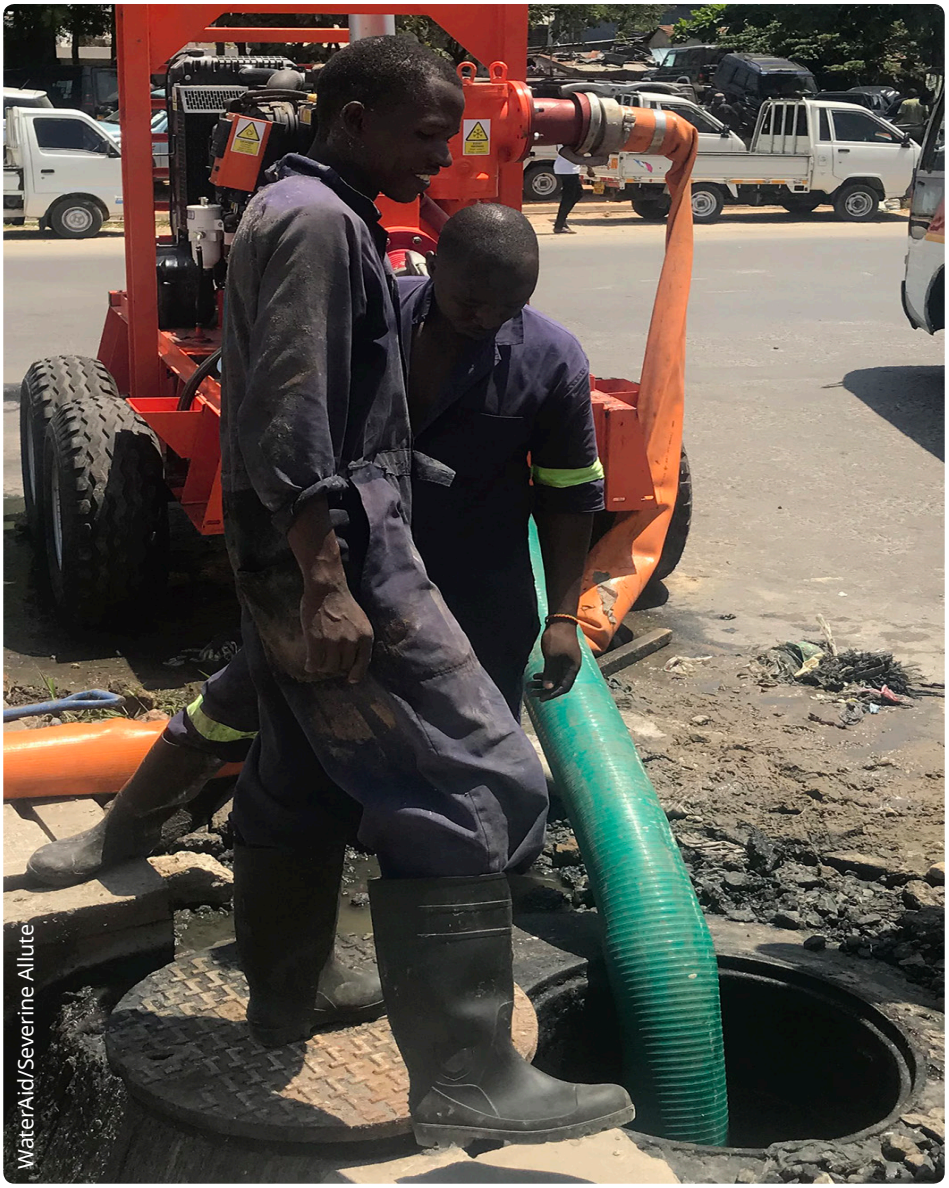
Assessment of the Health, Safety and Dignity of Sanitation Workers in Dar es Salaam, Dodoma and Arusha, Tanzania

February 2022



WaterAid/Severine Allute

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▲ **Cover photo:**
Sanitation workers of the Dar es Salaam Water and Sewerage Authority servicing sewers.

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Acronyms and abbreviations

AUWSA	Arusha Urban Water and Sanitation Authority
CBWSO	Community Based Water Supply Organisation
DAWASA	Dar es Salaam Water Supply and Sewerage Authority
DEWATS	Decentralized Wastewater Treatment System
DUWASA	Dodoma Urban Water and Sanitation Authority
EWURA	Energy and Water Utilities Regulatory Authority
FSM	Faecal Sludge Management
LGA	Local Government Authority
MAPET	Manual Pit Emptying Technology
MDHP	Manual Desludging Hand Pump
MoHCDGEC	Ministry of Health, Community Development, Gender, Elderly and Children
MoW	Ministry of Water
NGO	Non-Government Organisation
NIMR	National Institute for Medical Research
NSMIS	National Sanitation Management Information System
OSHA	Occupational Health and Safety Authority
PHA	Public Health Act
PORALG	President's Office Regional Administration and Local Government
PPE	Personal Protection Equipment
SOP	Standard Operating Procedures
UNICEF	United Nations Children's Fund
URT	United Republic of Tanzania
WHO	World Health Organisation
WSP	Wastewater Stabilisation Ponds
WSSA	Water Supply and Sanitation Authority

Executive summary

Sanitation workers provide an essential public service to reach Sustainable Development Goal 6.2, but often at the cost of their dignity, safety, health, and living conditions. A key barrier to providing support for this profession is the insufficient data on sanitation workers and their work environment. As such, the aim of this assessment was to explore opportunities to support sanitation workers in Tanzania, including strengthening the enabling environment.

The methodology included a literature review and 19 Key Informant Interviews (KIIs) including sanitation workers, local government, and regulatory authorities. The assessment focused on three regions: Dar es Salaam, Dodoma, and Arusha.

The assessment identified three major types of sanitation workers: (1) government-employed workers, (2) private service providers, and (3) informal workers. Sanitation workers face different levels of challenges concerning stigma, discrimination, social security, financial security, legal recognition, and occupational hazards that can lead to illnesses and injuries. The assessment also confirmed that faecal sludge in Tanzania is extensively disposed of untreated into the environment.

As such, the assessment identified the following recommendations to support sanitation workers and strengthen the enabling environment:

- Advocate for the recognition of sanitation workers.
- Develop the capacity of Local Government Authorities to register sanitation service providers.
- Develop a suitable model for the formalisation of sanitation worker groups.
- Promote innovative desludging equipment.
- Develop an appropriate economic support model for sanitation workers.
- Promote adherence to health and safety requirements.
- Develop national guidelines on safe sanitation services.

Introduction

Globally, 3.3 billion people use on-site sanitation systems with pits, chambers, and septic tanks. These systems accumulate faecal sludge and require regular servicing by sanitation workers to empty, transport, treat, and use/dispose of the sludge. Another 3.3 billion people are connected to a sewer system which transports wastewater to treatment plants. The sewers and treatment plants also require sanitation workers for operation and maintenance. Despite their critical role in reaching Sustainable Development Goal 6.2, sanitation workers are among the most vulnerable groups, working without protective equipment, job security, proper access to preventive and remedial health care or social protection.

In 2019, the World Bank, World Health Organisation, International Labour Organisation, and WaterAid joined forces to shed light on the neglected issue of sanitation workers and released the report Health, Safety and Dignity of Sanitation Workers: An Initial Assessment. The report identifies key challenges, good practices, and areas for action, including the need for more data on the sanitation workforce to provide appropriate and adequate support. To fill this knowledge gap, WaterAid commissioned various partners to conduct rapid assessments of sanitation workers in Nigeria, Burkina Faso, Zambia, and Tanzania. The aim of these assessments is to understand the working conditions of sanitation workers and identify opportunities to support them.

This document presents the working conditions and the enabling environment of sanitation workers in Tanzania. It presents the aim and objectives of the assessment, the methodology for data collection, the findings, and the recommendations required to improve the working conditions of sanitation workers and strengthen the enabling environment.

Aim and objectives

The aim of the assessment is to explore opportunities to support sanitation workers in Tanzania, including strengthening the enabling environment.

The assessment has three key objectives to achieve this aim:

- Identify occupational hazards and risk mitigation measures associated to sanitation work.
- Understand the institutional arrangement, regulation, and organisational structures in relation to the health and safety of sanitation workers.
- Formulate recommendations and next steps to overcome identified challenges.

Methodology

The following section includes a summary of the methodology used for the assessment in Tanzania, including a description of the study area, the scope, the data collection methodology, and the ethical principles applied to conduct the assessment.

Study Area

The study area focused on three cities in Tanzania: Arusha, Dar es Salaam, and Dodoma. These cities were selected due to rapid urbanisation and the emerging challenges faced with Faecal Sludge Management (FSM).

Scope

The study included all workers providing sanitation services, such as workers responsible for cleaning and maintaining public toilets, formal and informal emptying service providers, sewer maintenance workers, and workers at the wastewater treatment plants and disposal sites.

Online Literature Review

The literature review included an online search to identify peer-reviewed papers and technical documents on sanitation workers with a focus on developing countries, the Africa region, and Tanzania. The topics researched included the definition of a sanitation workers, existing sanitation systems, occupational hazards, and occupational health risk management measures and policies. The data was organised to identify major trends and information gaps on sanitation workers.

Grey Literature Review

The literature review also included grey literature to identify local resources that may not be available online (e.g., technical reports, registers, policies, guidelines, regulations, and legislation). The purpose of the review was to describe the governance framework for sanitation workers, the size of the sanitation workforce, identify local risks and occupational hazards, and current mitigation measures. The study team consulted with a list of experts having produced or known of the literature on the subject matter in Tanzania (e.g., renowned professionals mainly in the areas of sanitation and occupational health, university lecturers, NGOs). The team also consulted with government officials who provided access to registers of service providers and legal instruments on the provision of sanitation services.

Interviews

Key informant interviews were conducted in Arusha, Dar es Salaam, and Dodoma regions. A total of 19 individuals took part in the interviews. 16 interviews were face-to-face, with 3 interviews conducted by telephone due to logistical challenges to attend an interview in person. The categories of key informants are summarised in the table below.

Table 1: List of Key Informants that took part in the study by organisation groups

Respondent category	Location	Number per location
Central Government Ministry/Department	Dodoma	2
Local Government Authorities	Dar es Salaam	1
Higher learning institutions	Dar es Salaam	2
Regulatory Authorities	Dar es Salaam	1
Water supply and sanitation Authorities	Arusha, Dar es Salaam and Dodoma	3
Public Service delivery institution	Dar es Salaam	1
Informal Workers Group	Dar es Salaam	2
Informal Workers Group	Dodoma	1
Formal Workers Group	Dodoma	1
Workers Families	Dar es Salaam	1
Non-Governmental Organisation	Dar es Salaam	1
Arusha and Dar water authorities and EWURA	Arusha, Dar es Salaam and Dodoma	3
Total		**19**

Ethical Principles

Ethical clearance for this assessment was sought from the National Institute for Medical Research (NIMR) which provided the clearance letter Ref. No. NIMR/HQ/R.8a Vol. III of 2021.

Findings

The following section describes the findings from the assessment, including an overview of the enabling environment and the working conditions of sanitation workers.

The Enabling Environment

Stakeholders

The key stakeholders involved in sanitation services in Tanzania are:

- **The Water Supply and Sanitation Authorities (WSSA):** Responsible for the provision of sanitation services that includes sewered and non-sewered sanitation in their service areas.
- **Utilities:** Responsible for developing and maintaining sanitation infrastructure within their jurisdiction.
- **Sanitation workers:** Including government workers (e.g., treatment plant technicians and engineers), the private sector (e.g., mechanical emptiers), and the informal sector (e.g., manual emptiers). Cleaners of public toilets were not systematically considered sanitation workers (particularly by academics) because their job focuses on the toilet rather than containment where the health and safety risks were considered higher.[1]

Service Levels and Infrastructure

The Water Supply and Sanitation Act No. 5 of 2019 obliges WSSAs to provide sanitation services, including sewered and non-sewered sanitation systems. Sewered systems are most common in urban areas. Only 11 out of 26 Regional WSSAs have a sewered system (with or without treatment plants), servicing 1.3% of the urban population (URT, 2018). The remaining WSSAs maintain Wastewater Stabilisation Ponds (WSP) for the disposal of faecal sludge from on-site sanitation systems. According to the National Sanitation Management Information System (NSMIS), as of June 2021, only 27.2% of the population use safely managed sanitation facilities.[2]

In the 2019/2020 fiscal year, Regional WSSA's were expected to collect 385,375,351 m^3 of faecal sludge from latrines and septic tanks. However, EWURA reported that the volume of faecal sludge collected during that year was about 49,229,239 m^3, 12.8% of the expected volume. Furthermore, according to EWURA, the available capacity of faecal sludge treatment plants owned by regional utilities was 10,508,590 m^3, sufficient to treat only 2.7% of the annual faecal sludge production. Utilities reported that 5,878,072 m^3 of faecal sludge was transported to their treatment plants during that same year, meaning 88% of the collected faecal sludge was disposed of untreated.

[1] There are numerous groups of cleaners that clean the toilets in institutions, like halls and office spaces. The majority of the workforce in this group are women for indoor cleaning in connection with male workers who attend the outdoor environment (e.g., trouble shooting on blocked sewerage, open drains).

[2] Safely managed sanitation takes into account safe management of faecal sludge contained in on-site sanitation facilities (WHO&UNICEF, 2021)

In terms of emptying services, there was a total of 364 cesspit emptying trucks operating in the Regional WSSAs service area in 2020 (EWURA, 2021), 8% of which were owned and operated by the Utilities, 5% were owned by the Local Government Authorities (LGAs), and 87% were privately owned. Twelve utilities own emptying trucks including Dar es Salaam and Coast, Arusha (5), and Dodoma (1). This indicates that formal emptying services in Tanzania are dominated by the private sector registered by either LGAs or respective WSSAs.

In terms of treatment, the assessment found that Dar es Salaam city maintains 11 WSPs, two of which are designated for co-treatment of wastewater and faecal sludge. DAWASA also manages three DEWATS for the treatment of faecal sludge. Similarly, Dodoma and Arusha maintain WSPs that co-treat wastewater and faecal sludge. Arusha WSSA is reported to have 18 WSPs while Dodoma has 1 WSP. The table below indicates the treatment facilities provided by WSSAs in each region.

Policies and Regulatory Framework

The legislation that directly and indirectly concerns sanitation workers is the following:

- **Tanzania Employment and Labour Relations Act of 2004:** The act focuses on the promotion of economic development through economic efficiency, productivity, and social justice. It provides the legal framework for effective and fair employment relations and outlines the minimum standards regarding working conditions. The most direct implementation of the labour law for sanitation workers is the provision of trade unions. Workers (including those working in sanitation) are members of trade unions and party to the service charter agreement that defines priorities to protect workers, particularly those working in hazardous environments. The extract below is from a Utility Service Charter Section on compensation of workers implementing "Hard Tasks" (Unofficial English translation from original document in Swahili).

20.0. KAZI NGUMU (HARD TASKs)

Both parties agree that some of the job tasks are hard and may negatively affect health of workers, such tasks include:

(i) Working from the inside of sewerage conveyance infrastructure

(ii) Working in waste treatment facilities (ponds)

(iii) Working with waste water pumps

(iv) Mixing of chemicals in waste water systems

(v) Diving into waste water

20.3 Both parties have agreed that workers who undertake "hard tasks" will be given 10% top up to their monthly salary as an allowance for the hard labour (i.e. Hardship Allowance).

- **Public Health Act of 2003:** This act is the legal foundation of public health in Tanzania. Sections 73 and 86 describe the provision of sanitation services to communities, including clauses on necessary conditions for those working in the field (Section 73.5). Section 46 of the act directs the owner, operator, or person in charge of the premises, to provide adequate and functional or appropriate sanitation and hygiene equipment to sanitation workers responsible for the containment structure and the toilet (e.g., mops, mop buckets, liquid soap, disinfectants, detergents, dusters, sanitisers, scrubbing brush and appropriate personal protective equipment). The law also requires institutions and households to have sound sanitisation infrastructure (Section 86). The law also appoints the LGAs to make bylaws for sanitation management within their jurisdictions.
- **Occupational Health and Safety Act 2003:** This act highlights the importance of using advanced equipment and avoiding entry to confined spaces. More specifically, section 44 (1) states the provision and maintenance of suitable breathing apparatus, reviving apparatus, and belts and ropes to be readily accessible when sanitation workers enter any chamber, tank, vat, pit or other confined spaces in which dangerous fumes could be present. Furthermore, section 62 states that any factory or workplace that exposes employees to any injurious or offensive substances or environments must provide and maintain protective equipment for employees.
- **Workers Compensation Act (amended in 2015):** The act established the Workers Compensation Fund to ensure adequate and equitable compensation and rehabilitation for employees who suffer occupational injuries or contract occupational diseases arising out of, and in the course of their employment, and in the case of death, for their dependents. The Fund requires employers to contribute on a monthly basis. The fund covers those who are registered and whose employers have subscribed to the payment scheme, which is not the case for workers in the informal sector and some in the private sector. For example, cleaners from a government hospital in Dar es Salaam (employed by a private company) indicated not having employment contracts and subscriptions to social security arrangements.
- **The Water and Sanitation Act (CAP 272):** The act defines the framework for the operation of sanitation services. It establishes and stipulates the role of WSSAs and the licensing procedures for sanitation service providers. The law also designates Local Authorities to develop bylaws regarding water and sanitation, in accordance with the Public Health Act. The act also ensures that no illegal parties are involved in the provision of sanitation services - an opportunity to regulate businesses and ensure the protection of sanitation workers.

Sanitation Workers

Types of Sanitation Workers

Sanitation workers operate as formal or informal service providers (Table 3). Both formal and informal sanitation workers implement similar activities, except for the unclogging of the main sewer which is performed by formal government workers or private companies. The unclogging of household sewer connections, however, is performed by private companies and informal sanitation workers. Informal workers provide a range of services depending on their skills, including construction and rehabilitation of sanitation structures, installation of connections to sewers and other on-site systems, and pit excavations.

Table 3: Different types of activities performed by different groups of sanitation workers.

		Formal Sanitation Workers		Informal Sanitation Workers		
		Government	Private	CSO	Informal groups	Individual workers
Sanitation	Unclogging of the main sewer line	✓	✓			
	Unclogging HH sewer connections	–	✓	✓	✓	✓
	Desludging	✓	✓	✓	✓	✓
	Transportation	✓	✓	✓	✓	✓
	Operating wastewater and faecal sludge co-treatment plant	✓	–	–	–	–
	Operation a faecal sludge treatment plant (e.g., DEWATs)	✓	✓	✓	–	–

Equipment

Sanitation workers use different types of tools to provide services (Tilley et al., 2014). The standard tools required to empty containment structures include vacuum trucks and Manual Desludging Hand Pumps (MDHPs). This assessment found that in Dar es Salaam, Dodoma, and Arusha, the standard equipment used for desludging is vacuum trucks. However, these trucks face difficulties in accessing congested settlements, which led to efforts to introduce small scale emptying equipment namely MAPET, Vacutug, and the Gulper. These technologies have yet to reach scale and manual emptying practices persist using traditional tools like shovels, spades, ropes, buckets, hoes, pickaxes, chisels, and ladders (Seleman et al.,2020). Manual emptying leads to direct contact with faecal sludge as witnessed by one of the sanitation workers in Kinondoni, Dar es Salaam:

> **"We do the job with bare hands and sometimes it involves body contact with blackwater, sometimes even new systems get linked with old ones and you get flooded with blackwater but you have to work."**

The tools used for sewer maintenance are pumps, water jets, drain sticks, and equipment for opening inspection chambers. However, only DAWASA has a water jet for cleaning sewer lines, meaning workers in most cities dive into the drains. This activity has high risks of getting trapped and suffocating in confined spaces. One worker in Dar es Salaam reported:

> **"Our cesspit is deep and so narrow that if someone is trapped you can't have any person enter or help him. A colleague once experienced breathlessness after smoking in a pit. We could only pull him by rope, fortunately, he got out on time."**

There is also a lack of special equipment to open and clamp inspection chambers, forcing workers to use their hands which can lead to serious injuries. Two accidents were reported, one in Dar es Salaam and another in Dodoma, both of which led to workers losing their fingers.

Drain sticks are common tools used for unclogging sewers. Worker groups of 3-5 individuals have established themselves in specific areas to provide their unclogging services with drain sticks. For example, in Dar es salaam they can be found in Kariakoo, Mikocheki, Posta, and Upanga while in Dodoma they are found along Nyerere square recreational area.

Treatment plants also require specialised machines for removing sludge, cleaning equipment, and toilets for drivers and crews tipping sludge (EWURA, 2020). These activities are contracted to private service providers who are liable to comply with the occupational health and safety requirements under the Occupation Health and Safety Act of 2003. Utilities report being very keen to adhere to these requirements.

In terms of Personal Protection Equipment (PPE), there is a lack of incentive to wear gumboots, overalls, facemasks and other equipment. The equipment is also not appropriate for the tasks that sanitation workers perform (Keller et al., 2017). For example, the gumboots and overalls are not adapted for workers who dive into pits, especially during the pit diversion process (Figure 1.A and 1.B). A worker from Dar es Salaam states:

"Sometimes we use gumboots but that is when we work outside in the open, not in the pits. In confined spaces, you cannot even use gumboots, down there you bend your legs and sit on them."

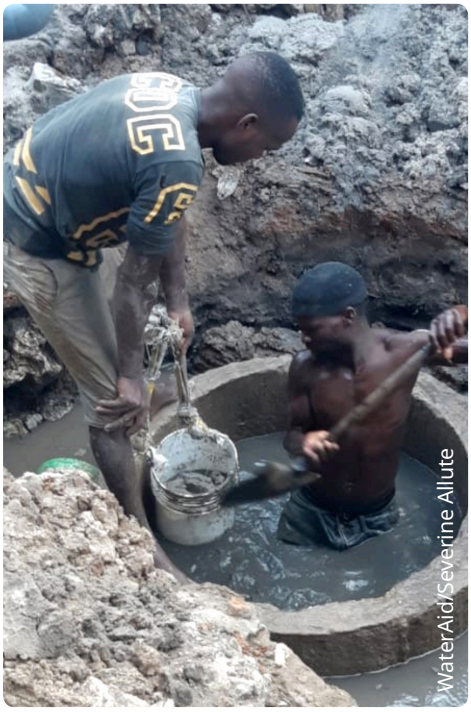

Figure 1a: A sanitation worker diving into the pit during toilet upgrading.

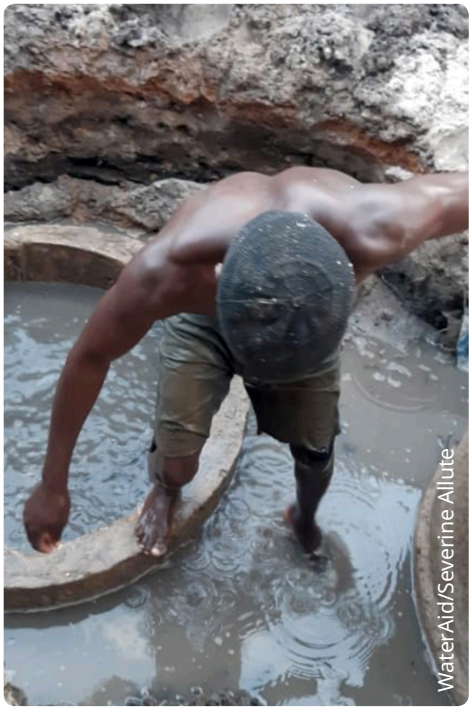

Figure 1b: A sanitation worker in contact with wastewater without any PPE in Dar es Salaam.

Health and Safety

Section 4 of the Guidelines for Onsite Sanitation and Faecal Sludge Management for WSSAs (EWURA, 2020) requires sanitation service providers to adhere to health and safety measures, which includes vaccinations such as Hepatitis B. The guidelines stipulate three important Standard Operating Procedures (SOPs) for each stage of FSM: (i) licensing of operations; (ii) monitoring of employees' health and safety; (iii) technical, safety, and hygiene assurance of emptying equipment. Sanitation workers at utilities explained that WSSAs usually sign service charter agreements focusing on health and safety for employees working in hazardous environments However, health and safety for informal service providers, which make up the majority of sanitation workers, remains a key challenge. Compliance with health and safety among private operators is also reported to be very low. Effective supervision and monitoring are required to ensure sanitation services comply with occupational health and safety standards. Below is an overview of health and safety concerns, reported incidences, and mitigation strategies.

Summary of reported health and safety concerns along the sanitation service chain:

- Skin exposure to faecal matter.
- Ingestion of faecal matter.
- The collapse of walls and fixtures during manual pit emptying.
- Transportation of heavy faecal sludge containers to vehicles.
- Entrapment in confined spaces.
- Cuts and bruises from sharp objects especially during pit excavation.
- Finger cramps when dealing with pit covers and seals.
- Exposure to chemicals during excavation and in confined spaces.
- Exposure to dust.
- The high liquid pressure environment in a loaded tanker can lead to leaks or bursts.
- The burst or leak of sewage pipes can release contents under pressure, especially during loading.

Summary of reported incidences of health and safety hazards in sanitation work:

- Diarrhoea is a common symptom following extensive contact with faecal sludge.
- A worker in Dar es Salaam stated, "I myself was recently diagnosed with typhoid fever a few days after completion of a project".
- Itchy skin is common after contact with wastewater but subsides after bathing with medicated soap (e.g., Dettol). A worker in Dar es Salaam stated, "We sometimes get blisters like skin rashes and ringworm skin lesions".
- Cut wounds from excavation or solid waste removal jobs. For example, a worker suffered from severe cut wounds and bled after contact with a buried drum during pit excavation. One of the participants showed a fresh cut wound at the Achilles tendon.
- Breathing difficulties and chest problems related to working in pit holes and other confined spaces. A worker stated, "I fear the chest problem will cause us to stop doing this job" referring to the dust and smells from the kerosene and sewage.
- Fractures due to accidents. Workers have broken limbs, but this may happen at a similar rate to other jobs.
- Rapid depletion of physical strength. One worker stated, "I have seen very strong people losing their agility so quickly in this job."

Summary of reported hazard mitigation and coping mechanism:

- Workers apply kerosene on their skin and pour it onto faecal sludge and sewage to control infection and foul smell.
- Workers use their old or worn-out clothes. They have no special shoes, no head cover, and no gloves while executing their duties. While they appreciate the use of PPE, they often find it is not practical.
- Wearing condoms when diving into pits.

Infrastructure

Sanitation infrastructure must meet specific standards to promote the health of sanitation workers (WHO, 2018). Based on the literature review, the following section provides an overview of the quality of sanitation infrastructure in Tanzania for both on-site and off-site sanitation systems.

- **Road accessibility:** Certain settlements in Dar es Salaam (e.g., Keko, Tandale, Manzese) and Arusha (e.g., Ungalimited, Daraja Mbili, Mbauda, Ngarenaro) are inaccessible by vacuum trucks. In these areas, desludging is done manually. Faecal sludge is transported to a vehicle in a parking area using containers of at least 50 L. Workers are at risk of injuries when carrying heavy loads and face stigma.
- **Pit lining and slab cover:** Pit lining and a strong slab cover minimise the risk of a pit collapsing. However, only 47% of the population in urban areas use at minimum basic sanitation facilities (WHO&UNICEF, 2021), which suggests that nearly half of sanitation facilities in urban areas have weak or no pit lining or slab cover, increasing the risks for sanitation workers. Nevertheless, sanitation workers indicated that no deaths or injury from pit collapse have been reported for the past 10 years.
- **Waste content:** Nearly half of the toilets in unplanned urban settlements can only be manually emptied because of high viscous faecal sludge and solid waste content. Nearly half of sanitation facilities in Dar es Salaam contain thick faecal sludge that cannot be emptied using vacuum pumps or trucks (Seleman et al., 2021).
- **Channel maintenance:** Channels need to be unclogged or cleaned regularly to avoid overflow especially during rainfall or peak hours. Usually, technicians dive into the channel exposing themselves to dangerous gases, pathogens, and the risk of injury from falling. To address this challenge, DAWASA has purchased a special water jet machine to eliminate the need to dive into the channels. Other WSSAs have not yet purchased this equipment and special care is required during servicing to minimise the associated risks.
- **Treatment plants:** The utilities of WSPs and DEWATS provide workers with PPE, furnished changing rooms, bathrooms, and toiletries. However, workers may be exposed to hazards including pathogens, gases, risk of falling during cleaning, and obnoxious smells. These hazards can be minimised through proper design, construction, operation and maintenance features such as testing the influent, adhering to SOPs, and the use of PPE (WHO, 2018).

Stigma and Discrimination

Informal sanitation workers remain stigmatised despite the high demand for their services at the community level. A worker of an informal group at Kinondoni mentioned that their services are requested in other areas, and they work for both the rich and the poor alike. However, all workers who provided comments on stigma, experienced stigma associated with their profession. As reported by a member of an informal group:

> **"In communities we are regarded like people that have lost direction, they demoralise us but we have no other means. No one wants to look ridiculous."**

Another worker affirmed that sanitation workers provide for their families just like other workers. However, he could not inform his prospective wife of his real job:

> **"She now knows it and has no problem, but earlier I introduced myself as a builder or mason."**

Even cleaning staff operating in public hospitals complained that they are often ridiculed by patients and their relatives.

Stigma and discrimination particularly among informal sanitation workers appear to stem from three factors. The first factor is the illegality of the business itself. The law asserts that it is an offence for any person to operate liquid or solid waste management activities unless they are contracted by the authority and comply with basic safety requirements (Public Health Act 2009, Section 73). The second factor is the dehumanizing working conditions including the use of simple tools that leave sanitation workers exposed to hazards (Photo 1). A worker in Dodoma commented that:

> **"This job can't be done with normal person with simple spirit; we have sacrificed to serve the people."**

▼ **Figure 2:** Sanitation worker operating without any protective equipment in Dar es Salaam.

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The third factor is that the majority of sanitation workers are marginalised individuals. The assessment revealed that workers in informal groups lack formal education, suggesting they could not access formal education. A member of an informal group from Dar es Salaam revealed:

"We do not have training certificates, imagine this guy here; he is my teacher and my mentor. I do not have any formal training."

Discrimination related to literacy was also revealed as workers gave accounts of their failed attempts to register themselves as service providers. The main challenges they faced were bureaucracy and the lack of formal education, qualifications, and certifications.

Despite the widespread stigma and discrimination among sanitation workers, the impact of stigma varies between individuals based on their coping abilities. A sanitation worker in Kinondoni gave an example of a prominent sanitation worker who had the support of his wife. He was a very proud sanitation worker and his wife would go to work with him to assist. He died a few months before the assessment, but in a rare interview with his wife, she stated how proud she was of her husband and his job.

The assessment found that informal sanitation workers were not foreigners and did not belong to a particular minority group like in other countries (Deguch and Chio, 2020).

Substance Abuse

Substance abuse is a common challenge for sanitation workers related to stigma and harsh working conditions. The stress associated with the profession can lead to mental health issues, and workers may relieve this stress with alcohol and drugs. Participants from informal groups reported considerable substance abuse, with 4 out of 7 group members smoking regularly, and 5 out of 7 drinking alcohol regularly. One worker from Dar es Salaam explained the reason, stating:

"Alcohol consumption is a way to calm your mind down."

It appears that substance abuse also happens during working hours. One participant, for example, shared a story of a colleague that smoked while inside the pit and ran short of breath before he was able to get out:

"We learned that smoking is not safe in low air circulation, so we have prohibited smoking in confined spaces."

Table 4: Group earnings per job assignment for sanitation workers in Dar es Salaam.

Group skills level and task	Income level per job
Informal skilled workers doing construction of new systems working in a group of 10 individuals. Completion on average in 10 days.	1,500,000 – 2,500,000 TSh per contract ($650 - $1085)
Informal unskilled workers offering pit excavation or old latrine evacuation services in a group of 5 individuals. Completion on average in 1-2 days.	150,000 – 250,000 TSh per contract ($65 - $108)
Daily labourer employed for the assistance of a cesspit emptier.	210,000 TSh per month ($91)
Casual labourer offering cleaning services (e.g., maintenance of toilet, occasional cleaning of drains and sewers).	120,000 TSh per month ($52)

Financial Security

Financial security varies across the three major sanitation groups: government-employed, formal private service providers, and informal workers. Government workers enjoy the highest financial security as they earn a government salary, and have a subscription to social security benefits including the workers' compensation fund, and have access to loans from financial institutions (Service Charter – Mkataba wa Hali Bora). The formal private-sector workers, including cleaning staff, reported receiving below minimum wage, they did not participate in pension schemes, and were not covered by medical insurance. They complained of the insufficient pay for the difficult working conditions and health risks involved. Informal workers employed by a private company, which includes truck operators and assistants, and public facility cleaners, stated they do not hold employment status. Instead, they operate as labourers on monthly or daily pay. Informal workers described their income as unstable and varied depending on job availability and the skills level of their group.

Overall, the income for sanitation workers is irregular as the frequency and duration of orders vary. However, in the stable season, sanitation workers and their families appear to be able to meet their family needs. Nonetheless, most informal workers in the lower tier, such as evacuators and cleaners, complain they can barely manage day-to-day life and are often unable to meet the needs of their children. Workers complained of financial insecurity due to a lack of alternative income-generating activities in between contracts. However, workers on the higher tier report they can afford normal lifestyles. These are workers with additional skills to provide services such as the construction of improved water treatment systems for individuals or families. All groups complained of not being paid upon the completion of work.

Registration and Social Security

Although there are adequate arrangements to provide social security benefits for formal sanitation workers employed by the government, workers operating with formal (registered) private service providers (e.g., truck drivers, assistants, and cleaners) may not access social security due to weak compliance to social security laws. For example, some truck operators and assistants are paid per trip rather than every month, meaning compliance to social security laws may not be assured.

The informal groups remain unregistered and do not have a clear structure. They have no bank accounts, no health insurance, or other forms of social support. Workers reported helping each other through direct cash contributions. For workers earning minimal income and working in unhealthy and hazardous conditions, the lack of social security increases vulnerability.

The key limitation to accessing social security benefits is the illegality and lack of recognition of the sanitation worker groups. Unfortunately, attempts to gain recognition and formalise groups have not been successful. For example, the late prominent sanitation worker from Kinondoni (mentioned above) worked hard to register an organisation of sanitation workers with headquarters in Kinondoni however, registration of the group was never achieved. His widow and one of his trainees identified the key challenges as bureaucracy and disagreements on mechanisms to generate organisational overhead. Members of informal worker groups fear that there is too much bureaucracy and that they do not have the qualifications to register.

Even where working relations between informal worker groups and water utilities or LGAs are good, informal groups still do not believe they can register. An informal worker described their group's relationship with the utility as "working close together", citing authorities call them to work whenever the need arises. The situation was similar with groups in Dar es Salaam reporting they receive work opportunities from authorities however, they also state that they were not qualified to work with them. A sanitation worker in Dodoma states:

> **"How can I work with authorities without having any training?"**

Working for a legally recognised organisation is necessary to access social security benefits. Therefore, informal sanitation groups must be formalised to access these services. However, as informal sanitation workers provide services to the most vulnerable households, considerations for formalisation must take into account the feasibility for groups to meet overhead costs associated with administration and social security services. Questions that need to be answered include: How will the social security costs be covered? What are suitable organisational structures for sanitation workers? How to comply with the law (PHA 73 and 86)?

Recommendations

The assessment has identified the following recommendations to strengthen and improve sanitation and the working conditions of sanitation workers in Tanzania:

- **Advocate for the recognition of sanitation workers:** To the Ministry of Health, Community Development, Gender, Elderly, and Children, the President's Office Regional Administration and Local Government, and the Ministry of Water for the recognition of all sanitation workers and groups and to create supportive systems to address health and safety challenges and ensure the sustainability of sanitation services nationally.
- **Develop the capacity of Local Government Authorities to register sanitation service providers:** According to the Water and Sanitation Act and the Public Health Act, LGAs are mandated to provide licensed sanitation services. Ministries, Departments and Agencies, and sanitation stakeholders should work together to strengthen the capacity of LGAs to fulfil this role to formalise workers and monitor and regulate their services.
- **Develop a suitable model for the formalisation of sanitation worker groups:** The Ministry of Health, Community Development, Gender, Elderly, and Children, the President's Office Regional Administration and Local Government, the Ministry of Water, and other sanitation stakeholders should review the definitions, the structures, and registration procedures for sanitation service providers with a focus on health and safety. Key actions should include the development of community models such as community-based water supply organisations' (CBWSO) or Civil Society Organisations (CSOs) as it is done in solid waste management services, technical training for sanitation workers and entrepreneurs (e.g., innovation and training institutions like SIDO, VETA, and universities), provision of equipment and operating capital, and monitoring performance.
- **Promote innovative desludging equipment:** The Ministry of Health, Community Development, Gender, Elderly, and Children, the President's Office Regional Administration and Local Government, the Ministry of Water, and other sanitation stakeholders should promote and increase access to innovative safe desludging equipment and practices to overcome the current challenges with manual emptying (e.g., Rammer and Excrevators (GOAL, 2016).

- **Develop an appropriate economic support model for sanitation workers:** This model should target low-income individuals and groups to ensure effective and sustainable operations of sanitation worker groups and provide incentives to implement hygienic and safe practices in sanitation services.
- **Promote adherence to health and safety requirements:** The Ministry of Health, Community Development, Gender, Elderly, and Children in collaboration with the President's Office Regional Administration and Local Government should promote adherence to health and safety requirements (including acquisition and use of PPE and abolishing inhumane practices) by sanitation providers at the LGA level. They should strengthen on-the-job training/orientation, inspection, monitoring, and legal enforcement**.**
- **Develop national guidelines on sanitation services:** The Ministry of Health, Community Development, Gender, Elderly, and Children and sanitation stakeholders should produce comprehensive sanitation workers national guidelines on the effective and safe delivery of sanitation services addressing operational structures, legal frameworks, effectiveness, and workers safety. The guidelines should take into account hazards and the institutional challenges that sanitation workers go through.

Conclusion

The assessment identified three groups of sanitation workers operating in Tanzania: government employees, private service providers, and unregistered sanitation workers.

- The formal government workers primarily operate on wastewater systems or on-site sanitation systems in government institutions. They include maintenance personnel, trucks drivers, equipment operators, and supervisors. Workers in this group have benefited from advancements in infrastructure and equipment. Their working conditions have also been improved with the adherence to legal requirements including the provision of PPE and efforts to minimise direct contact with faecal sludge. The health and safety risks among this group could be regarded as moderate but manageable except for part-time labourers working under special contracts.
- The private sector workers primarily operate emptying truck services. They are partially protected but remain exposed to varying levels of occupational hazards. Although the private service providers are registered, the registration processes did not adhere to legally prescribed methods limiting the supervision of workers' health and safety. The regulatory authorities have not addressed the health and safety requirements for this group of workers. The use of PPE is rare and other unsafe practices prevail due to a lack of supervision and maximisation of profit by the companies.
- The group of unregistered sanitation workers, also known as the informal sanitation workers, service on-site sanitation systems, particularly where it is inaccessible to trucks. They are in high demand from a large proportion of the community because they are affordable and accessible, yet they operate as illegal entities using rudimental tools and approaches, often without any form of protection. The formalisation and recognition of these groups have been limited due to the illegal nature of their work. Informal sanitation workers are exposed to many health and safety hazards and remain subject to social stigma and discrimination related to their profession.

The sanitation working conditions in the country remain not only injurious to the health and dignity of workers and their families, but also a threat to the sustainability of sanitation services in the country.

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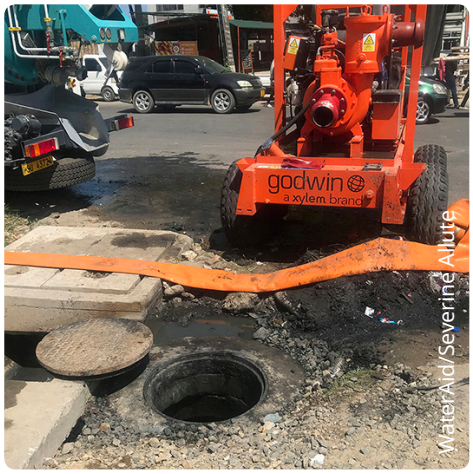
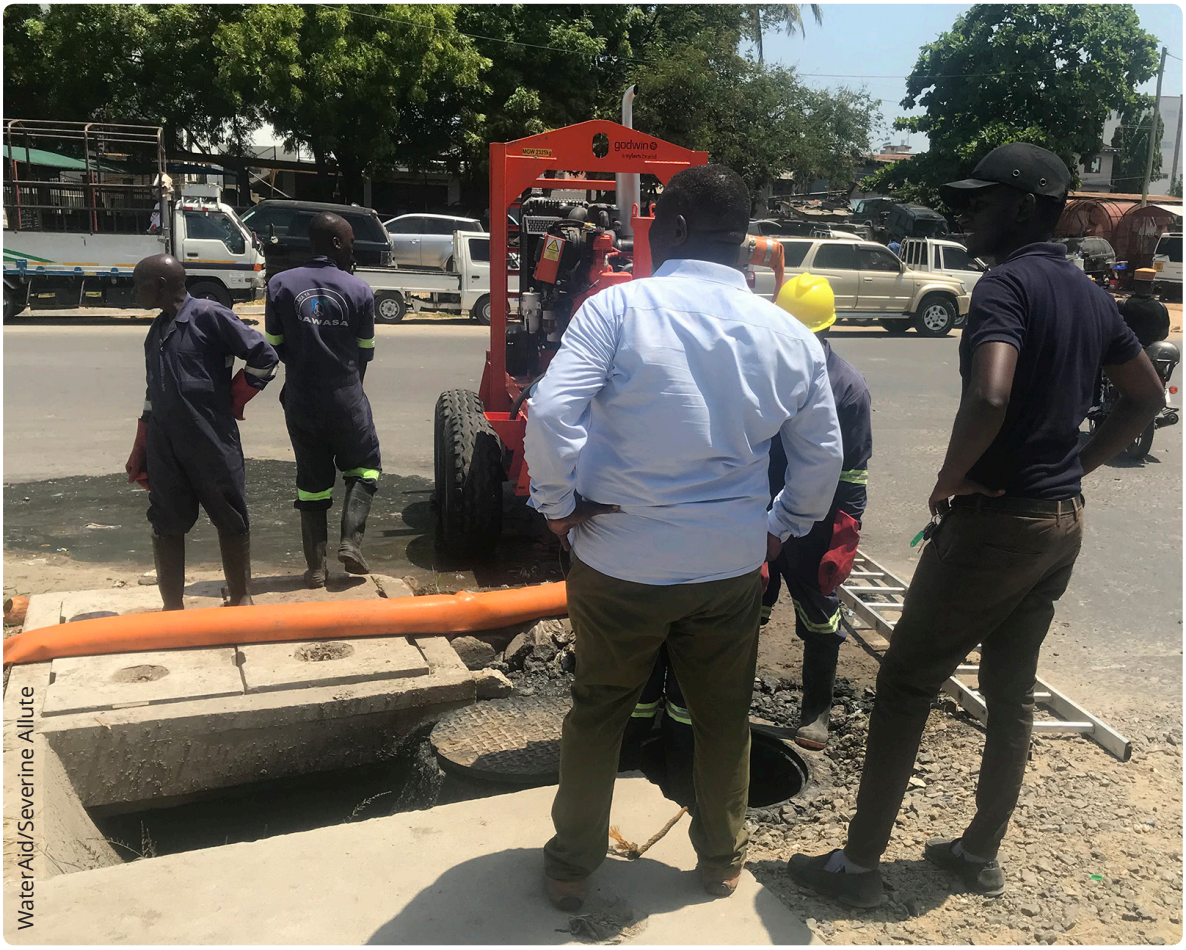


◀ ▼ Sanitation workers of the Dar es Salaam Water and Sewerage Authority servicing sewers.



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