CHAPTER 2

Main Findings

These findings draw on evidence of sanitation working conditions in nine countries: Bangladesh, Bolivia, Burkina Faso, Haiti, India, Kenya, Senegal, South Africa, and Uganda. This section summarizes the main findings, and the case studies themselves are presented in appendix A. The working conditions of the sanitation workforce depend heavily on the wider sanitation and urban landscape, but there are commonalities, particularly in the challenges some of the most vulnerable sanitation workers face.

This chapter first presents key challenges and risks, followed by good practices and then gaps in knowledge.

Key Challenges and Risks

- **Occupational and environmental health and safety** is important because sanitation workers are exposed to multiple occupational and environmental hazards.
- **Weak legal protection** results from working informally, lack of occupational and health standards, and weak agency to demand their rights.
- **Financial insecurity** is a great concern because typically, informal and temporary sanitation workers are poorly paid, and income can be unpredictable.
- **Social stigma and discrimination** exist, and in some cases, are experienced as total and intergenerational exclusion.

The challenges and risks faced by sanitation workers can be categorized in four dimensions: occupational and environmental health and safety, legal and institutional issues, financial insecurity, and social issues.

**Occupational and Environmental Health and Safety**

Sanitation workers are exposed to multiple occupational and environmental hazards, such as coming into direct or close contact with fecal sludge and wastewater; operating equipment used in emptying, conveyance, and
treatment of fecal sludge and wastewater; and working in confined and often dangerous spaces. They are exposed to hazardous gases and biological and chemical agents in septic tanks, sewers, pumping stations, and treatment plants (WHO 2018). Manual sanitation work poses great risk to sanitation workers; it is physically demanding and several of the case studies of manual pit emptying report compelling similarities between the practice that cross countries and continents.

Sanitation workers who are not protected by adequate health and safety measures risk injury, infection, disease, mental health issues, and death. Specifically, the reported physical and medical conditions directly associated with sanitation work include headaches, dizziness, fever, fatigue, asthma, gastroenteritis, cholera, typhoid, hepatitis, polio, cryptosporidiosis, schistosomiasis, eye and skin burn and other skin irritation, musculoskeletal disorders (including back pain), puncture wounds and cuts, blunt force

What I personally experienced as a problem is that once I had an accident at work. A slab caught my finger, and I had to treat the wound for 11 months. In total, the care cost me about 60,000 CFA francs. But I must say that I continued to work while caring for the injury. In the meantime, my mother told me to stop the painful work to take care of my hand, but I made her understand that if I did not juggle work while looking after it, I do not know what other problems it could bring. So, I continued to work with the hand while looking after the wound until it was healed.

trauma, and fatality (CSFE n.d.; WHO 2018). Common accidents reported include losing consciousness and death by asphyxiation resulting from the noxious gases in both septic tanks and sewers, pit collapse or falling masonry, and wounds from sharp detritus. Several manual pit emptiers report working at night to avoid neighbor objections and sanctions, as well as being under the influence of alcohol and drugs, factors that further exacerbate the risk of accidents.

It is not uncommon for sanitation workers of all kinds to work without any form of personal protective equipment (PPE). Many informal and temporary sanitation workers operate with little to no formal training on the occupational risks of their work. Multiple factors cause poor occupational health and safety (OHS). It is clear that mitigating the OHS hazards along the sanitation service chain (whether manual or mechanized) needs to be addressed systematically (SNV 2017).

Where sanitation workers are predominantly from lower-income segments of society, their occupational hazards tend to be compounded by living in overcrowded, low-income settlements, with poor water and sanitation and, many times, in flood-prone environments. These conditions increase the environmental health risks.

**Legal and Institutional Challenges**

Sanitation workers often suffer because of weak legal protection and lack of enforcement of existing rules. The numerous operational activities along the sanitation chain—emptying and conveyance of fecal sludge, sewer maintenance, treatment, and end use/disposal (WHO 2018)—have often been invisible or at least disregarded in regulatory frameworks. Many countries either lack laws and regulations that protect sanitation workers, or the laws in place are not enforced or are not enforceable in practical terms. Manual emptying, often the riskiest sanitation work, is often characterized by informality. Efforts to prohibit manual emptying (for example, in India and Senegal), have not necessarily curtailed the practice but instead have forced it underground. By contrast, in Bangladesh and South Africa, manual work is formally recognized as part of the sanitation services package, with workers being provided training and occupational health mitigation measures being in place (box 2.1).

**Financial Insecurity**

Sanitation workers, especially those employed on temporary or informal terms, are poorly and irregularly paid. The extent to which sanitation markets are formal or informal varies significantly between countries.

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**BOX 2.1. Regulations That Protect Workers**

In South Africa, since the 1994 political transition from apartheid, new labor laws have been established to protect vulnerable workers. Three main regulations governing sanitation work attribute responsibilities to both the employer and the employee. The Basic Conditions of Employment Act (1997) offers protections to workers. The National Occupational Health and Safety Act (1993) puts employers in charge of protecting worker health and safety by minimizing and mitigating risks in the working environment, as well as providing training and precautionary measures to protect the health and safety of their workers. The Regulations for Hazardous Biological Agents (2001) mandate that any person who may be exposed to a biohazard must comply with the employer’s instructions, such as wearing personal protective equipment, reporting accidents, and completing training or medical examinations.
In South Africa, sanitation work is predominantly in the formal economy; public sanitation workers are responsible for sewer maintenance, and pit emptying is contracted out to the private sector. In Burkina Faso, sanitation work is predominantly informal. In Kenya, the water service providers (WSP) have the mandate, but much of the market is served by large numbers of informal operators and formal small operators. As is common in other sectors, the financial situation of such workers is precarious. Pay for low-grade, temporary, or informal work tends to be low, income is irregular, and workers are vulnerable to extortion. In India, some manual workers reported that they have been paid in food rather than money. Manual emptiers in Senegal and Haiti reported low-income households failing to pay the agreed-on fee once they had completed the work.

Tight financial margins in the formal private sector can also compromise the conditions for workers; the investment and maintenance of PPE, mechanization, or both may not be considered financially viable.

Social Challenges
Low-grade, unskilled sanitation workers often face social stigma and discrimination. This is especially true when sanitation is linked to a caste-based structure and often allocated to castes perceived to be lower in the caste hierarchy, such as in India and Bangladesh, where sanitation work is perceived to belong to the Dalit caste. This stigma compounds the social ostracizing and limitations on social mobility that workers face and often results in intergenerational discrimination, where children of sanitation workers often struggle to escape the vicious cycle of limited opportunities and sanitation work.

More generally, however, low income, financial stress, informality and the social stigma attached to handling feces can form a multigenerational poverty trap for many low-grade sanitation workers. These factors manifest in implicit or explicit discrimination, which hinders workers’ social inclusion, their opportunities to shift careers, and social mobility. Furthermore, alcoholism and drug addiction to evade the working conditions are common among some sanitation workers. To protect their families’ safety and well-being, several of the case examples found reports of sanitation workers maintaining a low profile and hiding their occupation from their communities.

Good Practices
- Providing acknowledgment and formalization to sanitation workforce (including legal protections)
- Mitigating occupational health risks for sanitation workers
- Delivering health services to sanitation workers
- Establishing standard operating procedures and guidelines
- Promoting workers’ empowerment through unions and associations

The case studies highlight several examples of good practice, as presented in the next sections.

Table 2.1 includes an indication of where, based on the cases reviewed, a good practice was adopted at a national/strategic scale, where there are examples of good practice, and where there is evidence that the
Providing Acknowledgment and Formalization to Sanitation Workforce (Including Legal Protections)

The plight of urban sanitation workers is often invisible and, in some contexts, largely informal. A common best practice across all the case studies is acknowledging the workforce and creating sanitation work opportunities in the formal markets. Selected cases reveal that sanitation workers employed on a permanent basis, either through public offices (for example, in India and Bangladesh) or private companies (for example, in Senegal, Kenya, and Haiti), enjoy a more stable income, often better pay, and, in some cases, other benefits such as union membership, housing, or health insurance (for example, in Bangladesh). In India, permanent workers are typically better paid than their informal counterparts (receiving three times the salary of an informal sanitation worker). In South Africa, formal private-sector employees are likely on a minimum wage, whereas public-sector sanitation workers are paid almost double with public health benefits.

Examples of mechanisms that acknowledge and formalize the sanitation workforce in the selected case studies include acknowledging manual sanitation workers in the formal workforce (for example, in Bangladesh and South Africa); developing sanitation worker registries (for example, in India and Bangladesh); introducing new social enterprise models, which safeguard workers and create sanitation jobs in the formal economy (for example, in Kenya and Haiti); and, to a lesser extent, the formation of unions or associations (for example, in India,

<table>
<thead>
<tr>
<th>Manual sanitation work acknowledged in policies/strategies</th>
<th>Bangladesh</th>
<th>Bolivia</th>
<th>Burkina Faso</th>
<th>Haiti</th>
<th>India</th>
<th>Kenya</th>
<th>Senegal</th>
<th>South Africa</th>
<th>Uganda</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational health of sanitation workers protected by law</td>
<td>⚫</td>
<td>—</td>
<td>—</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
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<td>—</td>
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<tr>
<td>Legal protection carries through subcontracting</td>
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<td>〇</td>
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<td>—</td>
<td>—</td>
<td>⚫</td>
<td>—</td>
</tr>
<tr>
<td>Training on sanitation worker occupational health and hazards is provided</td>
<td>〇</td>
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<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>⚫</td>
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</tr>
<tr>
<td>Standard operating procedures or guidelines exist specific to sanitation</td>
<td>〇</td>
<td>〇</td>
<td>—</td>
<td>〇</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>⚫</td>
<td>—</td>
</tr>
<tr>
<td>Safeguarding of sanitation worker health is done</td>
<td>⚫</td>
<td>—</td>
<td>—</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
<td>〇</td>
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<td>—</td>
</tr>
<tr>
<td>Sanitation workers belong to unions or associations</td>
<td>⚫</td>
<td>—</td>
<td>—</td>
<td>〇</td>
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<td>〇</td>
<td>〇</td>
<td>⚫</td>
<td>—</td>
</tr>
<tr>
<td>Initiatives specifically advocating for sanitation worker rights exist</td>
<td>—</td>
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</tbody>
</table>

Note: Sanitation worker protections in place:

⚫ = yes, at a national level and part of national strategy;
〇 = limited, either to a local level or otherwise specific intervention;
⚪ = no;
— = evidence not identified at this stage.

This table is not intended to be exhaustive and will be populated further during subsequent work.

a. May only relate to formal workers, which precludes significant numbers from much of the above if manual workers are not recognized.
Bangladesh, Burkina Faso, Senegal, and South Africa). Acknowledgment is the first step for the occupational health of sanitation worker rights to be recognized by law.

On the other hand, when regulation has gone to the length of prohibition of manual sanitation work, it has often failed to protect the workers because there are context-specific reasons why manual emptying prevails such as inaccessibility for motorized services, and pumppability of drier, typically older sludge (WHO 2018). If this work is prohibited, local authorities may deny the practice, thus further increasing the lack of visibility and voice of sanitation workers.

Mitigating Occupational Health Risks for Sanitation Workers

The first step in mitigating occupational risks for sanitation risks is understanding what they are. These risks may vary between contexts, but at the most fundamental level, they are about avoiding direct exposure to the risks previously mentioned, through adequate health and safety measures. Local-level risk assessment of sanitation work can identify the priority risks at each step of the service chain. Mechanisms to reduce exposure will include a combination, of improvements to management practice, technology and workers behavior. Examples include appropriate use of PPE such as gloves, full-body suits, boots, glasses, gas detectors. They also include technologies to eliminate the need for sanitation workers to enter pits or sewers, including pumping mechanisms such as the e-Vac (developed in partnership with eThekwini) and robotic devices being tested in India to clear sewers. Some examples show the municipality lending or renting safety equipment (for example, in Bangladesh and Burkina Faso); others describe initiatives to provide credit to sanitation business opportunities to buy equipment (for example, in India). Regardless of technologies used, workers need to be trained in their use according to standard operating procedures and mechanisms to ensure they are being followed need to be in place to ensure risks are mitigated.

Delivering Health Services to Sanitation Workers

Receiving vaccines and regular health checkups and having health insurance were observed in the case studies as mechanisms intended to safeguard sanitation workers’ health. In the case examples of India and Bangladesh, permanent municipal sanitation workers have health insurance. Employees of the company running the fecal sludge treatment plant in Dakar, Senegal, and a container-based sanitation company in Haiti are given regular health checkups and vaccinations.

Vaccinations, health insurance, and regular health checks are also included in the standards and guidelines for sanitation workers developed in Bangladesh and Kenya.

Establishing Standard Operating Procedures and Guidelines

Standard operating procedures and local-level guidelines for sanitation work have been developed in Bangladesh (box 2.2) and Kisumu, Kenya, and have been adopted at the city level. They specify training on occupational hazards and the use of PPE as well as mechanisms to protect workers’ health and livelihoods. Regular monitoring of work and behavior of sanitation workers is needed to support the implementation of standard operating procedures.

Standard operating procedures and guidelines that include manual emptying practices offer a more inclusive mechanism to protect the most vulnerable sanitation workers. However, compliance with the procedures is likely to be especially low among informal, unlicensed, and temporary workers.
Promoting Workers’ Empowerment through Unions and Associations

Trade and worker unions for sanitation workers play an important role in advocating for workers and improving their working conditions (box 2.3). They exist in parts of India, Bangladesh, and South Africa. With the support of these unions, permanent sanitation workers have experienced formalization and improvements of basic working conditions (such as employment contracts and terms, regular pay, paid leave, and health insurance), which are protected by law.

In the cases of Burkina Faso and Senegal, although the emptiers’ associations do not provide legal protection to their members, they do provide a mechanism for the emptiers to organize and demand acknowledgment by the utility and municipalities. The associations’ mechanism has emboldened mechanical emptiers to advocate for municipal contracts and more favorable contract terms. Typically, low-grade temporary and informal workers enjoy none of these rights, they frequently find

The best thing about my job is making the consumers happy, I feel happy making the consumers happy.

—Christopher Magubane, 36, South Africa

BOX 2.2. Occupational Safety and Health Guidelines for Fecal Sludge Management for Bangladesh

The guidelines highlight the following moral and legal obligations of local government bodies:

• To take necessary action in line with the Health and Safety Guidelines in the Bangladesh Labor Act 2006, National Occupational Health and Safety Policy 2013, and related international conventions ratified by the government of Bangladesh

• To identify risks to OHS in FSM

• To organize awareness-raising sessions on OHS in FSM for emptiers in both the formal and informal sector

• To organize training courses on proper technology, environmentally friendly emptying, transportation and disposal procedures, and use of appropriate protective equipment

• To ensure the highest safety levels in chemical use and other risk factors related to fecal sludge emptying and transportation

• To keep records of occupational accidents, including number of casualties, status of compensation claims, and related legal proceedings

• To develop a pool of experts and trainers on OHS in FSM

• To identify the occupational disease experts in local hospitals and medical colleges and develop institutional linkages with them to ensure access to emergency medical support

• To include OHS issues in the agenda of local government authorities (city corporations and Paurashavas)

The guidelines also suggest responsibilities of other stakeholders including the service recipient, civil society organizations, and relevant ministries.


Note: FSM = fecal sludge management; OHS = occupational health and safety.
their rights violated, and they have no legal protection. Encouraging licensed service providers to employ the historically lower-grade sanitation workers, provided they can conform to standards of behavior and safety, is a mechanism to bring them into the formal sanitation system (WHO 2018).

Although the unions and associations are good mechanisms for professionalizing the sanitation workforce, successful experiences are often localized to a town or district and may associate only a subset of sanitation workers, such as the permanent employees or vacuum tank owners. Mechanisms that improve conditions of some of the sanitation workers can compound the exclusion of the most vulnerable sanitation workers, such as those working manually, informally, and without the ability to associate.

Moreover, sanitation workers’ unions are not necessarily recognized or given freedom to associate. If they do associate in larger unions, they may have weak capacity and limited agency.

In other cases, particularly for low-grade workers, association may not be desirable for the workers themselves.

**Gaps in Knowledge**

Although significant advances have been made in the past decade in understanding urban sanitation technical systems, there is a dearth of good-quality information about the workers who underpin those systems and about their working conditions. The extent of the challenges these workers face is not well-known or well-documented. This assessment showed that there is some information about sanitation workers’ challenges, some evidence of good practices, and a growing body of evidence and actors working to improve sanitation workers’ conditions and rights, but this progress is still ad hoc and fragmented. Key gaps include the following:

- **Quantifying and profiling the global sanitation workforce**: The number of existing sanitation workers overall is unclear, and estimates are often contested. Numbers are typically not disaggregated to specify the type of work. For example, municipal workers may also be grouped with solid-waste management workers, which can obscure accurate quantification of the workforce. Also, existing data sources tend to be incomplete, covering only part of a city or parts of a year. The most vulnerable sanitation workers, those working informally or temporarily in the lowest grade positions, are difficult to quantify for multiple reasons. For example, those working in the informal market may be difficult to locate; they may not want to be acknowledged because of social stigma; and low-grade, unskilled day laborers may work as general manual laborers, may take on multiple roles, and

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**BOX 2.3. The Memphis Sanitation Workers’ Strike**

The Memphis sanitation workers’ strike of 1968 involved 1,100 of 1,300 of the city’s solid waste collectors supported by Dr. Martin Luther King Jr., a leading civil rights activist in the United States. The strike was triggered by the accidental deaths of two sanitation workers and by a separate incident on the same day in which 22 low-grade sewer workers were sent home without pay. The events revealed ongoing racial segregation in the city, and the strike served as a catalyst for both the civil rights movement and public service unions across the United States. The Memphis strike offers an example of a familiar plight of sanitation workers worldwide and how sanitation workers can have a pivotal role in transformational events.
may not necessarily identify as a sanitation worker. These challenges are true of both simple quantification and work-related incidents reporting. Estimates of deaths may be conservative because accidents and incidents often go unreported. Furthermore, there are scant empirical data on the risks and human costs associated with providing sanitation services; the data tend to be anecdotal. Also, not enough evidence is available to confirm or reject the idea that child labor is used for sanitation work. If it is, this situation is devastating because there are lifelong consequences, and this is an important issue that warrants more attention. Data related to women sanitation workers are also limited. The gender dimension should be further investigated.

• **Policy (regulatory and legal):** Relevant policies, regulations, standards, and legislation that would systematically govern sanitation workers need to be identified. Where such policies are available, the extent to which they are appropriate or effective or are being enforced to protect sanitation workers needs to be better understood.

• **Institutional arrangements:** Optimal institutional arrangements models that safeguard sanitation workers across different dimensions need to be studied and documented.

• **Impact of interventions:** The impact and determinants of different interventions for the sanitation workforce is not well-known and needs to be evaluated. These interventions include improving working conditions and professionalization or creating entrepreneur and exit strategies for sanitation workers and their children, among others.

• **Parallels with other sectors:** Capturing lessons learned and successes that allowed for progress and professionalization in other sectors could inform any future development toward improving the working conditions of sanitation workers.

• **Allies and stakeholders:** Identifying the different actors supporting this work at the local, national, and international levels can be useful to create opportunities and build synergies to move this agenda forward.

Many more concerted and comprehensive efforts in this area are needed across all actors. The previously mentioned knowledge gaps could be addressed in a future study, a proposal for which is detailed in appendix B.

**Note**

1. *Manual sanitation work* refers to nonmotorized or nonmechanical sanitation work where workers use their bare hands or basic equipment such as buckets, ropes, shovels, and so on to undertake their tasks.