

City-level quantification and profiling of sanitation workers



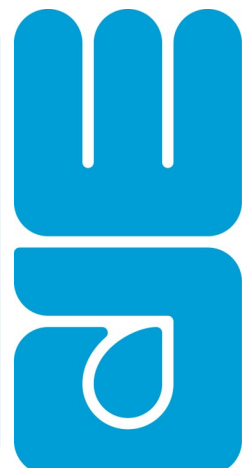
Options for integrating sanitation worker assessments in the shit flow diagram process



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WaterAid

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1 Introduction

1.1 Why is it important to raise the profile of sanitation workers?

Sanitation workers provide a valuable service to society, but are an unseen, unrecognised and invisible labour force, often working in unsafe environments that endanger their lives.^{1,2}

Sanitation workers issues are excluded in documentation, sanitation legislation and overall sanitation planning agendas. However, more recently, organisations have begun to capture the harsh realities of sanitation workers highlighting their plight beyond the occurrence of death or injury.^{2,3,4} But more needs to be done.

The sanitation workforce needs quantification and profiling to clearly define who the workers are, who their employers are and determine their workplace health and safety. However, most of the activities undertaken by sanitation workers are unrecorded because many are only engaged or active in the informal sector. Where information does exist, it is often ad hoc and focused on a limited group of workers, such as the work done by mechanical emptiers with vacuum tankers, or the plight of manual pit emptiers.

Addressing this issue is challenging as in many settings data is scarce on the number of workers, their working conditions, modes of employment and legal status. However, quantification and profiling of these issues is clearly needed, so that the scale and extent of the problem is better understood. The objective of this short study was therefore to scope out options for how the importance of sanitation workers could be highlighted, and how their integration with an established method for city-level sanitation assessments might help, such as the shit flow diagram (SFD) process.

1.2 What does this report contain?

This report presents options for how to carry out a quantification and profiling through assessments of workers at city level. The report contains the suggested scope for a sanitation worker assessment, the dimensions to be assessed, questionnaires that could be used to generate data on these different dimensions, and possible options for presentation of both quantitative and qualitative data. The focus of the latter is on infographics that are visually informative, a widely recognised strength of the SFD graphic.

2 Method

The study included a review of literature, Key Informant Interviews (KIIs) and a stakeholder feedback session.

The literature review was limited to recently published literature and ongoing work on sanitation workers. The focus was to enable identification of areas for quantification and profiling, as well as work by others to quantify and profile sanitation workers at both city and national level, and to understand the challenges they faced in collecting and presenting data.

Six remote KIIs were carried out with stakeholders from non-governmental organisations (NGOs), academia, development organisations and international organisations purposively selected due to their knowledge and experience in the topic area. Annexure 2 contains both the list of informants and the interview guide.

A virtual feedback meeting was held with various stakeholders from NGOs, academia, researchers, development organisations and international organisations. Annexure 3 contains both the list of participants and a summary of the meeting discussion.

3 Key findings

3.1 Main issues to consider in quantification and profiling

3.1.1 Different types of sanitation worker

The term sanitation worker is used to describe people who provide services ranging from toilet cleaning, pit and tank emptying, to operating treatment works. Figure 1 provides a summary of the types of work commonly associated with sanitation workers, organised by the sanitation service chain.

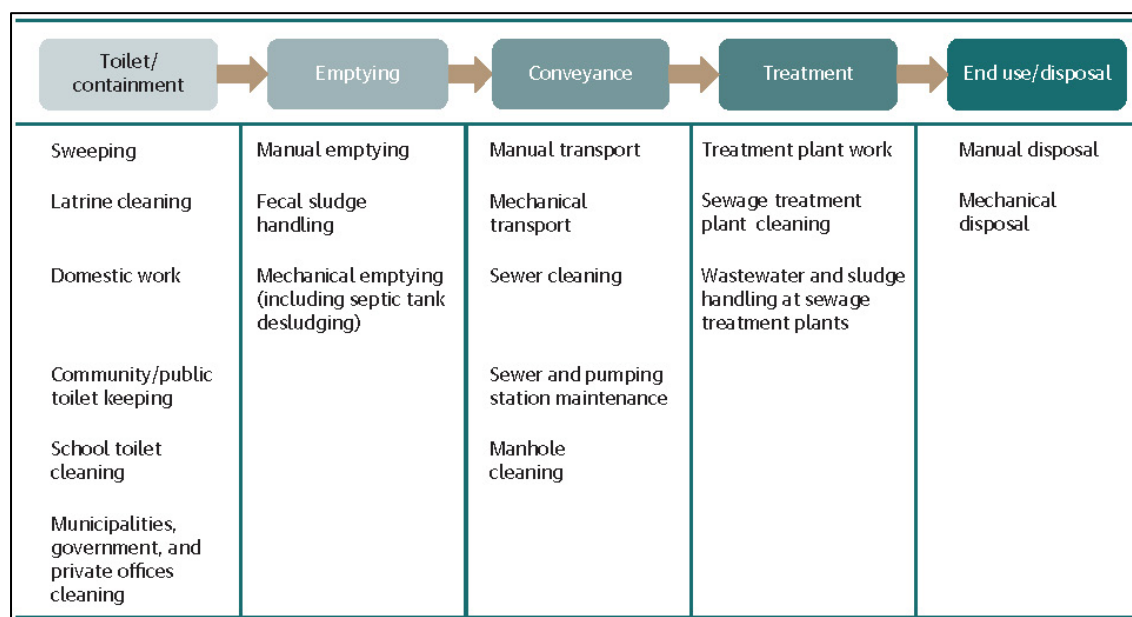


Figure 1: Types of sanitation worker at each step of the sanitation service chain.

(Source: World Bank, ILO, WaterAid and WHO, 2019)²

In some countries, and in some instances, other types of worker, such as solid waste pickers or street sweepers, are also sometimes referred to as sanitation workers, however these workers do not routinely ‘manage’ excreta and are therefore not considered to be within the scope of this study.

3.1.2 Different aspects or dimensions to consider

The literature review and KIs identified important aspects to consider in the quantification and profiling of any group of sanitation workers, in any city. These were further discussed in the feedback meeting and include:

Demographics to identify the number of each type of worker, and then to disaggregate by their gender, age, ethnicity, caste and/or religion.

Physical security to understand the levels of risk of exposure to various hazards (physical, biological and chemical) from activities such as direct handling of faecal sludge, performing physically demanding work and working in confined spaces, which can result in injury, sick days and even death. To understand the steps taken (or not) to reduce and mitigate against these risks, such as safety training, use of personal protective equipment and availability of first aid and welfare facilities.

Financial security to understand the various modes of employment, for example whether they are self-employed or contracted to work part-time or full-time for a private company or for a public organisation (e.g. a government department). To understand the level of pay or wages received and the hours or days worked per week or month, and any benefits received.

Legal security to understand the enabling environment supporting sanitation workers at the city level, but also at regional and national levels, and how structures ensure sanitation workers rights are protected.

Dignity of the workers in order to understand the level of discrimination and stigmatisation they experience both while carrying out their work and in social situations. Along with how this impacts their well-being and opportunities for both the workers and their families.

3.2 Challenges and questions

How to deal with data gaps?

The scarcity of data on sanitation workers was a common issue raised in the KIIs and found in the literature review (see Annexure 4). Data availability is often limited even for sanitation workers engaged within the formal sanitation sector, but in many low- and middle-income countries, many sanitation workers are informal, unorganised and not recognised by any legal institutions.

Informal sanitation workers have often done the work for many years. While many identify as sanitation workers, others prefer not to be seen or identified. Both groups often work at night and are commonly referred to as an invisible workforce. Other contributors to the invisible labour force are those providing sanitation services seasonally, part-time or on a casual daily labourer basis. In many instances, they belong to minority ethnic groups and inherit this unofficial work from older family members. Their activities are therefore rarely documented and not included in city, regional or national level employment record systems or databases.

How to manage the high variability in context?

Sanitation workers in low- and middle-income cities clearly face many challenges and there are many common themes. However, the context in which they deliver their service and the specific issues they face vary widely, from country to country and from city to city. Sanitation systems used range from sewerage (offsite) systems to non-sewered (onsite) systems, which might include sewer cleaning and septic tank emptying to collecting and transporting container-based sanitation toilets. The enabling environment in which these services are delivered, and the level of stakeholder engagement also varies enormously, affecting not only the quality of the services delivered, but also the availability of data with which to make an assessment.

The resources available to carry out an assessment are also highly context dependent. Where human capacity and finances are available, primary data could be collected through surveys, KIIs and focus group discussions with senior officials, managers and sanitation workers themselves, potentially enabling triangulation of the data collected. However, where resources are limited, an assessment would have to rely on secondary data collected through a literature search and KIIs held remotely (i.e., over the telephone and/or via the internet and email) with only the officials and managers, and would therefore be likely to provide data at a comparatively lower confidence level.

What level of assessment is appropriate?

Quantifying and profiling sanitation workers is clearly challenging, especially if a high level of confidence and/or high level of detail is required. This points to the need for a flexible tool that is appropriate for use in any city – taking into account the wide variation in data availability and setting or context – but that can be adapted and used either for a detailed assessment or for a quick overview of the situation.

4 Discussion

4.1 Which workers to include?

Figure 2 shows a modified list of sanitation workers, which are proposed for inclusion in any quantification and profiling assessment. This list excludes the sweepers, latrine cleaners and domestic workers (shown in Figure 1). These workers are important, and they provide valuable services, but since they generally work at a domestic level within people’s homes, rather than working in public areas and/or providing a public service, they are considered outside the scope of this study. In contrast, school, office and other types of toilet cleaners, who clean facilities in public locations, are included.

In some instances, the terminology has also been modified in order to clarify the types of work, while ensuring that the scope of worker is comprehensive and complete for the whole sanitation chain. For example, ‘faecal sludge handling’ is considered the same/very similar to ‘manual emptying’ and has therefore been removed, while ‘sewage treatment plant cleaning’ has been shortened to ‘treatment plant cleaning’, and this more general term therefore includes cleaning workers at both sewage treatment plants and at faecal sludge treatment plants.

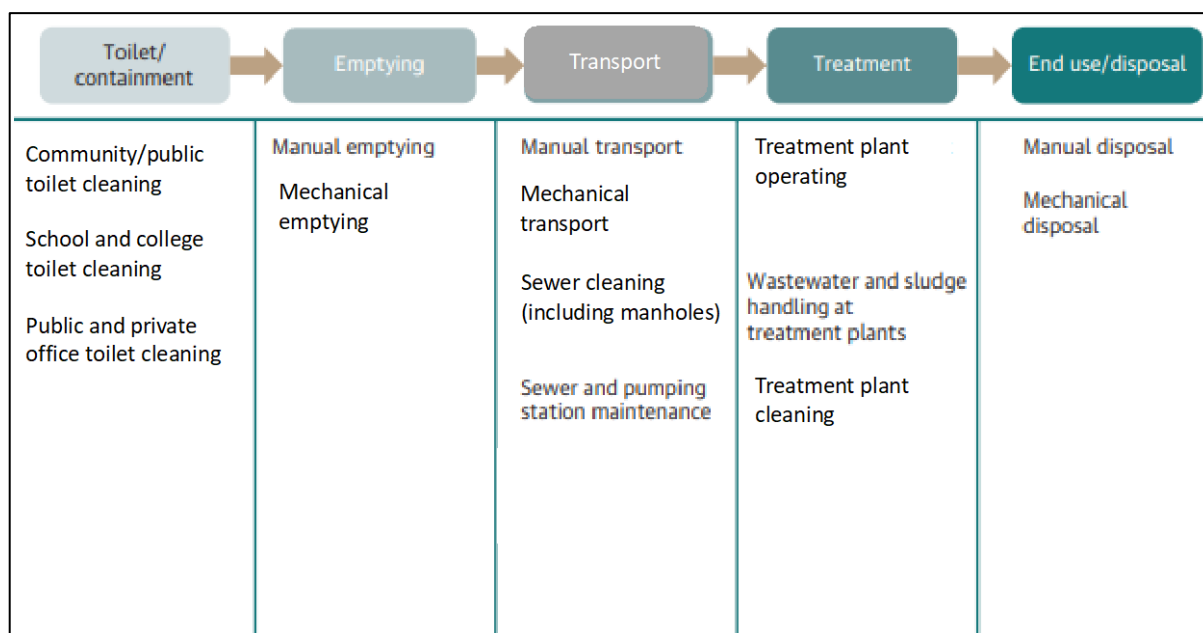


Figure 2: Types of sanitation worker proposed for inclusion in any city-level quantification and profiling assessment. (Source: adapted from the World Bank, ILO, WaterAid and WHO)²

4.2 Which dimensions to include?

Figure 3 shows the five key dimensions which are proposed for inclusion in any quantification and profiling exercise. Each of the five dimensions has been further broken down to show the topics or aspects that would be important to cover. These topics have been further developed into questions (see section 4.4 and Annexure 5) and provide the framework for the assessment.

Demographics	Physical security	Financial security	Legal security	Dignity
<ul style="list-style-type: none"> • Worker type • Number of each type • Gender • Age • Religion • Ethnicity 	<ul style="list-style-type: none"> • Types of hazard • Equipment • Safety training • Personal Protective Equipment (PPE) use • Welfare facilities • First aid available • Accidents, illness, disease, deaths • Medical testing and vaccinations available 	<ul style="list-style-type: none"> • Employer (or self employed) • Contract type (if any) • Typical hours (or days) month • Typical pay (or fees charged) • Typical benefits (if any) 	<ul style="list-style-type: none"> • Policies, laws and regulations (enabling and restricting) • Approvals and licensing • Compliance monitoring • Enforcement • Grievance mechanisms and procedures • Co-operatives or unions 	<ul style="list-style-type: none"> • Discrimination (human rights) • Appreciated or stigmatised • Housing/living standards • Level of education • Education and opportunities for children • Support networks available • Changes in working practices

Figure 3: Key dimensions to include in any quantification and profiling of sanitation workers.

4.3 How could these dimensions be assessed?

As discussed, assessing these dimensions poses a challenge due to the diversity and variability of contexts across cities. This points towards the need to have an adaptable assessment process that could be tailored to suit the situation in any given city. The SFD process⁵ has adopted this approach for assessing service delivery of sanitation systems and networks.

Clearly, linking a sanitation worker’s assessment to an SFD assessment and building on this approach would have benefits – both in terms of the style of approach but also that in each location where an SFD is being (or has been) prepared, it is likely that data may be more readily available (e.g., on the different sanitation systems in use, their performance and the stakeholders involved).

In addition, the SFD approach includes four different levels of SFD that users can prepare. Ranging from a light touch (Lite SFD) that can be prepared remotely with secondary data, to a fully comprehensive SFD using primary and secondary data. A Lite SFD provides an overview of the situation, which is useful for gaining a first understanding of how sanitation services are delivered in a city. This approach provides a credible representation, but because much of the data will be from secondary sources, it is not necessarily accurate. In contrast, the comprehensive SFD method requires collection of up to date primary and secondary data. The resulting SFD graphic and report is therefore potentially more detailed and accurate, and at a higher level of confidence.

This adaptable, tiered approach could address some of the context and data scarcity challenges in carrying out sanitation worker assessments.

A **light touch assessment** could be used to gain an overview of the different types of workers in a city and the range of issues they face, or for focusing on the most vulnerable workers and assessing their circumstances in detail. Data for this type of assessment could be collected remotely, and through secondary data sources, or in the field through primary data collection, the latter would potentially provide a higher level of confidence that the data is complete and accurate. Data sources could include KIIs with employers and support organisations (government departments, utilities, companies, co-operatives, NGOs etc).

In contrast, a **full (or comprehensive) assessment** would most likely include all sanitation workers in a city, not just the most vulnerable, and always require collection of primary data. Data sources would include KIIs with employers and support organisations, but also focus group discussions with samples of all worker types and worker surveys. This would ensure that comprehensive assessments potentially come with a high level of confidence in the accuracy of the findings.

Where the local context does not fit either of these two alternatives, an **intermediate assessment** could be used. This could include a blend of primary and secondary data and some (but not all) of the types of worker in the city.

Importantly, it is recommended that any light touch, intermediate or full assessment would always include the **five** dimensions presented in Figure 3.

Figure 4 shows how the scope and level of confidence in the findings might vary depending on the level and extent of data collection deployed.

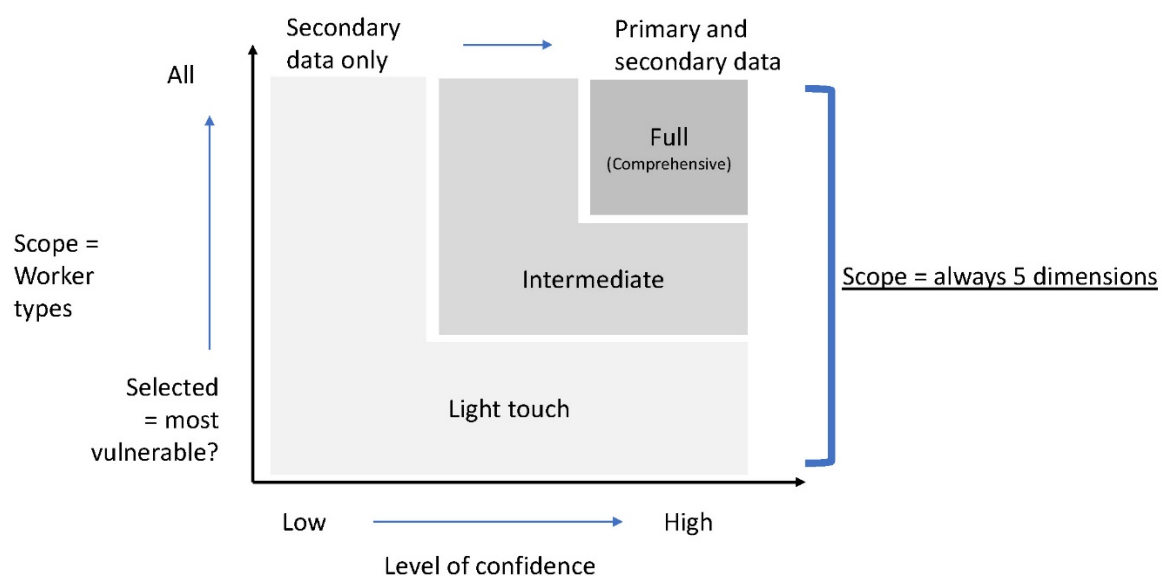


Figure 4: Scope and level of confidence of light touch, intermediate and full sanitation worker assessments.

4.4 Questions for quantification and profiling sanitation workers

The light touch (or golden) questions in Figure 5 comprise a one-page list of eleven questions and are at a relatively high level. Annexure 5 includes both the intermediate assessment and full assessment questions. The intermediate questions build on the light touch questions with a limited number of follow up questions (a total of 24 questions), and the full assessment questionnaire further builds on the intermediate questions, with follow up questions for many of the topics (36 questions).

Light touch (or golden) questions

These golden questions are the minimum required to obtain an overview of all sanitation workers (or a specific group of workers) in a town or city.

Use the questions in sections 1 and 2 to understand the demographics of the workers in the city or town (see the Excel sheet in Annexure 6 for an example of how the collected data could be tabulated).

<p>1. Types of sanitation worker</p> <p>What are the different types of sanitation worker? Tick all that apply (or if for a focussed assessment, select the type of sanitation worker(s): e.g., Public toilet cleaners School and college toilet cleaners Office toilet cleaners Manual pit emptiers Mechanical pit emptiers Etc....</p>
<p>2. Demographics</p> <p>For each type of worker selected in section 1:</p> <p>a. How many of each type are there? (e.g., Public toilet cleaners _____ Office toilet cleaners _____ Manual pit emptiers _____ ... etc.)</p> <p>b. Who are they employed by? (e.g., how many of the manual pit emptiers are: self-employed _____, employed by private companies _____, employed by private co-operatives _____, or employed by a government department ... etc.)</p> <p>c. What is the gender distribution? (i.e., for each worker type and each employment category, how many are: male, female, or gender not specified?)</p> <p>d. What is the age distribution? (i.e., for each worker type, employment category and gender, how many are: under 18, 18 – 24, 25 – 40, over 40?)</p>
<p>For each type of sanitation worker identified (or for the chosen type of sanitation worker in case of a focused assessment), answer the questions under each of the four dimensions below:</p>
<p>3. Physical safety</p> <p>a. What potential hazards are they exposed to (biological, chemical and physical)? Please list and describe (e.g., fresh excreta, noxious gases, sharp objects etc.)</p> <p>b. Do they have and use personal protective equipment (PPE) and/or any standard operating procedures (SOP)? (Y/N) If yes, what does this include?</p>
<p>4. Financial security</p> <p>a. Do they typically have a formal employment contract? (Y/N) If yes, is it casual; part-time; full time; permanent; flexible? If no, is it casual day labour; part-time; full time; permanent; flexible?</p> <p><i>For each type of contractual arrangement identified above, answer the following questions:</i></p> <p>b. Do they receive a regular salary? (Y/N) If yes, how much do they earn per day (or week or month)? If no, how do they get paid and how much do they earn per day (or week or month)?</p> <p>c. What are the typical hours (or days) worked per day (or week or month)?</p>
<p>6. Dignity</p> <p>a. Are they subject to abuse or stigmatised by others while carrying out their work, or in social situations? (Y/N) If yes, please describe</p> <p>b. Are there policies or laws, or any government- or NGO-led programmes in place to support these workers? If yes, please describe.</p>

Figure 5: Light touch assessment questions for quantification and profiling sanitation workers.

4.5 How could assessment findings be presented?

Options considered for data reporting and presentation include tables, infographics, an adapted SFD graphic, or a scorecard for representing more qualitative aspects.

4.5.1 Presentation of quantitative data

A data set on sanitation workers in Lusaka, Zambia,⁶ is used to illustrate how information could be presented.

Data tabulation

The simple layout of Table 1 could be used to tabulate the data collected in any city. Importantly, the table includes the types of worker (listed in the first column as per the sanitation service chain) and the number of workers, which is then disaggregated by the sector in which they work and their gender. Where more data is available, this table could be extended horizontally to include, for example, the workers' contract types, typical hours/days worked per month, their age distribution, religion etc., and extended vertically to include different worker types and sub-types. For example, Annexure 6 includes a screenshot of an Excel sheet developed for data tabulation, which shows the additional rows of worker type and sub-types, and how the data points could be tabulated ([the Excel sheet is available through this link](#)).

Table 1: Summary of data collected on sanitation workers in Lusaka.

Type of worker	No. of workers	Employer	Sector		Gender	
			Formal	Informal	Female	Male
Sewer cleaners	54	Lusaka Water Supply and Sanitation Company (LWSC)	54	0	0	54
Manual emptiers	461	Private sector: individuals	91	~370	0	~461
Mechanical emptiers	177	Private sector: various companies	177	0	0	177
Treatment plant workers	40	LWSC	40	0	0	40
Total	732		362	~370	0	732

Note ~ based on estimates (Source: adapted from Kapulu, 2020)⁶

Potential infographic options

Figure 6 shows how the data for Lusaka could be presented using a formal/informal sector lens. This highlights that slightly over half the total population of sanitation workers are in the informal sector and providing manual emptying services.

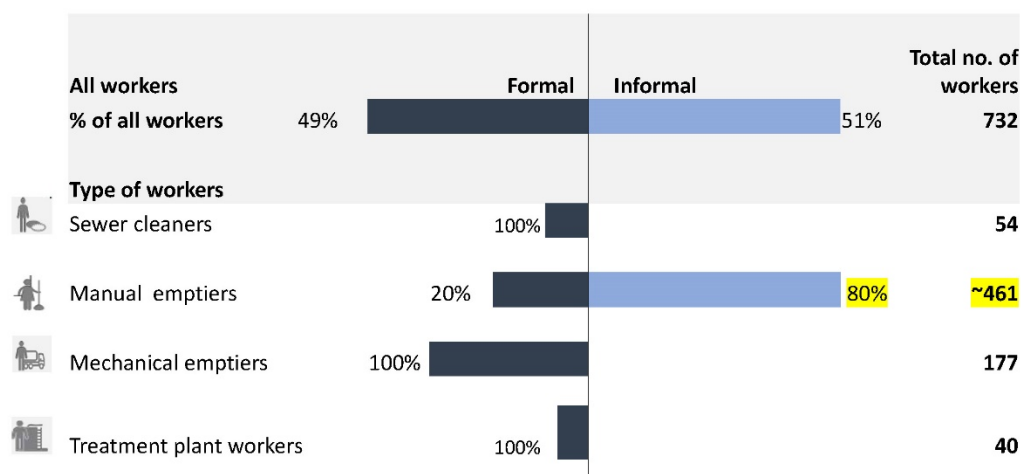


Figure 6: Infographic showing typography of sanitation workers using a formal /informal sector lens. (Source: adapted from Dalberg, 2017⁷ and Kapulu, 2020)⁶

Similarly, the infographic could be adapted to present the data through the gender lens, as shown in Figure 7. This suggests that in Lusaka, either no women work in the steps included for the assessment (emptying, transport and treatment steps) or, that women sanitation workers in these steps are invisible.

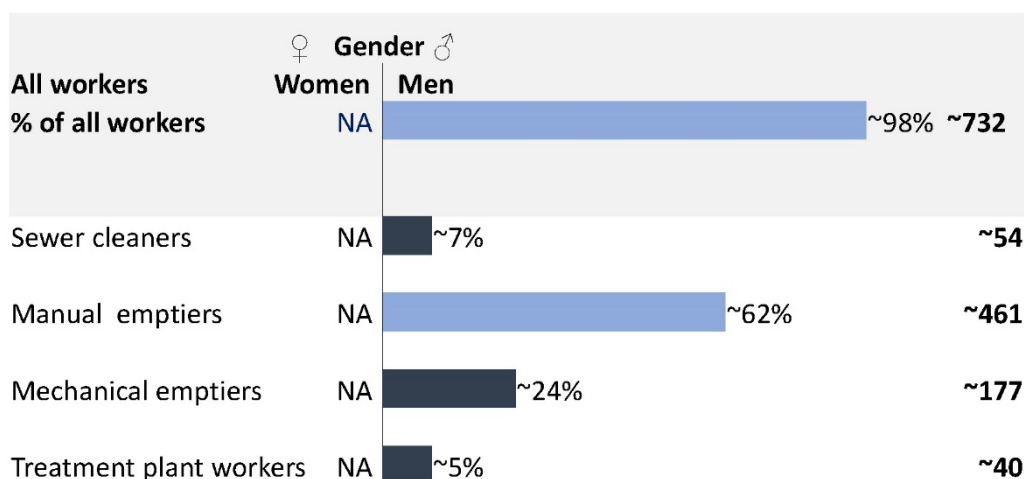


Figure 7: Infographic showing typography of sanitation workers using a gender lens. (Source: adapted from Dalberg, 2017⁷ and Kapulu, 2020)⁶

Clearly, there are many variations on how this data could be presented, but these examples have two simple but common themes – they are organised by the sanitation value chain and focus attention on one issue only. They could therefore potentially be replicated for any important issue and in any city.

Where an SFD graphic has been produced, the sanitation worker data could potentially be added. Figure 8 has been adapted to highlight where on the sanitation chain the Lusaka sanitation workers provide their services. This data has been added/edited manually to the SFD graphic, which was generated automatically using the SFD online tool.⁵

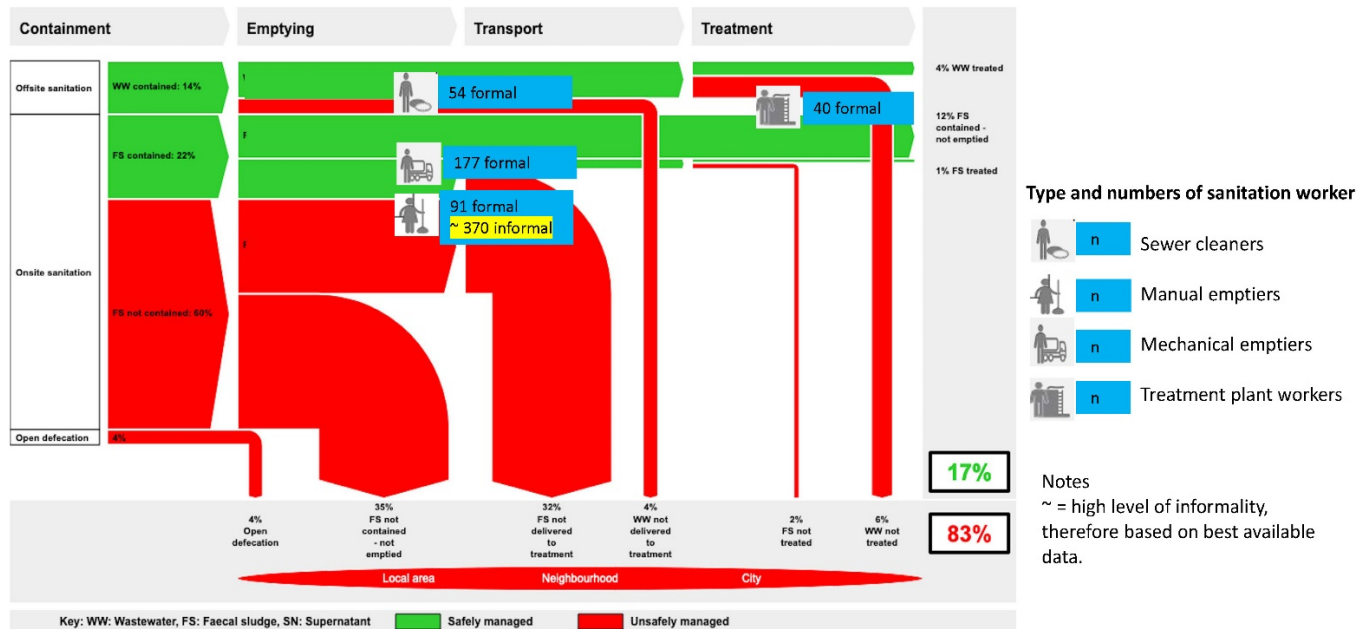


Figure 8: SFD graphic for Lusaka showing types and numbers of sanitation workers, disaggregated by formal/informal sector. (Source: adapted from Kappauf et al., 2018⁸ and Kapulu, 2020⁶)

4.5.2 Presentation of qualitative data

A narrative description of qualitative data would help support any assessment findings, but presenting this information in a table or with a scorecard could highlight important issues.

For example, a summary table is used in the World Bank’s 2019 initial assessment report on sanitation workers (see example in Annexure 5), which includes a short description of all the aspects covered. A similar approach could be adopted and adapted, which would include the five dimensions proposed in this study, as shown in Figure 9.

Type of worker and description	No. of workers	Physical security	Financial security	Legal security	Dignity
Manual emptiers					
Informal, self-employed, casual day labourers	510	Short summary description of responses to physical security questions (lite, intermediate or comprehensive)	Short summary description of responses to financial security questions (lite, intermediate or comprehensive)	Short summary description of responses to legal security questions (lite, intermediate or comprehensive)	Short summary description of responses to dignity questions (lite, intermediate or comprehensive)
Formal, part time, government	126	ditto	ditto	ditto	ditto
Mechanical emptiers					
Informal, part time, private co-operatives	57	ditto	ditto	ditto	ditto
Formal, full time, government	26	ditto	ditto	ditto	ditto
Treatment plant workers					
Etc, etc.,					

Figure 9: Example layout of option for presentation of qualitative data.

This format provides opportunity to describe the whole situation across all the dimensions and for all workers but does not allow a comparison to be drawn easily between the type of worker. Presenting the data for only one dimension would facilitate this, as shown in Table 2, which depicts the physical security dimension of each of the sanitation worker types in Lusaka.

Table 2: Assessment of physical security of sanitation workers in Lusaka.

Aspect \ Type of workers	Health and safety training provided	PPE availability and use	Use of safety equipment in confined spaces	First Aid equipment availability and use	Medical testing provided	Adequate supervision provided during work	Safety incidents reporting
Sewer Cleaners	●	●	●	●	●	●	●
Manual Emptiers	●	●	●	●	●	○	○
Mechanical Emptiers	●	●	○	○	○	○	○
Treatment plant workers	●	●	●	●	●	●	●

Key

- = yes
- = sometimes provided and/or used
- = not provided and/or used
- = no evidence

(Source: Adapted from Kapulu, 2020)⁶

4.5.3 Presenting both quantitative and qualitative data in a scorecard

Another way of presenting the data would be to include elements of both quantitative and qualitative data, both of which are key to understanding the extent to which sanitation worker types and sub-types are marginalised. Figure 10 shows an option for how this could be done. The graphic is colour coded to indicate the level of health, safety and dignity of each worker type, disaggregated by each of the dimensions, from red (for very poor) to dark green (for at least adequate). The red to dark green coding matches the colours used in the JMP sanitation ladder for SDG indicator 6.2.1. The height of each row is scaled depending on the number of workers of each type, while each worker type is sub-divided so that disparities are highlighted, for example, between formal and informal pit emptiers in the example shown. The people icons could be changed to worker icons (as shown on the other infographic options), while the total number of workers could be colour coded (rather than grey), to indicate an overall level of health, safety and dignity.

The main challenge with ‘producing a scorecard’ of this type is that all the questions would need to be directed towards an agreed set of responses that correspond with the ‘very poor’ to ‘at least adequate’ definitions. However, it does visually highlight the key issues – which workers and how many of them are vulnerable and what aspects are of particular concern – and is therefore potentially a more effective way of presenting the data.

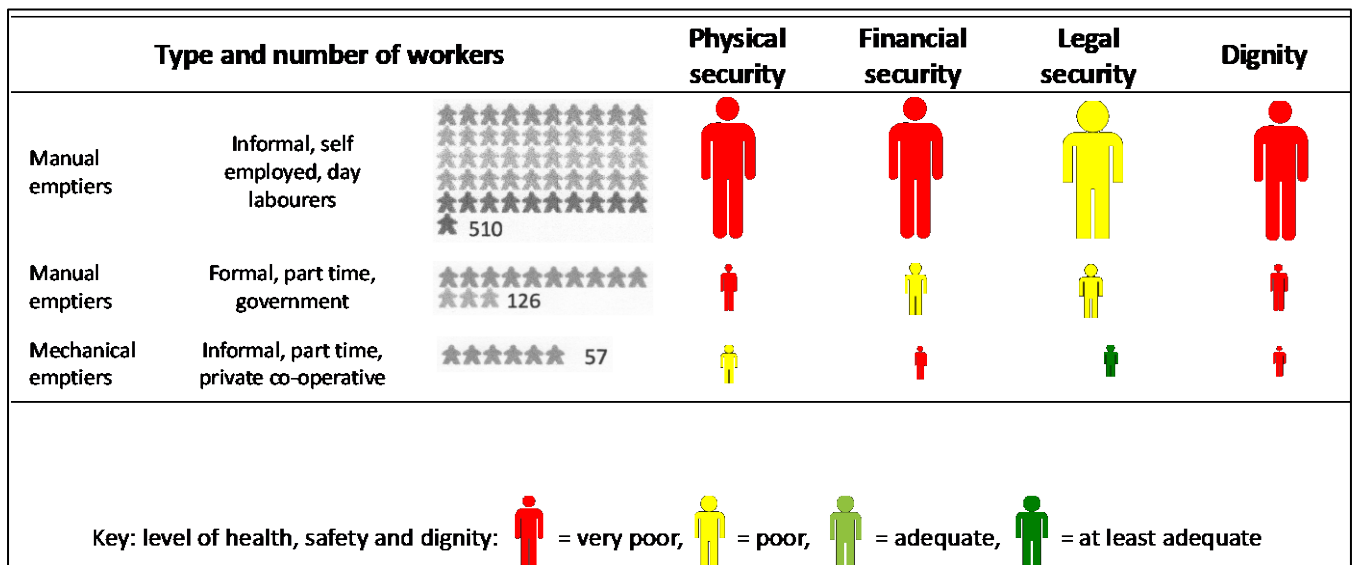


Figure 10: Example layout of sanitation worker quantification and profiling scorecard.

5 Conclusion

Sanitation workers provide important services and are a key link in ensuring safely managed sanitation services, but many face working conditions that endanger their health, safety and dignity. A significant driver of this situation is that they are not taken into account or included in urban sanitation research, design, planning or implementation.

The SFD process is used to assess how sanitation services are delivered in a city, through the lens of the sanitation service chain. It has been used in more than 150 cities and has been helpful in advocating for change and improvements in sanitation service delivery. Depending on the context and availability of resources, SFDs can be carried out at different levels of detail. For example, at a relatively high level (involving only secondary level data and with limited stakeholder engagement), or at a more detailed level (including primary data collection and identification, and engagement with all key stakeholders).

A similar approach or methodology for sanitation workers, either as a separate assessment or as an add-on to the SFD process, could help to mainstream and raise the profile of this important sub-sector.

This report presents options for how to carry out the quantification and profiling through assessments of workers at a city level. The report contains the suggested scope for a sanitation worker assessment, the dimensions to assess, questionnaires that could be used to generate data on these different dimensions and possible options for presentation of both quantitative and qualitative data. The focus of the latter is on infographics that are visually informative, a widely recognised strength of the SFD graphic.

The assessment options and ideas presented are a preliminary step towards development of a complete methodology for quantification and profiling of sanitation workers, which could be carried out in any city. A recommended next step would be a review, testing and further refinement of the options, questions and ideas presented.

Annexure 1: Terms of reference

Integrating sanitation workers issues in the SFD process

Background

Sanitation workers face working conditions that endanger their health, safety and dignity. One of the drivers of this situation is the fact that they are not taken into account, for example, in urban sanitation discussions, research and planning. One way of mainstreaming sanitation workers issues in urban sanitation could be creating links with the (SFD) process. The information on the sanitation workforce could then be factored into urban sanitation plans or in efforts to support sanitation workers. For example, to help with identification of:

- The scale and level of risk that workers face.
- Which workers are at most risk.
- Where on the sanitation chain the risks occur.
- What options are available for mitigating the risks.
- The impact that service delivery improvements might have on sanitation workers' issues (e.g. better working conditions, higher income, job losses etc.).

Objective

To scope out options for how the importance of 'sanitation workers' issues' could be highlighted through their integration with SFDs.

Proposed activities

1. Short literature review (e.g. of relevant 'sanitation worker issues' research publications and SFD reports, papers and documentation).
2. KILs with experts in sanitation workers issues, for example, Ndeye Awa Diagne (World Bank), Sally Cawood (University of Sheffield) and Mariam Zaqout (University of Leeds).
3. Draft a list of relevant aspects to enable categorisationⁱ of sanitation workers in any location, including the type of work, number and type of hazards exposed to, use and availability of personal protective equipment, conditions of employment (contractual arrangements, salaries, skill levels, job security etc.).
4. Draft a list of key components of the enabling environment that are required to support sanitation workers' health and safety in any location. For example, local and national policies, laws, standards, regulations and level of investment in the sub-sector.
5. Develop a method for how to categorise sanitation workers and options for data collection and presentation as 'add-ons' to the SFD process. For example, through including:
 - a. A new/additional section within the standard SFD report format (see service delivery context/assessment (SDA) section) with a draft list of

ⁱ The World Bank, International Labour Institution (ILO), WaterAid and World Health Organisation (WHO) (2019) and Dalberg Advisors (2017) provide a categorisation of workers across the sanitation value chain, while also highlighting levels of risks for each group of workers.

questions that can be used in any location to generate data on the role of sanitation workers.

- b. A sanitation workers vulnerability scorecard or infographic to enable a comparison between cities of the risks workers' face and the enabling environment in each location. (Note: any scorecard or graphic presented will be illustrative only and not fully interactive).
6. Hold a mid-project review of progress with WaterAid representatives.
7. Host a (virtual) feedback session to discuss both the findings and draft outputs described above (e.g. with representatives from WaterAid, SFD Promotion Initiative team and key informantsⁱⁱ).
8. Draft a final report summarising the research method, activities carried out, options proposed for categorising sanitation workers (see activity 5 which includes a consolidated list of questions resulting from activities 3 and 4) and possible next steps (maximum length = 20 pages).

Proposed outputs

- PowerPoint presentation (for feedback session), highlighting activities carried out, initial findings and outlining possible options for the SFD process 'add-ons'.
- Final report.

ⁱⁱ Representatives and key informants to be agreed, but could include for instance, Pippa Scott (iSan), Jemma Philips (UoL), Radu Ban (BMGF), Ruth Kennedy Walker (World Bank), Lucy Stevens (Practical Action), Alix Lerebours (WEDC), Sharada Prasad (Independent researcher, India) and representatives from WaterAid and SFD Promotion Initiative.

Annexure 2: Key informant interviews

List of KII participants

Name	Organisation	Date of Interview
Sally Cawood	University of Sheffield	23/11/2020
Mariam Zaqout	University of Leeds	23/11/2020
Ndeye Awa Diagne	World Bank	23/11/2020
Zael Sanz Uriarte	World Bank	01/12/2020
Lucy Stevens	Practical Action	02/12/2020
Pippa Scott	i-san	03/12/2020

KII guide

1. Referring to the questions below, do the above list of questions cover all the necessary key aspects related to sanitation workers?
2. What are the challenges in collecting data on sanitation workers?
3. Do you have suggestions on how these challenges can be overcome?
4. Who do you think should be the audience/informants for these questions? (and what data sources?)
5. What is your experience with SFDs and the SDA scorecard?
6. If a 'quantification and profiling of the sanitation workforce' component were added to the SFD process (i.e. in any city), how could it be integrated? (i.e. how could findings be presented and reported?).

Quantification and profiling the sanitation workforce (in any city) (see Appendix B of World Bank et al. (2019)²).

Key dimensions to consider:

- Demographics;
- Sanitation workers' occupational and environmental health and safety;
- Sanitation workers' financial security;
- Legal framework they work within;
- Social issues they face.

What are the key **demographics** issues to consider among sanitation workers?

- What is the total number of sanitation workers at every point of the sanitation value chain (containment, emptying, transportation, treatment and reuse)?
- What work do they do? (sweeping; latrine cleaning; domestic work; community/public toilet keeping; school toilet cleaning; municipalities, government, and private office cleaning; manual emptying, faecal sludge handling, mechanical emptying; manual transport; mechanical transport; sewer cleaning; sewer pumping station maintenance; manhole cleaning; treatment plant work; sewage treatment plant

cleaning; wastewater and sludge handling at sewage treatment plant; manual disposal; and mechanical disposal).

- What is the gender distribution of the workers?
- What is the minimum, average and maximum age of the workers?

What are the key aspects related to their **occupational and environmental health and safety**?

- What are the levels of risks various categories of sanitation workers are exposed to?
- What is the overall level of exposure to hazards in each type of work (low, medium or high)?
- Do sanitation workers have PPE?
- What is the impact on health? (most frequent workplace injuries, accidents, deaths, and the burden of disease)
- Do workers follow standard operating procedures?
- Can they access health insurance?
- Do workers receive vaccines?

What are the key aspects related to their **financial security**?

- Who are their employers? (a private company, public, self-employed)
- Do sanitation worker have contracts?
- Are they formal or informal?
- What is their mode of employment? (part-time/ full time/ seasonal)
- How many hours do sanitation workers work?
- Do sanitation workers receive regular payments, paid holidays or compensation for injury?

What is **the legal framework** they work within?

- Do labour laws cover sanitation workers? e.g. prohibiting work
- Do institutional arrangements exist and established to reflect the role of sanitation workers?
- Are laws enforced?

What are the **social issues** they face?

- Are there unions and associations for sanitation workers to register?
- What level of discrimination do they face?
- Are women and children active in sanitation work?

Annexure 3: Summary of virtual feedback meeting with stakeholders

Subject: Integrating sanitation workers' issues in the SFD process

Date: 9 December 2020

Time: 15:00 to 16:30

List of participants

Name	Organisation
Andrés Hueso	WaterAid
Ada Oko-Williams	WaterAid
Sally Cawood	University of Sheffield
Pippa Scott	i-san
Mintje Bührma	GIZ
Arne Panesar	GIZ
Zael Sanz	World Bank
Kate Medicott	World Health Organisation
Mariam Zaqout	University of Leeds
Awa Diagne	World Bank
Alyse Schrecongost	Gates Foundation
Suresh Rohilla. Sr	Director CSE New Delhi
Harsh Yadava	CSE India
Andy Peal	Independent WASH consultant
Chilala Kapulu	Independent WASH consultant

Summary of meeting

1. Presentation

- Andy and Chilala presented to the stakeholders a PowerPoint presentation (available [here](#)), which highlighted:
- The purpose of the work, its objectives, method and the key issues summarised from literature and the KIIs;
- A draft approach highlighted the scope with regards to the steps of the sanitation service chain and the five key dimensions (demographics, physical, financial, legal and dignity) to consider during the proposed three levels of assessment when dealing with sanitation workers issues; and
- Four possible options for data presentation using a table and infographics presented.

2. Discussion

2.1 Inclusions

Demographics: Suggestions were to include aspects of ethnicity, tribal groups, religion and vulnerable groups to identify where the burden lies.

2.2 Scope: Suggestions were to consider making the scope wider and comprehensive to include all types of workers. Concerns with the scope were the criteria of inclusion and exclusion of workers and how drawing the line at emptying inadvertently excludes women (at containment step) to the sanitation workforce. Therefore, it was suggested to include the containment step (community and household), which has a different gender dimension to it and importance for visualisation for the general population because it could be forgotten.

Clarity was required with regards to the key five dimensions (scope) and the infographics to establish whether thoughts to create a hierarchy based on the five key dimensions were considered. A suggestion was to consider highlighting the qualitative and quantitative aspects within the five dimensions and present the quantitative aspects, picking out 1 or 2 aspects to measure.

2.3 Data gaps and variability

It was highlighted that data gaps are to be considered, especially when dealing with informal workers, and to perform a light (lite) touch assessment because respondents may only provide information based on formal workers.

2.4 Infographics

It was suggested that more work on the infographics was required as the infographics only showed the quantitative aspects, while it was also acknowledged that visualisation of the many dimensions of sanitation workers issues could be difficult.

It was agreed that the SFD was a powerful tool, and the following were suggested options for its use and issues to consider:

- It could be used to visualise the numbers of the workers, but needed another tool to complement it, such as a scorecard (one which populates the required numbers of sanitation workers to achieve safely managed services compared to an actual situation as a way to identify challenges and opportunities and show their importance). Other suggestions with regard to the use of the scorecard were to consider making the five key dimensions elements to include in the scorecard.
- It was noted to have had the potential to show flaws and identify the relationship between different actors (stakeholder mapping tool) involved in the service supply chain, while also considering flexibility on the graphical presentation.
- Could be used to identify the limited focus and attention on some of the workers regarding policy, etc., e.g. Policy focus. For example, only 2% of workers were included in the procedure and the rest of the workers not included.
- A question was raised about the end goal of the SFD within this work (public health, or workers' rights) and consider if it sits within the SFD process.
- Suggestions to think about having a sanitation workers assessment without the SFD process.
- Suggestions to include tensions with shifting work from unsafely managed to safely managed (who get the jobs). Thoughts on the inclusion of semi-mechanic emptyings, such as gulper, needed to be considered within this idea.

3. Next steps

- Chilala and Andy to draft an approach, the method and the literature search, and include reflections from this discussion to be done by next week Friday.
- Andres mentioned the interest from a few WaterAid Country Programme teams on sanitation workers issues, and are considering a city-level analysis (some of which have SFDs).
- Kate highlighted consideration alignment of work with the WHO data checklist.
- Consider using the SFD as a 'think piece' and linking it to sanitation workers.

Annexure 4: Literature review: work by others on sanitation worker quantification and profiling

Globally, no credible evidence exists to support estimates on the shortage of human resources in the sanitation workforce across the whole sanitation value chain. Some studies show the numbers of sanitation workers at national and/or city-level, but none show a conclusive picture of what the sanitation workforce looks like.

A national-level study undertaken by the International Water Association (IWA)⁹ in 15 developing countries,ⁱⁱⁱ highlighted the human resource capacity gap in water utility companies. Their recommendation was to invest in human capital resource and support future research to generate and strengthen the evidence base for the sanitation workforce.

An attempt by Dalberg Advisors⁷ in 2017, during their Sanitation Workers Project for sanitation workers in contact with faecal matter across India remains the most comprehensive assessment to have been undertaken to date, with regards to profiling and quantification of various types of both formal and informal sanitation workers. They interacted with all stakeholders, including workers across the sanitation value chain, government officials, contractors, NGOs and experts. The project outcomes led to identifying priority areas and developing an overall strategy with actionable solutions to try and address the problems.

At a city-wide scale study in 2019 by Cawood and Evans¹⁰, in Khulna, Bangladesh, focused on sanitation workers engaged in the operation and maintenance (O&M) of emptying, transportation conveyance and treatment of the sanitation system. They argued that human resource capacity gaps in the sanitation sector were progressively being documented – however, the actual number of workers already employed in the sanitation sector in each city or town was unknown. The type of work; quality; and the opportunities for ‘decent’ jobs created were unclear for sanitation workers. The study proposed the need for a city-wide sanitation skills assessment to address the critical knowledge gaps.

Another report from Bangladesh based on the three cities of Dhaka, Faridpur and Khulna, by Mariam Zaqout et al.¹¹ in 2020 explored the livelihood aspects of sanitation workers. The findings showed a threat in the financial security of both formal and informal workers in these cities. It was noted that the enabling environment and livelihood aspects were the two main distinguishing factors among the workers and the sustainable livelihood aspects were hindered by deep-rooted social and financial barriers.

In another city-wide scale, another attempt from Lahore, Pakistan, captured the challenges of sanitation workers. The focus of this study was the working conditions and the associated stigma and shame based on caste and ethnic minorities due to religious affiliation, and generational ties to Hinduism. The study looked at state policies and laws that directly affect sanitation workers, especially in the context of Occupational Safety and Health Standards of the Decent Work Agenda. Evidence showed that the Christian minority occupied most of these jobs, and their children also ended up in the same cycle of providing janitorial work (Aqeel and Gill, 2019¹²).

A World Bank study of Port-au-Prince metropolitan area, Haiti, included and adapted an SFD developed through mainly secondary review.¹³ The assessment identified the various type of workers and used a modified SFD graphic to show relationships between the workers, employers, financial flows and livelihood aspects. The study highlighted sanitation

ⁱⁱⁱ Bangladesh, Mali, South Africa, Timor Leste, Zambia, Burkina Faso, Ghana, Lao PDR, Mozambique, Niger, Philippines, Niger, Papua New Guinea, Senegal, Sri Lanka and Tanzania.

workers as being a part-time and unidentified workforce and therefore challenging to quantify and profile.

A recent study in 2019 by the World Bank, ILO, WaterAid and WHO², on the health, safety and dignity of sanitation workers drawn from nine case studies^{iv} also emphasised this lack of clarity with regards to the overall numbers of sanitation workers. Estimates of these numbers are often contested, due to limited empirical evidence and data that is anecdotal. The report includes a recommendation for further studies on sanitation workers highlights and the need for quantification and profiling of the sanitation workforce. This would help not only expand the existing body of knowledge on sanitation workers, but also with the identification of practical next steps and development of clear actions to improve the occupational health and safety for sanitation workers.

^{iv} Bangladesh, Bolivia, Burkina Faso, Haiti, India, Kenya, Senegal, South Africa and Uganda.

Annexure 5: Intermediate assessment questions and full assessment questions for quantification and profiling sanitation workers

Intermediate assessment questions

This questionnaire builds on the light touch (golden) questions (see Figure 5) with additional questions under each dimension.

Use the questions in sections 1 and 2 to understand the demographics of the workers in the city or town (see the Excel sheet in Annexure 6 for an example of how the collected data could be tabulated).

1. Types of sanitation worker
What are the different types of sanitation worker? Tick all that apply (or if for a focussed assessment, select the type of sanitation worker(s)): e.g., Public toilet cleaners School and college toilet cleaners Office toilet cleaners Manual pit emptiers Mechanical pit emptiers Etc....

2. Demographics
For each type of worker selected in section 1:
a. How many of each type are there? (e.g., Public toilet cleaners _____ Office toilet cleaners _____ Manual pit emptiers _____ ... etc.)
b. Who are they employed by? (e.g., how many of the manual pit emptiers are: self-employed _____, employed by private companies _____, employed by private co-operatives _____, or employed by a government department ... etc.)
c. What is the gender distribution? (i.e., for each worker type and each employment category, how many are: male, female, or gender not specified?)
d. What is the age distribution? (i.e., for each worker type, employment category and gender, how many are: under 18, 18 – 24, 25 – 40, over 40?)

For each type of sanitation worker identified (or for the chosen type of sanitation worker in case of a focused assessment), answer the questions under each of the four dimensions below:

3. Physical safety
a. What potential hazards are they exposed to (biological, chemical and physical)? Please list and describe (e.g., fresh excreta, noxious gases, sharp objects etc.)
b. Do they have and use personal protective equipment (PPE)? (Y/N) If yes, what does it include?
c. Do they have and use standard operating procedures (SOP)? (Y/N) If yes, what does it include?
d. Do they receive safety training? (Y/N) If yes, please describe
e. What are the most common causes of work-related sick days, accidents, and deaths? Please list and describe

4. Financial security
a. Do they typically have a formal employment contract? (Y/N) If yes, is it casual; part-time; full time; permanent; flexible?

If no, is it casual day labour; part-time; full time; permanent; flexible?
For each type of contractual arrangement identified above, answer the following questions:
b. Do they receive a regular salary? (Y/N) If yes, how much do they earn per day (or week or month)? If no, how do they get paid and how much do they earn per day (or week or month)?
c. What are the typical hours (or days) worked per day (or week or month)?
d. Do they typically pay tax on earnings? (Y/N)
e. Do they work for a company or organisation? (Y/N) If yes, what is the name of the company(s) or organisation(s)?
f. Are they typically members of a workplace association, co-operative, union or CBO? (Y/N) If yes, is this a registered entity? Please describe.

5. Legal security
a. Do government policies, laws and regulations recognise these workers and/or their work? (Y/N) If yes, do they enable or restrict its execution? Please describe.
b. Do they require a licence (or approval of some kind) to carry out the work? (Y/N) If yes, please describe (e.g., cost of licence and procedure).
c. Is their work monitored for compliance against local or national standards? (Y/N) If yes, please describe.

6. Dignity
a. Are they subject to abuse or stigmatised by others while carrying out their work, or in social situations? (Y/N) If yes, please describe
b. Are human rights/minorities rights measures (policies and laws) in place to counter any abuse or stigmatisation? If yes, please describe.
c. Are there any government- or NGO-led programmes in place to support these workers? If yes, please describe.

Full questions

This is an extended version of the intermediate questions, with some additional follow up questions.

Use the questions in sections 1 and 2 to understand the demographics of the workers in the city or town (see the Excel sheet in Annexure 6 for an example of how the collected data could be tabulated).

1. Types of sanitation worker
<p>What are the different types of sanitation worker? Tick all that apply (or if for a focussed assessment, select the type of sanitation worker(s): e.g., Public toilet cleaners School and college toilet cleaners Office toilet cleaners Manual pit emptiers Mechanical pit emptiers Etc....</p>

2. Demographics
For each type of worker selected in section 1:
a. How many of each type are there? (e.g., Public toilet cleaners _____ Office toilet cleaners _____ Manual pit emptiers _____ ... etc.)
b. Who are they employed by? (e.g., how many of the manual pit emptiers are: self-employed _____, employed by private companies _____, employed by private co-operatives _____, or employed by a government department ... etc.)
c. What is the gender distribution? (i.e., for each worker type and each employment category, how many are: male, female, or gender not specified?)
d. What is the age distribution? (i.e., for each worker type, employment category and gender, how many are: under 18, 18–24, 25–40, over 40?)
e. What is the distribution by religion? (e.g., for each worker type, how many are number of Muslims, Hindus, Christians etc.)
f. What is the distribution by ethnicity? (i.e., for each worker type, how many belong to different castes or tribal groups?)

For each type of sanitation worker identified (or for the chosen type of sanitation worker in case of a focused assessment), answer the questions under each of the four dimensions below:

3. Physical safety
a. What potential hazards are they exposed to (biological, chemical and physical)? Please list and describe (e.g., fresh excreta, noxious gases, sharp objects etc.)
b. Do they have and use PPE? (Y/N) If yes, what does it include? Please list. Who procures the PPE? (e.g. Individuals or organisations they work for) And is it fit for use? (tick all that apply): Cleaned daily Appropriate in size Appropriate for the climate Replaced or repaired when damaged (e.g. ripped, cracked)
c. Do they have and use standard operating producers (SOP)? (Y/N) If yes, do they include and cover all activities (e.g., pre-site assessments and post site cleaning of the area?) Are the SOPs routinely checked, revised and updated?
d. Do they receive safety training? (Y/N) If yes, when do they receive training (tick all that apply): Before they start work or a new activity. At pre-defined intervals (e.g., once per year).

When measures/procedures change. At other times? If so, please describe.
e. Are sick days, accidents and deaths at work reported and recorded? (Y/N) If yes, how many of each per year? What are the most common causes? Please list.
f. Do they have access to welfare facilities? (Y/N) If yes, what do these include? (tick all that apply): Access to changing and washing rooms to use before and after work Access to water and soap Access to toilets Others? If so, please describe
g. Do they receive medical checks and vaccinations? (Y/N) If yes, how frequently do they have a check-up? Which vaccinations do they receive? Please list. How frequently do they receive boosters?

4. Financial security

a. Do they typically have a formal employment contract? (Y/N) If yes, is it casual; part-time; full time; permanent; flexible? If no, is it casual day labour; part-time; full time; permanent; flexible?
For each type of contractual arrangement identified above, answer the following questions:
b. Do they receive a regular salary? (Y/N) If yes, how much do they earn per day (or week or month)? If no, how do they get paid and how much do they earn per day (or week or month)?
c. What are the typical hours (or days) worked per day (or week or month)?
d. Do they typically pay tax on earnings? (Y/N)
e. Do they work for a company or organisation? (Y/N) If yes, what is the name of the company(s) or organisation(s)?
f. Are they typically members of a workplace association, co-operative, union or CBO? (Y/N) If yes, is this a registered entity? Please describe.
g. What benefits do they typically receive? (e.g., sick pay, medical care, insurance, holidays, overtime, pensions)? Please describe.
h. Do they carry out additional work (or other work or jobs) to supplement income? (Y/N) If yes, please describe.
i. Do they have access to banks, credit unions or loan associations? (Y/N)

5. Legal security

a. Do government policies, laws and regulations recognise these workers and/or their work? (Y/N) If yes, do they enable or restrict its execution? Please describe.
b. Do they require a licence (or approval of some kind) to carry out the work? (Y/N) If yes, please describe (e.g., cost of licence and procedure).
c. Is their work monitored for compliance against local or national standards? (Y/N) If yes, please describe.
d. Are these standards enforced? (Y/N) If yes, please describe.
e. Are their grievance mechanisms in place? (Y/N) If yes, please describe.

6. Dignity

a. Are they subject to abuse or stigmatised by others while carrying out their work, or in social situations? (Y/N) If yes, please describe.
b. Are human rights/minorities rights measures (policies and laws) in place to counter any abuse or stigmatisation? If yes, please describe.
c. Are there any government- or NGO-led programmes in place to support these workers?

	If yes, please describe.
d.	Have there been changes to working practices that have affected their livelihoods? (Y/N) If yes, describe.
e.	Where do they live? Please describe. (e.g., tenants in slum or informal settlement; employer-provided accommodation; or own house etc.).
f.	What is their typical level of education? (e.g., none; primary, secondary, or higher).
g.	For their children, are there both educational opportunities and employment opportunities outside of sanitation work? If yes, please describe.

Annexure 6: Example of sanitation worker data tabulation

Filename: Q&P of san_workers 20210113.xlsx ([see Excel sheet available here](#))

1	City	State	Country	Date	Prepared by																							
2																												
3	Sanitation chain step	Type of worker	Employer type	Contract type	Category	Number of workers	Male					Female					Religion			Ethnicity (e.g., caste or tribal group)								
4			[select from]	[select from]	[select from]																							
5			Self employed	Casual day labour	Informal																							
6			Private company	Part time	Formal																							
7		NOTE: insert additional rows if more than one group of a worker type	Private co-operative	Full time		Total	<18	18-24	25-40	>40	Sub-total	<18	18-24	25-40	>40	Sub-total	Muslim	Hindu	Christian									
8			Government	Temporary																								
9				Permanent																								
10				Flexible																								
11	Toilet and containment	Public toilet cleaners				0					0					0												
12		School and college toilet cleaners				0					0					0												
13		Office toilet cleaners				0					0					0												
14		Sub-total				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
15	Emptying and transporting faecal sludge	Manual pit emptiers				0					0					0												
16		Mechanical pit emptiers				0					0					0												
17	Wastewater conveyance	Sewer and manhole cleaners (manual)				0					0					0												
18		Sewer and manhole cleaners (mechanical)				0					0					0												
19		Sewer and pumping station maintenance workers				0					0					0												
20		Sub-total				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
21	Treating faecal sludge and/or wastewater	Treatment plant operators				0					0					0												
22		Wastewater and sludge handlers at treatment plant				0					0					0												
23		Treatment plant cleaners				0					0					0												
24		Sub-total				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
25	Disposing of unsafe wastewater and faecal sludge	Manual disposal workers				0					0					0												
26		Mechanical disposal workers				0					0					0												
27		Sub-total				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
28		TOTAL				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
29	Notes:																											
30	Manual = using hands, shovels buckets																											
31	Mechanical = using a machine (motorised and non-motorised e.g. gulper)																											
32																												
33																												

Annexure 7: Summary of qualitative data on sanitation workers in Kenya

TABLE A.6. Kenya

	Formal sanitation workers	Informal sanitation workers
Overview of current practice	Emptying of pit latrines and septic tanks in Kenya is done by many small enterprises and individual manual and mechanical emptiers. Typically, the formal and mechanized exhaustor services serve the middle- to high-income households, offices, and institutions, and manual emptiers operate in the lower-income-dense settlements because of cost (mechanical is more expensive) and vehicle accessibility of the plot (Eales 2005). In Kibera, a vast, informal settlement in Nairobi, 28 percent of households use manual emptying services (Blackett and Hawkins 2017).	
Type of work/customers	Mechanized exhaustor services serving the middle- to high-income households, offices, and institutions	Informal manual emptiers serving the lower-income-dense settlements. Using teams of two to four men, contents are transferred to a 100-liter drum, which is placed on a handcart and wheeled to a nearby disposal site, typically a nearby ditch, stream, or wasteland.
Typical contracting modes	Formal public and private direct (theoretically, if not in practice, via the WSP)	Informal direct business
Equipment	Mechanized exhaustor vehicles. Use of PPE is uncommon.	Manual emptiers' tools are a bucket on a rope and a shovel (sometimes rented) or sometimes plastic bags over their hands (Eales 2005). Emptiers typically pour paraffin in the pit before entering to mask the smell of the excreta.
Occupational health and hazards	Manual emptying is physically demanding work often done at night by torchlight, often without protective clothing such as boots, gloves, or masks.	
Financial status and benefits	Informal sanitation workers are poorly paid and are vulnerable to extortion.	
Social status	Manual emptiers are often subject to abuse by local residents and stigmatization.	
Rights and protections		
Quantifying the problem		
Overview of known progressive actions	<p>The UBSUP initiative targets 400,000 people in small and medium towns using on-site sanitation. It aims to formulate a national FSM approach, including new laws to prioritize on-site sanitation based on the principles of complete sanitation service delivery (Mbalu 2017). By law, fecal sludge treatment services are to be provided by WSPs, but they have typically failed in this duty. The UBSUP provides a mechanism for the WSP to grow its own FSM knowledge and skills and in turn train, equip, and monitor manual emptiers and UDDT container teams to perform the essential sanitation services.</p> <p>In Kisumu, standard operating procedures and specific guidelines to explicitly protect sanitation workers' rights, including manual emptiers, have been developed and adopted at the city level (WSUP 2018). These specify that all employees must be immunized against typhoid, hepatitis B, and cholera; have health insurance; and receive training from the county public health office. The standard operating procedures also specify personal safety and emptying equipment, best practices for transporting and disposing of waste, and customer relations guidelines.</p>	

Notes: FSM = fecal sludge management; PPE = personal protective equipment; UBSUP = Up-scaling Basic Sanitation for the Urban Poor; UDDT = urine-diverting dry toilet; WSP = water service provider.

Source: World Bank, ILO, WaterAid and WHO (2019)²

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