governments' skills and competencies include project formulation, stakeholder engagement, communication, data collection, management, and analysis. Within CSOs and (I)NGOs active in advocacy and accountability, similar required knowledge and skills include impact assessment, data analysis, social, financial and/or environmental auditing, and policy briefing and communications.

**Private sector engagement and MBS.** For the policy, strategy coordination function, key actors in MININFRA, MOH, MINALOC, MINEDUC, and RURA require more knowledge on effective private sector engagement and creation of an enabling business environment. The latter also concerns the regulation function, and knowledge related to small business development, effective licensing, and tariff structuring. This may require bringing in business and private sector specialists.

With regards to design and construction, emptying and transport, and business development, knowledge, and skills concern particularly the private sector itself, but also the public sector in its engagement with business, as well as WASAC. Skills and knowledge gaps here concern business models, including for emptying and transport businesses and PPP models, negotiation and contract management, supply chain development, latrine design for challenging (hydro)geological conditions, worker safety, and basic business skills such as financial management, data management, and marketing. Lastly, across publicly or privately owned and/or managed infrastructure, capital maintenance and asset management will be key skills and jobs within the larger O&M function.

**Environment, climate change, and sustainable natural resources.** The GOR emphasizes the need to minimize the environmental impact of sanitation solutions (e.g., groundwater contamination) and maximize productive use of human and organic waste (including in agriculture). In addition, the government is increasingly aware of the need to understand and build resilience to deal with the effects of climate change, including extreme weather events such as floods and droughts. Therefore, skills and competencies should be ensured, and appropriate positions created at multiple levels. Key sector ministries should consider recruiting environmental impact assessment experts and planners/policy developers with an environmental/climate change related skills-base. Regulators such as RURA could benefit from the contribution of environmental lawyers. At the implementation level, service providers need knowledge and skills on “green,” environmentally sound construction and service delivery, and district and local governments need skilled staff to enforce and monitor compliance with relevant policies and regulation along the sanitation value chain.

## **7.2 HOW RWANDA IS PLANNING TO DEVELOP THE NEEDED COMPETENCIES**

The MININFRA, in close collaboration with the MOH, MINALOC, and MINEDUC, will continue coordinating all efforts geared toward sustainable sanitation and basic hygiene at households and schools. As such, they have clearly defined roles and responsibilities: both MOH and MINALOC play a great role in community mobilization throughout their institutions, down to the *Isibo*. However, gap analysis of missing skills at *Isibo* will have to be carried out for effective community mobilization.

The MOH provides technical guidance on hygiene and behavior change, while the MININFRA coordinates efforts in line with fecal sludge management and liquid and solid waste. In terms of institutional coordination, MININFRA has adopted the SWAP to coordinate government institutions and DPs to strengthen inter/intra sectoral coordination and rationalization of DPs initiatives and avoid duplication of efforts. SWAP has proven to be efficient in terms of coordination of institutions at policy level, and from discussions with policy makers, it became clear that it will be important to place sanitation-related HR development higher on their agenda, while the aspect of hygiene HR development will be discussed through MOH's Thematic Working Group on Environment and Hygiene.

Working jointly with RDB in terms of skills development will be very important. Since September 2018, RDB hosts the Chief Skills Office. This office is mandated to provide effective oversight and coordination in the skills development and employment promotion ecosystem for economic transformation of Rwanda. While relatively new, the office increasingly works jointly with ministries such as MININFRA and other technical institutions in planning and implementation of appropriate skills. It is mandated to develop capacity development strategies and actions to respond to private sector needs, conduct labor market analyses, identify current and future skills needs in priority sectors and for key investment projects, and facilitate labor market integration through innovative partnerships and interventions. Collaboration and effective linkages between RDB, key institutions in charge of sanitation and hygiene, and key training institutes and universities will be important to inform and develop a comprehensive HR development strategy.

At district level the elaboration of District WASH investment plans will also play a critical role as they need to incorporate all aspects related to capacity building and skills development at implementation level. It is likely that needs assessments will have to be carried out to guide the elaboration of these investment plans.

## 8.0 KEY FINDINGS AND RECOMMENDATIONS

### 8.1 KEY FINDINGS

**Our assessment indicated that the country has a good enabling environment framework for the sectors of sanitation and hygiene in terms of policies, regulations, institutions, and strategic plans.** Access to basic sanitation services is relatively high, although concerted effort is still required to reach in particular the safely managed sanitation and basic hygiene targets. The sector is confronted with a rapid urbanization rate, increased population density, climate change impact, and increased pandemics, all of which will have an effect on sector HR. However, there are also opportunities with a growing focus on private sector participation, digitalization, green jobs, and gender inclusivity.

Regarding the process of HR development in the sector, various institutions have worked together since 1994 through phases of reconstruction, consolidation, and acceleration and achieved remarkable results in the areas of sanitation and hygiene. With the ongoing National Transformation, Vision 2050, and SDG 6 targets, **HR will further be required to achieve agreed targets of universal and sustainable safely managed sanitation and basic hygiene services.**

There are a **range of mandated and active actors along the decentralized structures**, from national down to village levels. Communities and the individuals are important actors themselves and are mobilized through traditional structures and CHCs, effectively becoming part of the sector informal/volunteer workforce.

The quick assessment of the CHC model indicated the **important role played by the communities in sanitation and hygiene functions linked to mobilization and prevention of environmental diseases.** Through the cascaded training model, a range of health, hygiene, and sanitation related knowledge and skills have been built among key personnel across the decentralized structures. CHCs have substantially contributed to achieving the Millennium Development Goals targets and, in line with the latest iteration of the CBEHPP, will continue to play an important role in achieving SDG targets. Challenges were identified, including insufficient coordination, inconsistency of CHC implementation and monitoring across the country, and funding shortfalls. Less than half of the constituted CHCs were also said to be active. The overall strong focus on traditional values such as volunteerism, and the growing focus on income generating activities and inclusion, are expected to contribute to increased sustainability and effectiveness of the CHCs.

**Private sector engagement and MBS are considered important potential contributors** to accelerated growth and progress against targets. Although some efforts are evident in terms of strengthening an enabling business environment, more is required in the space of regulation, incentivization and removal of barriers for sanitation enterprises, building knowledge and understanding of effective MBS and business development, and skills building for quality design and construction, and emptying, transport, treatment, and reuse of waste, as well as supply chain management, partnering processes, and contract negotiation.

Regarding the sanitation and hygiene functions, more actors were linked to the overall rebuilding of the country and the sector in terms of policy, regulations, institutions, and behaviors, while **shortages are associated with more technical functions linked to ensuring technical quality of toilets, business development, safely managed sanitation, oversight, and monitoring.** Other skills shortages link to challenges related to climate change and environmental impact of sanitation, GESI, and sustainability, skills that are associated with required new jobs.

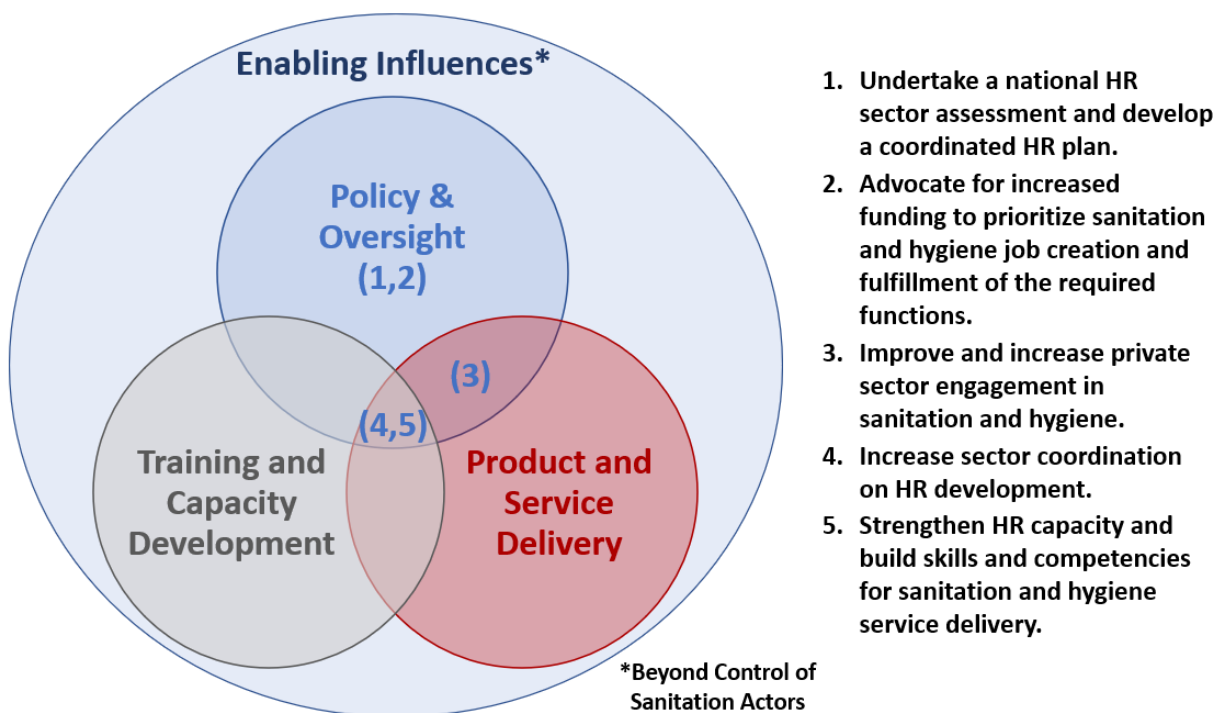
While this assessment did not explore the supply-side of sector HR in detail, the findings indicate there is a **need to improve coordination of actors in the sanitation and hygiene sectors around HR development**. Opportunities exist through the strengthening of existing mechanisms such as the SWAP and TWG, and increased participation of the MINEDUC, universities, and TVETs in the development of a critical number of appropriately skilled personnel.

In general, jobs and skills development for universal, sustained, safely managed sanitation and basic hygiene services in Rwanda need to focus on **partnership building and stakeholder engagement, cross-sectoral coordination, and inclusive programming** that aims to involve all stakeholders including disabled, vulnerable populations, youths, women, and girls.

## 8.2 OVERARCHING RECOMMENDATIONS

While the analysis presented in this report is the result of a limited, light-touch sector assessment and review, it resulted in the set of preliminary recommendations, presented below. Some of these were discussed with informants at the FGD, but the full set of recommendations was not validated by key sector stakeholders. They can serve as a starting point for further conversations in the sector on how to ensure a sufficiently skilled and sustainably employed workforce to deliver and sustain Rwanda’s sanitation and hygiene targets and development goals. All will require strong will and collaboration among concerned institutions to overcome any barriers.

Recommendations are aimed at primary stakeholders/institutions active in the sector and are structured around key areas of engagement, namely: policy and oversight, training and capacity development, and product and service delivery. Some recommendations apply to more than one category of stakeholder as indicated in Figure 3.



**Figure 3. Overview of Recommendations**

The recommendations are presented in Table 8 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 capacity needs assessment.

<b>TABLE 8. RECOMMENDATIONS BY LEAD STAKEHOLDER</b>			
<b>ACTION</b>	<b>RESPONSIBLE</b>	<b>TIMEFRAME (SHORT TERM, MEDIUM TERM, LONG TERM)</b>	<b>COMMENTS</b>
<b>INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT</b>			
<b>1. Undertake a national HR sector assessment and develop a coordinated HR plan.</b>			
<p>Conduct a comprehensive sanitation and hygiene sector HR capacity gap analysis and formulate a costed HR development plan:</p> <p>a. Take stock of current and expected future gaps and needs to inform skills development and job training programs, including for future positions.</p> <p>b. Informed by the capacity gap assessment, consider the establishment of district-level mechanisms or programs to strengthen HR capacity of sector institutions and partners, including private sector.</p> <p>c. Undertake an in-depth investigation on the effectiveness of the CHC model and explore the potential for further engagement of people trained through the CHC program.</p>	<p>MININFRA/MOH/MINALOC, RDB, Ministry of Finance and Economic Planning, with DP support</p> <p>MININFRA/MINEDUC/MINALOC with sector specialized training institutions, University of Rwanda</p>	Medium term	Some assessment, planning and programming activities may be captured and financed through the coordination mechanisms discussed under Recommendation 4.
<b>2. Advocate for increased funding to prioritize sanitation and hygiene job creation and fulfillment of the required functions.</b>			
Advocate for more funding and investment in sanitation and hygiene sectors and sector HR, including for improved WASH services in rural areas.	MININFRA/MOH/MINALOC	Short to medium term	A WASH Financing Strategy was developed but is not yet public; needs to be reviewed and implemented.
<b>INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT IN CONJUNCTION WITH SERVICE PROVIDERS</b>			
<b>3. Improve and increase private sector engagement in sanitation and hygiene.</b>			
<p>a. Improve the enabling environment for effective MBS through policy reform, development of standards, and support/incentivization of sanitation enterprises.</p> <p>b. Conduct an assessment of needs, drivers, and barriers for effective MBS.</p> <p>c. Channel more public resources toward the development of private operators' capacity.</p>	<p>MININFRA/RURA/Private Sector/RDB/MINALOC/DPs</p> <p>MININFRA/SWG/RDB</p>	Medium term	MBS requires a mindset change in terms of sanitation policy, to encourage local business, community-led initiatives, and household choice in accessing sanitation goods and services. Revised policy then needs to be

**TABLE 8. RECOMMENDATIONS BY LEAD STAKEHOLDER**

ACTION	RESPONSIBLE	TIMEFRAME (SHORT TERM, MEDIUM TERM, LONG TERM)	COMMENTS
d. Research best fit sanitation and hygiene models and products for various market segments and engage and train entrepreneurs on the roll-out of these models and investigate who can be sales agents.	MININFRA/MINALOC  Research institutions, private companies, RDB		supported by regulation and rules of engagement for private sector actors.
INSTITUTIONS RESPONSIBLE FOR POLICY AND OVERSIGHT IN CONJUNCTION WITH SERVICE PROVIDERS AND TRAINING INSTITUTIONS			
<b>4. Increase sector coordination on HR development.</b>			
Increase coordination between the sanitation and hygiene sub-sectors around HR development, through strengthening of existing mechanisms such as the SWAP and TWG.	SWAP Secretariat/MININFRA and TWG at MOH	Short term	The strengthened mechanisms should also invite increased participation of education and training institutions.
<b>5. Strengthen HR capacity and build skills and competencies for sanitation and hygiene service delivery.</b>			
<p>a. Strengthen/create more HR capacity of the national level institutions involved in management and regulation of the WASH sector.</p> <p>b. Provide trainings on leadership, enterprise, program management and GESI.</p> <p>c. Support service providers in the use of benchmarking, peer-to-peer learning or other knowledge sharing opportunities for service provision improvement.</p>	MININFRA/RDB/RURA/WASAC Ltd	Short term	This would be informed by the capacity gap assessment under recommendation I, but is expected to include skills building of sector managers at central level in agencies including MININFRA, MOH, WASAC, RURA, etc.

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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 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 Arriëns and Wehn de Montalvo 2013). Figure 4 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 capacity needs assessments, this framework was primarily applied to the barrier analysis undertaken.

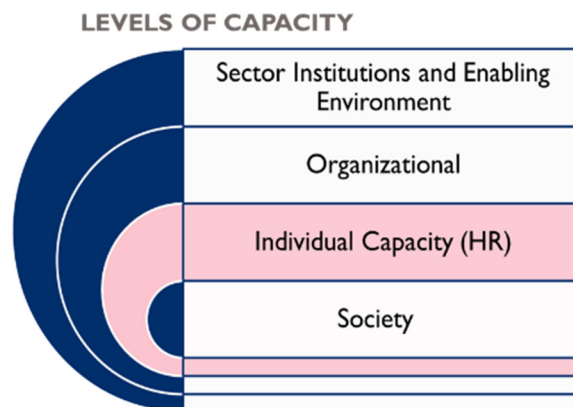


Figure 4. Framework for the Assessment

Many 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 capacity needs assessment, 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 in the start-up phase of our global assessment.

**TABLE 9. 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 (including treatment, disposal, and reuse)
Research and design
Business development

## Definitions

TABLE 10. 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 human resources (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 human resources 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 skills (BCC); 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 11. GEOGRAPHICAL AREAS DEFINED (ADAPTED FROM: WATERAID. 2019. GUIDANCE ON RURAL SANITATION PROGRAMMING,)	
Rural Remote (far from urban)	• 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)	• 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)	• 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	• 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 II. 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
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## ANNEX 2. KEY INFORMANTS

TABLE 12. LIST OF KEY INFORMANTS					
#	NAMES	INSTITUTIONS	FUNCTIONS	KII	INFORMAL DISCUSSIONS
1	Maurice Kwizera	Water Aid	Country Representative	Yes	
2	Lamber Karangwa	Water Aid	Senior Water, Sanitation, and Hygiene (WASH) Expert–Rwanda	Yes	
3	VirgilleKwizera	Japanese International Cooperation Agency (JICA)	WASH Specialist   Program Coordinator	Yes	
4	Yamaguchi Sho	JICA	WATSAN Program Manager	Yes	
5	Bruce Uwonkunda	Water for People	Deputy Chief of Party, <i>Isoko y’Ubuzima</i>	Yes	
6	Sam Noheli	Water for People	Private Sector Development Advisor, <i>Isoko y’Ubuzima</i>	Yes	
7	Kurt Henne	Water for People	Chief of Party, <i>Isoko y’Ubuzima</i>	Yes	
8	Marie Nicaise Ugabinema	Water for People	Sanitation and Hygiene Strategic Objective Leader, <i>Isoko y’Ubuzima</i>	Yes	
9	Lilliane Uwineza	Water for People	Sanitation Behavior Change Strategy, <i>Isoko y’Ubuzima</i>	Yes	
10	Katarwa Joseph	Former Staff of Ministry of Health (MOH)	Private Consultant	Yes	
11	Cyiza Philbert	MOH	Environmental Specialist at MOH	Yes	
12	Marcelline Kayitesi	Ministry of Infrastructure (MININFRA)	Division Manager in charge of water and sanitation		Yes
13	Uwizeyimana Emmanuel	Rwanda Development Board	In charge of skills development		Yes
14	Vincent Mugwaneza	Water and Sanitation Corporation Ltd	Director in charge of rural water supply and sanitation	Yes	
15	Manzi John	MININFRA	Director of HR and Administration		Yes
16	Yahya Hassan	MININFRA	Sector-wide Approach Coordinator		Yes
17	Prosper Mulindwa	Ministry of Local Government	Director General for Local Government Planning, Monitoring, and Evaluation		Yes

**TABLE 13. LIST OF PEOPLE INVOLVED IN FOCUS GROUP DISCUSSIONS**

#	NAMES	INSTITUTIONS	POSITION
1	Irafasha Felicien	University of Rwanda	Lecturer
2	Muhire Jean	University of Rwanda	Assistant Lecturer
3	Haguma Callixte	Association of Water and Sanitation Operators	President
4	Giramahoro Pacifique	University of Rwanda	Fresh Graduate
5	Jean Paul Habimana	COPEL LTd	Waste Education Specialist
6	Musabwa Edith	University of Rwanda	Lecturer
7	Murwanashyaka Joseph	University of Rwanda	Fresh Graduate
8	Ndutiye Simon	Aquarwanda	Board Member
9	Uwimana Jean Baptiste	Association of Sludge Emptiers in Rwanda	Representative
10	Muhoza Peace	SANEX Company LTD	Representative
11	Lambert Karangwa	WaterAid	Senior WASH Expert
12	Ciza Philbert	MOH	Health Environmental Officer
13	Fidele Nteziyaremye	AKPOERASAN Ltd	Managing Director

**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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