Sanitation worker safety and livelihoods in India: A blueprint for action

Phase 3: Solutioning

29 November, 2017
Where we are on the project

Long-list of opportunity areas

Evaluation and prioritization

Prioritized opportunity areas

Annex
### We are currently at Phase 3 of the project

<table>
<thead>
<tr>
<th>Phase 1 Understanding the problem</th>
<th>Phase 2 Identifying best practices</th>
<th>Phase 3 Developing solutions list</th>
<th>Phase 4 Developing strategy blueprint</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td><strong>Key activities</strong></td>
<td><strong>Outputs</strong></td>
<td><strong>Key activities</strong></td>
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<tr>
<td>5 weeks</td>
<td>• Comprehensively understand the issue from a worker perspective as well as supply-side or institutional perspective</td>
<td>• Best practices report covering:</td>
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<tr>
<td></td>
<td>• Stakeholder and institutional mapping</td>
<td>o Case studies (Global and Indian examples)</td>
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<td></td>
<td>• Desk and expert research</td>
<td>o Design principles for success</td>
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<tr>
<td></td>
<td>• HCD research, incl. interviews, immersive journey mapping, user storytelling</td>
<td></td>
<td>• Brainstorming to develop a long-list of solutions</td>
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<tr>
<td></td>
<td>• Desk research to identify innovations in institutions, hardware, software, financing and regulation</td>
<td>• Solutions report covering longlist and shortlist of solutions</td>
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<tr>
<td></td>
<td>• Expert interviews</td>
<td></td>
<td>• Develop an overall strategy blueprint to address the problem</td>
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<tr>
<td></td>
<td>• Field research for case studies, if needed</td>
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<td>• Develop a national strategy at different levels of government</td>
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<td>• Discussions/feedback sessions with BMGF, govt., NGO stakeholders</td>
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<td></td>
<td>• Develop final blueprint, with high-level recos for 1-2 cities</td>
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<td>• Develop partnership directory</td>
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<td></td>
<td>• Final national strategy and city blueprint</td>
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<td></td>
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<td>• Partnership directory covering key partners</td>
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</table>

**We are here**

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**Phase 3 Objectives**

- Develop 6-7 high potential solutions

**Phase 3 Key activities**

- Stakeholder and institutional mapping
- Desk research to identify innovations in institutions, hardware, software, financing and regulation
- Expert interviews
- Field research for case studies, if needed
- Brainstorming to develop a long-list of solutions
- Collaborative working session to rate solutions and identify shortlist
- Solutions report covering longlist and shortlist of solutions
- Solutions report covering longlist and shortlist of solutions
- Final national strategy and city blueprint
- Partnership directory covering key partners
In Phase 3, we have developed, evaluated, and prioritised high impact, actionable solutions (1/2)

**Step 1: Long-list of solutions**
We generated a long-list of 100+ potential solutions to address the issues identified in phase 1 of the study, leveraging the following methods:

- Internal brainstorming
- Expert interviews
- Best practices (from other geographies and industries)
- Multi-stakeholder solutioning workshop (held on 20 Nov)

**Step 2: Bucketing of solutions into opportunity areas**
We clubbed the solutions into 26 opportunity areas across the sanitation worker livelihood pathway (entry, on-the-job, progression) and cross-cutting enablers.

We have identified 26 thematic interventions across the sanitation worker livelihood pathway and cross-cutting enablers:

- **Entry**
  - Sanitation Worker Acknowledgment and Recognition
  - Effective Contract Design
  - Temporary Contract through Digital Platforms

- **On-the-job**
  - Safety
  - Inclusive Change Programmes
  - Recognition for Safety Outcomes
  - Sanitation Worker Sanitation
  - Symptoms Reduction
  - Sanitation Worker Unemployment
  - Designing Right Insurance for Compensations
  - Micro-lending
  - Issuer Resolution Mechanism

- **Progression**
  - Systems Improvement
  - Training/Awareness
  - Monitoring
  - Raising Visibility
  - Hardware Design
  - Smart Sanitation Systems
  - Incentive Contracting for Equipment

- **Cross-cutting**
  - Sanitation Worker HR Management
  - Safe Sanitation Public Awareness Campaign
  - Legal Framework

These solutions have been explained in the subsequent slides.
In Phase 3, we have developed, evaluated, and prioritised high impact, actionable solutions (2/2)

**Step 3: Evaluation of opportunity areas**

We evaluated the 26 opportunity areas based on their relative impact and feasibility*

- **Impact**
  - High
  - Low

- **Feasibility**
  - High
  - Low

*Framework described in detail later in the deck

**Step 4: Detailing of prioritized opportunity areas**

We prioritized 16 opportunity areas. For each, we have given their description, number of workers impacted, similar initiatives, success enablers, and implementation timeframe

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**[On-the-job] Sanitation Worker Sandbox**

Will lead to contextually relevant innovations.

<table>
<thead>
<tr>
<th>WORKERS IMPACTED (100%)</th>
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</thead>
<tbody>
<tr>
<td>1. Types of work</td>
</tr>
<tr>
<td>2. Gender</td>
</tr>
<tr>
<td>3. Employment nature</td>
</tr>
<tr>
<td>4. Personas</td>
</tr>
</tbody>
</table>

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**SUCCESS ELEMENTS**

- Problem-solving: With diverse skills, workers can design and test sanitation solutions in real-world settings.
- Innovation: Workers have the opportunity to develop and test new ideas in a controlled environment.
- Collaboration: Workers work in teams, fostering collaboration and innovation.

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**Level of ownership**

- City
- State
- National

**Timeframe for implementation**

- <5 years
- 1-3 years
- 3-5 years

**Funding required**

- Low
- Medium
- High

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*Framework described in detail later in the deck

**Step 2 onwards is included in this deck**
Agenda

Where we are on the project

Long-list of opportunity areas

Evaluation and prioritization

Prioritized opportunity areas

Annex
We have identified 26 opportunity areas across the sanitation worker livelihood pathway and cross-cutting enablers

Entry

1. Sanitation Worker Acknowledgment and Registry
2. Effective Contract Design
3. Temporary Contracts through Digital Platforms

On-the-job

Safety

4. Behaviour Change Program for Safety
5. Recognition for Safety Outcomes
6. Sanitation Worker Sandbox

Symptoms Redressal

7. She-safe
8. Designing Right Incentives for Contractors
9. Sanitation Worker Unionisation
10. Issue Resolution Mechanisms

Systems Improvement

11. Tweaking AMRUT
12. Household-level Monitoring
13. Reimagining Sanitation Hardware Design
14. Smart Sanitation System
15. Favourable Contracting for Equipment

Progression

16. Designing On-the-job Progression Pathways
17. Employment Connect
18. Enabling Entrepreneurship
20. Alternative Job Awareness and Counselling
21. Sanitation Worker Relationship Management

Cross-cutting enablers

22. Improving Access to SC Benefits and Schemes
23. Safe Sanitation Public Awareness Campaign
24. Regulatory Revisions
25. Institutional Strengthening
26. More and Better Budgeting

These solutions have been explained on the subsequent slides

Note: Solutions do not include interventions such as education, mental health counselling, access to healthcare (unless directly related to the job) to avoid duplication of efforts since these schemes already exist.
### Potential opportunity areas

<table>
<thead>
<tr>
<th>#</th>
<th>Opportunity area</th>
<th>Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sanitation Worker Acknowledgement and Registry</td>
<td><em>One-time activities</em>&lt;br&gt;1. Well-funded comprehensive third party survey or a census across India to measure the problem in different states, cities, and districts&lt;br&gt;2. Single-window for state and city governments to declare number of sanitation workers without any fear of repercussions&lt;br&gt;<em>Continuous activities</em>&lt;br&gt;1. Aadhar-linked ID for sanitation workers&lt;br&gt;2. National database of sanitation workers with demographic and contact information, type of work, employer details, etc.&lt;br&gt;3. SMS alerts to workers at time of registration, payment of salary, reminders about training program, etc.</td>
</tr>
<tr>
<td>2</td>
<td>Effective Contract Design</td>
<td>1. Worker friendly contracts for all workers. Provisions to include:&lt;br&gt;   - Fair wages&lt;br&gt;   - Escalation clause&lt;br&gt;   - P.F.&lt;br&gt;   - Mandatory sick leaves, health check-ups and allowance for medicines&lt;br&gt;   - Health, accident and life insurance&lt;br&gt;   - Safety gear &amp; equipment (info and use)&lt;br&gt;   - Worker rights&lt;br&gt;   - Issue resolution and escalation mechanisms&lt;br&gt;2. Contracts designed to optimise for user experience (regional language, visuals, etc.)</td>
</tr>
<tr>
<td>3</td>
<td>Temporary Contracts through Digital Platforms</td>
<td>1. Independent sanitation workers and private operators given work through a platform which immediately enforces a temp contract between the employer (household) and the worker/ contractor</td>
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</table>
### [On-the-job] Potential opportunity areas

#### Safety

<table>
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<tbody>
<tr>
<td>4</td>
<td>Behaviour Change Program for Safety</td>
<td><strong>Building a safety culture</strong>&lt;br&gt;1. Townhall and demo days between ULBs and sanitation workers to showcase proper use and secure buy-in on gear and equipment&lt;br&gt;2. Formal training program for new workers with simulation-based training for risky jobs&lt;br&gt;3. Master trainers (potentially informal leaders from groups) to train workers on safety and use of gear&lt;br&gt;4. Safety orientation for supervisors and govt. officials&lt;br&gt;<strong>Sustaining a safety culture</strong>&lt;br&gt;1. Video-based refresher trainings, SMS alerts for using gear&lt;br&gt;2. Worksite visuals for reinforcement&lt;br&gt;3. Role models who use safety gear and equipment&lt;br&gt;4. Incentives for workers who use gear regularly and influence others to use gear&lt;br&gt;5. Family counselling to make families aware of health risks and importance of using gear</td>
</tr>
<tr>
<td>5</td>
<td>Recognition for Safety Outcomes</td>
<td>1. In addition to sanitation infrastructure and OD status, assess cities on sanitation worker safety and cleaning process parameters; criteria in Swachh Sarvekhshan survey&lt;br&gt;2. Recognize states and organisations doing innovative and impactful work in the space (&quot;create pull for safety&quot;)&lt;br&gt;3. Document and disseminate best practices amongst states and ULBs&lt;br&gt;4. Appraise supervisors based on compliance with norms and worker satisfaction</td>
</tr>
<tr>
<td>6</td>
<td>Sanitation Worker Sandbox</td>
<td>Platform for conceptualizing, testing, and commercializing innovations for sanitation hardware design, cleaning equipment, safety gear, monitoring equipment (sensors, GPS, etc.) and personal health devices</td>
</tr>
</tbody>
</table>
### [On-the-job] Potential opportunity areas

#### Symptoms redressal

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>7</td>
<td>She-safe</td>
<td><strong>Tech and infra initiatives</strong>&lt;br&gt;1. Panic buttons and whistles for women to raise alarms&lt;br&gt;2. Anonymous helpline for women to raise complaints with fast-track redressal&lt;br&gt;3. Information and access to washroom facilities&lt;br&gt;<strong>Trainings</strong>&lt;br&gt;1. Self-defence classes for women workers&lt;br&gt;2. Gender sensitisation trainings for male supervisors&lt;br&gt;<strong>Processes</strong>&lt;br&gt;1. Work schedules that are conducive for women&lt;br&gt;2. Appointment of female supervisors from within the worker group&lt;br&gt;3. Work-site safety audits and modifications&lt;br&gt;4. Half-yearly anonymous surveys by third parties to get feedback on workplace safety</td>
</tr>
<tr>
<td>8</td>
<td>Designing Right Incentives for Contractors</td>
<td>1. Contracts awarded to those contractors who provide on-the-job progression opportunities for workers and commit to not hiring for supervisory positions from outside&lt;br&gt;2. Contracts to be renewed basis workers’ feedback and health status of workers&lt;br&gt;3. Performance-based pay: extra amount paid per healthy worker</td>
</tr>
<tr>
<td>9</td>
<td>Sanitation Worker Unionisation</td>
<td>1. Organisation of workers into a union by contractors&lt;br&gt;2. Unionisation of workers through collectives; hiring through SHGs rather than labour suppliers&lt;br&gt;3. CSOs to bring together fragmented workers (such as school toilet cleaners, community toilet cleaners) and bargain on their behalf with employers&lt;br&gt;4. National platform for unions and workers, publicized through pamphlets, SMS, radio, etc.&lt;br&gt;5. Special bench for hearing worker union disputes</td>
</tr>
<tr>
<td>10</td>
<td>Issue Resolution Mechanisms</td>
<td>1. Anonymised helpline for workers to report on contraventions – e.g., missing gear, lack of healthcare assistance, lack of equipment&lt;br&gt;2. CSO-led initiative where CSOs call workers on a periodic basis to check on them&lt;br&gt;3. Traffic police to issue fines to contractors based on worker complaints</td>
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### Potential opportunity areas

**Systems improvement**

<table>
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<tbody>
<tr>
<td>11</td>
<td>Tweaking AMRUT</td>
<td>1. Change in AMRUT guidelines and planning documents to allow for sanitation systems and sewer systems that are a) attuned to Indian realities and b) reduce risk to sanitation workers</td>
</tr>
</tbody>
</table>
| 12 | Household-level Monitoring                | 1. Stringent waste disposal rules and penalties that reduce harmful waste disposal behaviour by individuals  
2. Low-cost devices to monitor if households and institutions are putting waste in manholes |
| 13 | Reimagining Sanitation Hardware Design    | 1. Upstream hardware innovation that breaks down waste into less risky components  
2. Installation of inspection or diaphragm chambers at household and institution connections to the sewer network  
3. Improvement of sewer and septic tank specifications (materials, dimensions, gradients, etc.) to reduce blockage  
4. Innovation in sewer network design (such as connecting manholes to households for accountability) |
| 14 | Smart Sanitation System                  | **Identification and resolution**  
• Mobile app for citizens and staff to log complaints about blockages in sewer systems  
• Use of sensors, laser, infra-red or U.V. rays in sewer networks to detect blockages  
• Tagging of septic tanks to monitor frequency of de-sludging  
• GPS-fitted vehicles, trucks fitted with CCTV cameras for real-time monitoring of cleaning  
**Tracking**  
• Control room at city-level to view the entire sewer network  
• Incident reporting system where all cleaning jobs are assigned Job IDs; resolution status, next steps recorded  
• Strong analytics backend to identify hotspots in a city (i.e. those parts of the sewer network and drain network that give the most problem) for proactive upgradation and maintenance |
| 15 | Favourable Contracting for Equipment      | 1. Standardised contracting template designed at MoHUA level, defining eligibility criteria for equipment providers  
2. Empanelment of operators that meet a specific mechanization and gear standard so that they are not undercut by cheap contractors  
3. Minimum assured rates to incentivize entrepreneurship and innovation in the space  
4. Placement of large purchase orders for equipment and gear to incentivise manufacturers |
### Potential opportunity areas

<table>
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<tr>
<th>#</th>
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</table>
| 16 | Designing On-the-job Progression Pathways             | 1. Clear trajectory, potentially differentiated on the basis of job roles, allocation of worksites, income differences, etc.  
  2. Progression linked to adherence to safety norms, leadership skills, etc.  
  3. Leadership training to workers with high-potential  
  4. Appointment of supervisors from within the sanitation worker group – responsible for safety, health, overall satisfaction of workers, induction of new workers, etc. |
| 17 | Employment Connect                                   | **Sources of job opportunities**  
  1. Incentives to companies for training and hiring sanitation workers (e.g., through CSR)  
  2. Reservations for jobs in non-WASH sectors (public sector units, manufacturing units, etc.)  
**Interventions to facilitate access and transition**  
  1. Incentive program for intermediaries (e.g., local CSOs) to provide non-WASH work in a family  
  2. Soft skills training by CSOs  
  3. Time-bound monthly stipend for sanitation workers migrating to lower-paying (but safer) jobs  
  4. Recruitment helpline for sanitation workers |
| 18 | Enabling Entrepreneurship                            | **Within sanitation**  
  1. First preference given to sanitation workers to become sanitation entrepreneurs when mechanising a process  
**Outside sanitation-collective employment**  
  1. Collective employment groups (SHGs) backed with capacity building support from CSOs; financing (including small ticket size loans) and subsidies for raw materials, land, etc.; guaranteed purchase agreements by corporates and government  
**Outside sanitation-individual businesses**  
  1. Single-window, fast-track clearance based on SW id for small-ticket sized loans  
  2. Varying loan amounts, especially micro loans  
  3. Priority-sector lending by banks or target-based lending (such as 0.1% of total lending, etc.)  
  4. Broader list of income-generating activities that qualify for rehabilitation loans |
# Potential opportunity areas

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<tr>
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<tr>
<td>19</td>
<td>Breaking the Family Legacy</td>
<td><em>Sources of job opportunities</em>&lt;br&gt;1. Incentives to companies for skilling and hiring children of sanitation workers&lt;br&gt;2. Reservations for jobs in non-WASH sectors (public sector units, manufacturing units, etc.) for children of sanitation workers&lt;br&gt;<em>Interventions to facilitate access and transition</em>&lt;br&gt;1. Incentive program for intermediaries (e.g., local CSOs) to provide non-WASH work in a family&lt;br&gt;2. Soft skills training by CSOs for children of workers&lt;br&gt;3. Recruitment helpline for children of sanitation workers&lt;br&gt;<em>Scholarship program for children of sanitation workers, including for:</em>&lt;br&gt;1. Materials (books, uniforms, stationery, etc.)&lt;br&gt;2. Tuition fee (secondary school, college including overseas colleges)&lt;br&gt;3. Transport</td>
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<tr>
<td>20</td>
<td>Alternative Job Awareness and Counselling</td>
<td>1. Ambient media campaign (posters, billboards, etc.) at worksites publicizing rehabilitation schemes&lt;br&gt;2. &quot;Flavours of job&quot; media campaign that talks about different job types that are easily doable by sanitation workers&lt;br&gt;3. Job camps to familiarize workers with employment opportunities; SMS alerts on jobs; visual pamphlets describing job options&lt;br&gt;4. Showcase of role models who have successfully exited the profession&lt;br&gt;5. Counselling workshops and aptitude testing for young sanitation workers</td>
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<tr>
<td>21</td>
<td>Sanitation Worker Relationship Management</td>
<td>1. Investment in a post-program tracking and relationship management system that tracks sanitation workers and their children who have been part of vocational programs or NSKFDC programs to minimise the chance of regression&lt;br&gt;2. Second and third-wave surveys for rehabilitated workers and children who have been provided skilling</td>
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## [Cross-cutting enablers] Potential opportunity areas

<table>
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<tr>
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<th>Components</th>
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<tbody>
<tr>
<td>22</td>
<td>Improving Access to SC Benefits and Schemes</td>
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<tr>
<td></td>
<td>1. SC certificate camps to provide sanitation workers with certificates within a day</td>
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<td></td>
<td>2. Sanitation worker IDs to suffice for availing SC schemes, if sanitation worker doesn’t have an SC certificate</td>
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<td></td>
<td>3. Information dissemination on various SC related schemes for education, livelihoods, financing, etc.</td>
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<td>23</td>
<td>Safe Sanitation Public Awareness Campaign</td>
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<td></td>
<td>1. Well publicized (national and international), 360-degree campaign that helps build awareness and a common understanding of:</td>
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<td></td>
<td>o Types of sanitation work and working conditions</td>
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<td></td>
<td>o Issues faced by workers (financial, social and health)</td>
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<td>o Interventions required to address the above</td>
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<td>25</td>
<td>Regulatory Revisions</td>
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<td></td>
<td>1. Thorough multi-stakeholder review of the MS Act to identify and plug loopholes</td>
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<td></td>
<td>2. Creation of detailed and context-specific SOPs for all kinds of sanitation work</td>
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<td></td>
<td>3. User-centered design of schemes</td>
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<td>4. Statutory or constitutional status to National Commission of Safai Karamcharis (NCSK)</td>
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<td>5. Fast-track processing of pending court cases</td>
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<td>24</td>
<td>Institutional Strengthening</td>
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<tr>
<td></td>
<td>1. National sanitation worker unit (NCSK++) responsible for:</td>
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<td></td>
<td>o Developing SOPs, guidelines, training programs, model worker contracts</td>
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<td>o Maintaining a national database of workers</td>
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<td>o Initiating awareness campaigns amongst workers and their families</td>
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<td></td>
<td>o Monitoring and enforcement of policies and norms</td>
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<td>o Coordinating with state-level bodies and safety officers in ULBs</td>
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<td>o Ensuring welfare and rehabilitation of workers</td>
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<td>o Robust and transparent reporting on state of unsafe sanitation and status of rehabilitation</td>
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<td>2. Equivalent bodies at the state level</td>
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<td></td>
<td>3. Establishment of “Sanitation workers safety cell” in each ULB, which is accountable for workers’ safety</td>
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<tr>
<td>26</td>
<td>More and Better Budgeting</td>
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<tr>
<td></td>
<td>1. Scientific budgeting based on preventive maintenance and safety gear required for all workers</td>
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<td></td>
<td>2. Outcome-based financing: E.g., social impact bonds</td>
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<td>3. Innovative ways of raising funds: CSR, advertising, etc.</td>
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</tbody>
</table>
Agenda

Where we are on the project

Long-list of opportunity areas

Evaluation and prioritization

Prioritized opportunity areas

Annex
We have evaluated the opportunity areas on two axes: impact and feasibility.

<table>
<thead>
<tr>
<th>Prioritisation Criteria</th>
<th>Questions for Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impact</strong></td>
<td></td>
</tr>
<tr>
<td>1 Number of workers impacted</td>
<td>How many urban sanitation workers will the opportunity area impact, factoring in the different types sanitation work, gender, nature of employment (contractual v/s permanent), etc.?</td>
</tr>
<tr>
<td>2 Intensity of impact</td>
<td>To what extent will it impact workers’ lives – safety and health, financial and social?</td>
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<tr>
<td></td>
<td>Is the solution a pre-requisite for other solutions?</td>
</tr>
<tr>
<td><strong>Feasibility</strong></td>
<td></td>
</tr>
<tr>
<td>1 Political buy-in</td>
<td>How easy would it be to secure political and government buy-in?</td>
</tr>
<tr>
<td>2 Economic feasibility</td>
<td>How costly would it be to implement the solution?</td>
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<tr>
<td></td>
<td>Will it require special additional funding, which might be difficult to source?</td>
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<tr>
<td>3 Technical feasibility</td>
<td>Are there existing similar solutions or will they need to be specially designed?</td>
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<tr>
<td>4 User acceptance</td>
<td>How easy is it to set up or change capacities, processes and systems to implement the solution?</td>
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<tr>
<td></td>
<td>What is the likelihood of adoption by users (contractors, workers, etc.) impacted?</td>
</tr>
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</table>

We have prioritized the solutions within their respective buckets, i.e., entry, on-the-job, progression and cross-cutting enablers.
These dimensions have been evaluated on a five point scale

<table>
<thead>
<tr>
<th>Prioritisation Criteria</th>
<th>Evaluation Rationale</th>
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<tbody>
<tr>
<td><strong>Impact</strong></td>
<td></td>
</tr>
<tr>
<td>Number of workers impacted</td>
<td>&lt;10% workers impacted</td>
</tr>
<tr>
<td>Intensity of impact</td>
<td>Negligible impact</td>
</tr>
</tbody>
</table>

| Feasibility             |                      |
| Political buy-in        | No-go with government | Likely to face significant resistance from government | Might be open to the idea, but will need significant convincing | Relatively easy; headwinds in place | Easy to secure buy-in |
| Economic feasibility    | Extremely cost-intensive; no-go on funding | Relatively cost-intensive and will be challenging to source funding | Relatively cost-intensive but funding can be sourced in innovative ways | Low-cost solution OR funds likely to be available for execution | Low-cost solution, with funds likely to be available for execution |
| Technical feasibility   | Very challenging to design and implement | Solutions will have to be designed from scratch; relatively difficult to implement | Solutions might exist but difficult to implement in the given context | Solutions exist that can be tailored to need; easy to implement | Existing solutions in place; easy to implement |
| User acceptance         | Negligible likelihood of user adoption | Significant resistance to adoption | At least one type of user will accept the solution | Majority likely to accept the solution | Willing acceptance by all end users |

The subsequent slides provide detailed evaluation of the 26 solutions
## Solutions evaluation

### [Entry]

<table>
<thead>
<tr>
<th>Solution</th>
<th>Impact</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of workers</td>
<td>Intensity of impact</td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• All workers</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• Will provide workers with a sense of identity and acknowledgment, and is a prerequisite for availing benefits and schemes; not impactful standalone</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>![H]</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• Govt. buy-in should be easy to secure, building on the recent push for elimination of manual scavenging and announcement to carry out a third party survey</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• Challenge to carry out rigorous nationwide survey, given fragmented industry</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• User acceptance likely to be high but workers might be wary of social stigma attached to recognition of their job</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• All workers except latrine cleaners</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• An easy to comprehend contract will ensure workers are aware of their rights and can be used to hold the employers accountable</td>
<td>![H]</td>
<td>![H]</td>
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<tr>
<td>![H]</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• Easier to secure govt. buy-in for contractual workers since responsibility will still remain with the contractor, but government may be hesitant to formalise the system</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• Inclusions in contract (such as fair wages, insurance, etc.) will significantly increase contractors’ economic burden and consequently the govt.’s burden as contracting costs will increase</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• While workers should gladly accept the solution, there is likely to be resistance from contractors due to increased accountability and costs per worker</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>• Only septic tank cleaners (&lt;1%)</td>
<td>![L]</td>
<td>![L]</td>
</tr>
<tr>
<td>• Increases transparency in the system; however, difficult to monitor impact on workers as contract will be between operators and households</td>
<td>![L]</td>
<td>![L]</td>
</tr>
<tr>
<td>• Household usage of app for employing de-sludging operators is likely to be low given infrequent requirement (once in 3-5 years)</td>
<td>![L]</td>
<td>![L]</td>
</tr>
<tr>
<td>• Households not incentivised to report any contraventions given infrequency of engagement and potential liability if accident happens on the worksite</td>
<td>![L]</td>
<td>![L]</td>
</tr>
</tbody>
</table>
# Solutions evaluation

## [On-the-job – Safety]

<table>
<thead>
<tr>
<th>Solution</th>
<th>Impact</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of workers</td>
<td>Intensity of impact</td>
</tr>
<tr>
<td>4. Behaviour Change Program for Safety</td>
<td><img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /></td>
<td><img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /></td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• All workers except latrine cleaners</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Mix of well-designed “push” and “pull” based safety programs will not only build, but also reinforce a formal culture of safety across levels – workers, supervisors, and government officials</td>
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<td></td>
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<tr>
<td>5. Recognition for Safe Sanitation</td>
<td><img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /></td>
<td><img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /></td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• All workers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Recognition alone is not enough to incentivise safe sanitation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Retrospective solution since recognition happens ex-post</td>
<td></td>
</tr>
<tr>
<td>6. SW Sandbox</td>
<td><img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /></td>
<td><img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /> <img src="image1" alt="Gray" /></td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• All workers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Could potentially lead to significant more user-centred and effective safety gear and cleaning equipment, and innovations for sanitation systems, making sanitation work much safer; however, adoption and behaviour change need to accompany this</td>
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</tbody>
</table>
## Solutions evaluation

### [On-the-job – Symptoms redressal]

<table>
<thead>
<tr>
<th>Solution</th>
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<th>Feasibility</th>
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</thead>
<tbody>
<tr>
<td></td>
<td># of workers</td>
<td>Intensity of impact</td>
</tr>
<tr>
<td><strong>7. She-safe</strong></td>
<td></td>
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<tr>
<td>Our assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Women drain cleaners, railways cleaners and CT cleaners (~50% of workers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Will make the worksite safer for women, create an amicable work environment and provide an avenue for redressal</td>
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<tr>
<td>• For govt., women sanitation worker safety may be low on priority; there might even be resistance to acknowledge harassment at work or unsafe work environments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Appointment of women supervisors, gender sensitisation trainings and work-site safety audits will likely be difficult to execute, given fundamental process changes</td>
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<tr>
<td>• Rigid behaviour patterns of supervisors and workers may be difficult to change in the short term and will require sustained efforts</td>
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<tr>
<td><strong>8. SW Unionisation</strong></td>
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<tr>
<td>Our assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All workers except govt. employees (who already have unions) and latrine cleaners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Unionisation will give contract workers greater collective bargaining power and a unified voice to demand their rights without threat of losing their jobs; however, certain pre-requisites need to be in place (worker contracts to hold employers accountable, etc.)</td>
<td></td>
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</tr>
<tr>
<td>• Collectivising fragmented workers (school toilet cleaners, CT cleaners, etc.) may be difficult if strong local CSOs don’t exist</td>
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<tr>
<td>• Private operators and contractors likely to oppose the move since it increases the chances of disruption to work and increase in demands by workers</td>
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<tr>
<td><strong>9. Designing Right Incentives for Contractors</strong></td>
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<tr>
<td>Our assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All workers except govt. employees and latrine cleaners</td>
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<td></td>
</tr>
<tr>
<td>• Will align contractors’ interests with those of workers but will only bring incremental improvement to workers’ lives</td>
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<tr>
<td>• Added administrative burden for the government to monitor contractors</td>
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<tr>
<td>• Difficult to monitor results authentically; contractor might coerce workers to achieve favourable results</td>
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<td></td>
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<tr>
<td>• Contractors unlikely to accept performance-based pay due to potential of reduced pay-outs due to under-performance</td>
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</tbody>
</table>
## Solutions evaluation

**[On-the-job – Symptoms redressal and systems improvement]**

<table>
<thead>
<tr>
<th>Solution</th>
<th>Impact</th>
<th>Feasibility</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of workers</td>
<td>Intensity of impact</td>
<td>Overall</td>
</tr>
<tr>
<td>10. Issue Resolution Mechanisms</td>
<td><img src="image1" alt="Image" /></td>
<td><img src="image2" alt="Image" /></td>
<td>H</td>
</tr>
<tr>
<td>Our assessment</td>
<td><img src="image8" alt="Image" /></td>
<td><img src="image9" alt="Image" /></td>
<td><img src="image10" alt="Image" /></td>
</tr>
<tr>
<td>• All workers</td>
<td><img src="image16" alt="Image" /></td>
<td><img src="image17" alt="Image" /></td>
<td><img src="image18" alt="Image" /></td>
</tr>
<tr>
<td>• Workers will get access to anonymous avenues to voice their issues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Tweaking AMRUT</td>
<td><img src="image24" alt="Image" /></td>
<td><img src="image25" alt="Image" /></td>
<td>L</td>
</tr>
<tr>
<td>Our assessment</td>
<td><img src="image31" alt="Image" /></td>
<td><img src="image32" alt="Image" /></td>
<td><img src="image33" alt="Image" /></td>
</tr>
<tr>
<td>• Sewer and drain cleaners (~50%)</td>
<td><img src="image39" alt="Image" /></td>
<td><img src="image40" alt="Image" /></td>
<td><img src="image41" alt="Image" /></td>
</tr>
<tr>
<td>• Stand-alone tweaking of guidelines will not improve worker conditions unless backed by effective implementation</td>
<td><img src="image47" alt="Image" /></td>
<td><img src="image48" alt="Image" /></td>
<td><img src="image49" alt="Image" /></td>
</tr>
<tr>
<td>12. Household-level Monitoring</td>
<td><img src="image55" alt="Image" /></td>
<td><img src="image56" alt="Image" /></td>
<td>M</td>
</tr>
<tr>
<td>Our assessment</td>
<td><img src="image62" alt="Image" /></td>
<td><img src="image63" alt="Image" /></td>
<td><img src="image64" alt="Image" /></td>
</tr>
<tr>
<td>• Sewer and septic tank cleaners (~10%)</td>
<td><img src="image70" alt="Image" /></td>
<td><img src="image71" alt="Image" /></td>
<td><img src="image72" alt="Image" /></td>
</tr>
<tr>
<td>• By nipping the problem in the bud, blockages will be reduced, reducing the need for manual intervention</td>
<td><img src="image78" alt="Image" /></td>
<td><img src="image79" alt="Image" /></td>
<td><img src="image80" alt="Image" /></td>
</tr>
</tbody>
</table>

**Issue Resolution Mechanisms**

- All workers
- Workers will get access to anonymous avenues to voice their issues
- Setting up an effective helpline that can cater to different types of workers fragmented across the country will be challenging as it will require a strong IT backend, multiple call centres, and trained staff to handle calls in local languages
- Political buy-in, cost, and acceptance by workers not likely to be an issue

**Tweaking AMRUT**

- Sewer and drain cleaners (~50%)
- Stand-alone tweaking of guidelines will not improve worker conditions unless backed by effective implementation
- AMRUT State Action Plans are already in place till 2020; may be difficult to change guidelines in the interim
- Time taken to get buy-in from stakeholders to revise guidelines will likely be another bottleneck

**Household-level Monitoring**

- Sewer and septic tank cleaners (~10%)
- By nipping the problem in the bud, blockages will be reduced, reducing the need for manual intervention
- Added burden on government of monitoring households and institutions
- Difficult to track all households; requires a database of all households and a dynamic monitoring system to ensure traceability, which is currently absent
- Difficult to change behaviours w.r.t. responsible waste disposal
# Solutions evaluation

## [On-the-job – Systems improvement]

<table>
<thead>
<tr>
<th>Solution</th>
<th>Impact</th>
<th>Feasibility</th>
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</thead>
<tbody>
<tr>
<td></td>
<td># of workers</td>
<td>Intensity of impact</td>
</tr>
<tr>
<td>13. Reimagining Sanitation Hardware Design</td>
<td></td>
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<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sewer, drain and septic tank cleaners (~50%)</td>
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<tr>
<td>• Will reduce the need for manual intervention in the riskiest jobs</td>
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<tr>
<td>• Can be implemented through urban infrastructure schemes such as Smart Cities and AMRUT, but will require extensive govt. buy-in, especially for untested solutions</td>
<td></td>
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</tr>
<tr>
<td>• While it is relatively difficult to execute for legacy infrastructure given local infra constraints and potential disruptions, it will be easier for cities and towns in the process of setting up their sanitation systems or cities expanding their sewer and drain networks</td>
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<tr>
<td>14. Smart Sanitation System</td>
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<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sewer, drain and septic tank cleaners (~50%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Potential for high impact since better monitoring of sanitation assets and jobs will increase accountability of users and supervisors, and enable preventive maintenance (and therefore, safer work)</td>
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<tr>
<td>• Likely resistance from ULBs as they will be monitored and tracked closely, and authorities will demand greater accountability</td>
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<tr>
<td>• While solutions are easy to adopt (E.g., apps, GPS), many will need to be designed afresh; new systems and processes will need to be established to enable preventive maintenance and traceability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• No perceived resistance from workers although contractors might resist; viable business opportunity for tech players</td>
<td></td>
<td></td>
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<tr>
<td>15. Favourable Contracting for Equipment</td>
<td></td>
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<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sewer and drain cleaners (~50%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• While quality of cleaning equipment might improve, on-ground usage might still be low</td>
<td></td>
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</tr>
<tr>
<td>• ULB adoption of standard templates may be a challenge, given unique operating contexts, budgets, etc.</td>
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<tr>
<td>• Similar initiatives have suffered from time lags and corrupt practices; empanelment might also lead to complacency among contractors</td>
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<tr>
<td>• Equipment providers that don’t meet stringent eligibility criteria will resist</td>
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</table>
### Solutions evaluation

#### [Progression]

<table>
<thead>
<tr>
<th>Solution</th>
<th>Impact</th>
<th>Feasibility</th>
</tr>
</thead>
</table>
| **Our assessment** |  - Workers who want to continue in the current job  
  - Formal progression opportunities will inculcate a sense of aspiration among workers and motivate them  |  - Difficult to implement as most sanitation work is standardised, with limited scope of differentiation among job roles (e.g., worker – supervisor – driver)  
  - Will lead to significant economic costs for the government and contractors as incremental pay scales will need to be introduced linked to job progression, while ensuring a fair baseline wage for all |

| **Our assessment** |  - All types of workers, typically younger (say <35 years)  
  - Training linked with assured or high likelihood of placement will ensure successful rehabilitation  |  - Govt. buy-in might be a challenge as devising such programs for sanitation workers might put pressure on them to do so for other risky jobs as well  
  - Effective cost per rehabilitated worker could be quite high as workers tend to drop-out and conversion rates are low  
  - Identifying jobs that workers are likely to take up and are suited for may be difficult since those jobs might not match or better SW pay scales, might have longer or inflexible work hours or might need them to relocate |

| **Our assessment** |  - Workers who are less risk-averse and want to exit current job  
  - Workers can be successful entrepreneurs with the right capacity building support and guaranteed purchase orders; these models have proven to be successful  |  - Entrepreneurship schemes already in place for SWs – need to be designed better  
  - Guaranteed purchase orders or assured revenue ensures economic viability  
  - Workers don’t have exposure to entrepreneurship; will require significant hand-holding  
  - For customer-facing business models, there is a high probability of workers being exposed to caste-based discrimination, with customers refusing to purchase from these workers |
---

## Solutions evaluation

**[Progression]**

<table>
<thead>
<tr>
<th>Solution</th>
<th>Impact</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of workers</td>
<td>Intensity of impact</td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Children of all workers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• By providing better opportunities to</td>
<td></td>
<td></td>
</tr>
<tr>
<td>children of sanitation workers, the systemic</td>
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<td></td>
</tr>
<tr>
<td>issue of the work being carried on across</td>
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<td></td>
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<tr>
<td>generations can be reduced; many workers</td>
<td></td>
<td></td>
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<tr>
<td>expressed this issue as a top priority</td>
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<tr>
<td>• Education scholarships already in place for</td>
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<tr>
<td>children of workers – but not very effective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>so far</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Difficult to track whether children are</td>
<td></td>
<td></td>
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<tr>
<td>truly benefiting from the scheme</td>
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<tr>
<td>• Some children already have collegiate-level</td>
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<td></td>
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<tr>
<td>education but find it challenging to secure</td>
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<td></td>
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<tr>
<td>placements that meet their expectations</td>
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<tr>
<td>20. Alternative Job Awareness and Counselling</td>
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<td></td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All types of workers, typically younger (say</td>
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<td></td>
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<tr>
<td>&lt;35 years)</td>
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<td></td>
</tr>
<tr>
<td>• Awareness and inspiration unlikely to spur</td>
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<tr>
<td>change “at scale”, unless backed by skilling</td>
<td></td>
<td></td>
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<tr>
<td>and placements</td>
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<td></td>
</tr>
<tr>
<td>• Low-cost solutions to spread awareness;</td>
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<tr>
<td>many CSOs have led awareness drives earlier</td>
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<tr>
<td>which have been able to motivate workers to</td>
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<tr>
<td>exit their sanitation jobs</td>
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<tr>
<td>• Relatively easy to execute given limited</td>
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<tr>
<td>govt. support is required, no changes to</td>
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<tr>
<td>existing systems and processes; however will</td>
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<tr>
<td>need support of multiple CSOs to execute a</td>
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<tr>
<td>nation-wide initiative</td>
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<td>21. Sanitation Worker Relationship</td>
<td>H</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td></td>
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</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• All workers who exit the profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Relapse into old profession can be</td>
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<td></td>
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<tr>
<td>minimised through tracking and support</td>
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</tr>
<tr>
<td>• Will provide useful data for refining</td>
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<tr>
<td>schemes in the future</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Will require additional government capacity</td>
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<tr>
<td>to track and support ex-workers; perhaps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>low on priority</td>
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<td></td>
</tr>
<tr>
<td>• Difficult to track workers given their</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fragmentation, the informal nature of jobs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>they’re likely to pursue, lack of IDs, lack</td>
<td></td>
<td></td>
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<tr>
<td>of monitoring bandwidth, etc.</td>
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</tbody>
</table>

---

[Image]
## Solutions evaluation

**[Cross-cutting enablers]**

<table>
<thead>
<tr>
<th>Solution</th>
<th>Impact</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>22. Improving Access to SC Benefits and Schemes</strong></td>
<td>![H]</td>
<td>![M]</td>
</tr>
<tr>
<td># of workers</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>Intensity of impact</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>Overall</td>
<td>![H]</td>
<td>![ ]</td>
</tr>
<tr>
<td>Political buy-in</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>Economic feasibility</td>
<td>![ ]</td>
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<tr>
<td>Technical feasibility</td>
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<tr>
<td>User acceptance</td>
<td>![ ]</td>
<td>![ ]</td>
</tr>
<tr>
<td>Overall</td>
<td>![M]</td>
<td>![ ]</td>
</tr>
</tbody>
</table>

### Our assessment
- All workers
- Will help workers avail social schemes and benefits, leading to improved social welfare and integration
- Government buy-in is highly influenced by vote banks and these workers are often at the lowest-level of their caste group and ignored even in the SC debate
- Can be implemented with worker ID but access to schemes might be hindered by procedural delays and corrupt practices

| 23. Safe Sanitation Public Awareness Campaign | ![H] | ![H] |
| All workers | ![ ] | ![ ] |
| Media will be instrumental in creating awareness amongst the public and relevant stakeholders, national and international, and putting pressure on govt. agencies to take action | ![ ] | ![ ] |
| Govt. might be hesitant to support due to increased focus on their efforts and progress regarding this issue | ![ ] | ![ ] |
| Relatively easy to execute given limited govt. support required, no changes to existing systems and processes; however will need to build a common understanding of issues among journalists and secure media houses' sustained commitment to this issue | ![ ] | ![ ] |

### Our assessment
- All workers
- Media will be instrumental in creating awareness amongst the public and relevant stakeholders, national and international, and putting pressure on govt. agencies to take action
- Govt. might be hesitant to support due to increased focus on their efforts and progress regarding this issue
- Relatively easy to execute given limited govt. support required, no changes to existing systems and processes; however will need to build a common understanding of issues among journalists and secure media houses' sustained commitment to this issue

| 24. Regulatory Revisions | ![H] | ![M] |
| All workers | ![ ] | ![ ] |
| Airtight legal conditions will ensure unsafe sanitation work is well understood, and guidelines are put in place, potentially leading to a reduction in unsafe sanitation; however, legal amendments are not sufficient and need strict enforcement | ![ ] | ![ ] |
| Latest MS Act released in 2013; government might be reluctant to revise within 4-5 years as it might signal inefficacy of the Act | ![ ] | ![ ] |
| Legal amendments are typically time-taking, needs buy-in from multiple diverse stakeholders, etc. | ![ ] | ![ ] |
| Private operators and contractors will likely resist stricter laws than can increase their potential liability | ![ ] | ![ ] |
## Solutions evaluation

**[Cross-cutting enablers]**

<table>
<thead>
<tr>
<th>Solution</th>
<th>Impact</th>
<th>Feasibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong># of workers</strong></td>
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</tr>
<tr>
<td><strong>Intensity of impact</strong></td>
<td></td>
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<tr>
<td><strong>Overall</strong></td>
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<tr>
<td><strong>Political buy-in</strong></td>
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<td><strong>Economic feasibility</strong></td>
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<td><strong>Technical feasibility</strong></td>
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<td><strong>User acceptance</strong></td>
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<tr>
<td><strong>Overall</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>25. Institutional Strengthening</strong></td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>All workers</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>Empowered body at all levels (Centre, State, and ULB) will act as a guardian for worker safety and livelihoods, immune to conflicts of interest or perverse incentives</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>Relevant bodies already exist at the Central (NCSK) and State level (SCSK) – these will need to be made functional and empowered; however, increasing power of these bodies will be a time consuming process given required legal amendments</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td>New capacity will need to be created at the ULB level (“safety cell”) but will be at reasonable cost</td>
<td>![H]</td>
<td>![H]</td>
</tr>
<tr>
<td><strong>26. More and Better Budgeting</strong></td>
<td>![H]</td>
<td>![M]</td>
</tr>
<tr>
<td><strong>Our assessment</strong></td>
<td>![H]</td>
<td>![M]</td>
</tr>
<tr>
<td>All workers</td>
<td>![H]</td>
<td>![M]</td>
</tr>
<tr>
<td>Increased budgeting will ensure workers have access to gear and equipment, and schemes</td>
<td>![H]</td>
<td>![M]</td>
</tr>
<tr>
<td>Will require change in mindset and processes for budgeting to allow for preventive maintenance of systems</td>
<td>![H]</td>
<td>![M]</td>
</tr>
<tr>
<td>Increased budgets may not be feasible for amounts that have already been sanctioned to ULBs; will be difficult to justify significant increases</td>
<td>![H]</td>
<td>![M]</td>
</tr>
<tr>
<td>New innovative financing mechanisms will need to be tested and may not be feasible in all contexts</td>
<td>![H]</td>
<td>![M]</td>
</tr>
</tbody>
</table>
Basis our impact-feasibility assessment, 16 opportunity areas emerge as most promising

<table>
<thead>
<tr>
<th>High Impact</th>
<th>Medium Impact</th>
<th>Low Impact</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
</tr>
</tbody>
</table>

- SW Unionisation
- SW Relationship Management
- Temporary Contracts through Digital Platforms
- SW Acknowledgment and Registry
- Effective Contract Design
- She-safe
- Behaviour Change Program for Safety
- Issue Resolution Mechanisms
- Smart Sanitation System
- Breaking the Family Legacy
- More and Better Budgeting
- Regulatory Revisions
- Improving Access to SC Benefits and Schemes
- SW Sandbox
- Safe Sanitation Public Awareness Campaign
- Institutional Strengthening
- Designing On-the-job Progression Pathways
- Favourable Contracting for Equipment
- Household-level Monitoring
- Designing Right Incentives for Contractors
- Reimagining Sanitation Hardware Design
- Enabling Entrepreneurship
- Employment Connect
- Tweaking AMRUT
- Recognition for Safety Outcomes
- Alternative Job Awareness and Counselling

Legend: Entry, on-the-job, progression, cross-cutting enablers; Note: SW stands for sanitation workers
Source: Dalberg analysis
Where we are on the project

Long-list of opportunity areas

Evaluation and prioritization

Prioritized opportunity areas

Annex
We have prioritised 16 opportunity areas to improve sanitation workers’ safety and livelihoods.

<table>
<thead>
<tr>
<th>Entry</th>
<th>On-the-job</th>
<th>Progression</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sanitation Worker Acknowledgment and Registry</td>
<td>Safety</td>
</tr>
<tr>
<td>2</td>
<td>Effective Contract Design</td>
<td>4 Behaviour Change Program for Safety</td>
</tr>
<tr>
<td>3</td>
<td>Temporary Contracts through Digital Platforms</td>
<td>5 Recognition for Safety Outcomes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 Sanitation Worker Sandbox</td>
</tr>
<tr>
<td></td>
<td>Safety</td>
<td>Symptoms Redressal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>She-safe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 Designing Right Incentives for Contractors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 Sanitation Worker Unionisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 Issue Resolution Mechanisms</td>
</tr>
<tr>
<td></td>
<td>Systems Improvement</td>
<td>10 Favourable Contracting for Equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 Tweaking AMRUT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 Household-level Monitoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13 Reimagining Sanitation Hardware Design</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14 Smart Sanitation System</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 More and Better Budgeting</td>
</tr>
</tbody>
</table>

Cross-cutting enablers

| 22 | Improving Access to SC Benefits and Schemes |
| 23 | Safe Sanitation Public Awareness Campaign |
| 24 | Regulatory Revisions |
| 25 | Institutional Strengthening |
| 26 | More and Better Budgeting |

These opportunity areas have been detailed on subsequent slides.

Solutions with a gender icon indicate solutions that are especially relevant for female sanitation workers.
Sanitation Worker Acknowledgement and Registry

Will provide a sense of identity and serve as a springboard for other interventions

**Acknowledgement**
- Well-funded comprehensive 3rd party survey or census to identify number of workers in different states, cities, and districts
- Single-window for state and city governments to declare number of sanitation workers without fear of repercussion

**Registry**
- Aadhar-linked ID for sanitation workers
- National database of sanitation workers, containing:
  - Demographic and contact information
  - Type of work
  - Employer details
  - Family information
- SMS alerts to workers:
  - Registration
  - Payment of salary
  - Attendance
  - Training programs
  - Schemes

**WORKERS IMPACTED (100%)**
1. Types of work  
   All
2. Gender  
   Male and Female
3. Employment nature  
   Contractual and Permanent
4. Personas  
   All personas

**SIMILAR INITIATIVES**
- 3rd party survey: In Nov 2017, MoSJE decided to undertake a nationwide survey by a third-party to account for workers cleaning dry latrines, open drains, pits, railway tracks, septic tanks and sewers; survey to be completed in six months
- ID cards: No exact comparable but efforts have been tried with Los Angeles’ waste workers where hiring is done only through unions and unions mandate registration of all workers

**SUCCESS ENABLERS**
- Third party involvement to ensure unbiased, swift data collection
- Empowered host organisation (Sanitation worker unit) that can coordinate across ministries (urban devt, railways, schools)
- Sophisticated IT infrastructure across levels (Centre, State, ULB)

**Level of ownership**
- City
- State
- National

**Timeframe for implementation**
- <1 year
- 1-3 years
- 3-5 years

**Funding required**
- Low <USD 10M
- Medium USD 10-100M
- High >USD 100M

Funding figure is a high level estimate to indicate scale of funding; MoSJE: Ministry of Social Justice and Empowerment; Source:(1): Manual scavenging law to be amended to hike compensation for deaths; Indian Express, 2017 (2)-Cleaning Up Waste” LAANE 2015; Dalberg analysis
Effective Contract Design
Will formalise employer-worker relationship and hold employers accountable

**Worker-friendly contracts for all workers**, provisions include:
- Fair wages
- Escalation clauses
- Provident Fund
- Mandatory sick leaves
- Health, accident and life insurance
- Bi-annual health check-ups with allowance for medicines
- Information on safety protocols, safety gear and equipment
- Worker rights (refusal to work in case of unsafe conditions, access to gear and equipment, timely payment of salaries, etc.)
- Issue resolution or escalation mechanisms

Contract **designed in a way that it is easy to understand for workers**. Possible features could include:
- Use of regional language
- Use of visuals to account for low-education levels of workers
- Condensed version of a more lengthy formal contract

**Workers impacted (~90%)**
1. **Types of work**
   - All types of work except latrine cleaning
2. **Gender**
   - Male and Female
3. **Employment nature**
   - Contractual and Permanent
4. **Personas**
   - All personas

**Similar initiatives**
Zero Waste LA System has **mandatory contracts with fair terms that promote waste workers’ safety and improve quality of life**:
- Worker training and safety gear
- Provisions regarding living wages; compliance with minimum wages; health benefits (insurance & check-ups)
- Worker retention clauses to protect against indiscriminate firing

**Success enablers**
- Investment to create user experience optimised contracts
- Contextualised contracts (minimum wages according to states, insurance schemes, etc.) to be applicable at the ULB level
- “Safety officer” at ULB level to ensure enforcement of provisions
- Sufficient funding to accommodate provisions

<table>
<thead>
<tr>
<th>Level of ownership</th>
<th>Timeframe for implementation</th>
<th>Funding required</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>&lt;1 year</td>
<td>Low &lt;USD 10M</td>
</tr>
<tr>
<td>State</td>
<td>1-3 years</td>
<td>Medium USD 10-100M</td>
</tr>
<tr>
<td>National</td>
<td>3-5 years</td>
<td>High &gt;USD 100M</td>
</tr>
</tbody>
</table>

Funding figure is a high level estimate to indicate scale of funding; Source: (1)-Cleaning Up Waste” LAANE 2015; Dalberg analysis
# [On-the-job] Behaviour Change Program for Safety

*Will build and sustain a formal culture of safety*

## DESCRIPTION

### Building a safety culture

- **Townhall and demo days** held by ULBs for sanitation workers to demonstrate commitment to safety and secure worker buy-in on use of gear and equipment
- **Formal training** program for new workers, including *simulation-based training for risky jobs*
- **Master trainers** (potentially informal leaders from groups) to train workers on safety and use of gear
- Safety orientation for supervisors and govt. officials

### Sustaining a safety culture

- **Video-based refresher trainings**, SMS alerts for using gear
- **Worksite visuals for reinforcement** (signs indicating proper protocol for jobs, implications of not using gear, etc.)
- **Role models** who use safety gear and equipment
- **Incentives for workers** who use gear regularly and influence others to use gear
- **Family counselling** to make families aware of health risks and importance of using gear

## WORKERS IMPACTED (~90%)

<table>
<thead>
<tr>
<th>Types of work</th>
<th>All types of work except latrine cleaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male and Female</td>
</tr>
<tr>
<td>Employment nature</td>
<td>Contractual and Permanent</td>
</tr>
<tr>
<td>Personas</td>
<td>All personas</td>
</tr>
</tbody>
</table>

## LEVEL OF OWNERSHIP

- **City**
- **State**
- **National**

## TIMEFRAME FOR IMPLEMENTATION

- **<1 year**
- **1-3 years**
- **3-5 years**

## FUNDING REQUIRED

- **Low**
  - <USD 10M
- **Medium**
  - USD 10-100M
- **High**
  - >USD100M

Funding figure is a high level estimate to indicate scale of funding; Source: (1): *Learning to drill deeper and more safely, Shell*; (2): Coal India SMP 2014; Dalberg analysis
### [On-the-job] Sanitation Worker Sandbox

**Will lead to contextually relevant innovations**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>Platform for conceptualising, prototyping, and commercialising innovations for sanitation hardware design, cleaning equipment, safety gear, monitoring equipment (sensors, GPS, etc.) and personal health devices</td>
</tr>
</tbody>
</table>

**Solution generation**
- **Innovation prizes and challenges** that lead to the design of relevant solutions, where even governments can ask innovators to develop solutions for specific problems (suction machines for narrow lanes, etc.)

**Solution testing and commercialisation**
- **Start-ups, entrepreneurs, academic institutes and even international manufacturers can test their ideas in real-word settings** and get feedback from workers, supervisors, etc.
- **Pitch competitions or exhibitions** where ULBs can place orders and manufacturers can purchase innovations
- **Innovation fund** to support funding for promising ideas, competitions, and behaviour change programs for adoption of ideas

<table>
<thead>
<tr>
<th>WORKERS IMPACTED (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Types of work</td>
</tr>
<tr>
<td>2. Gender</td>
</tr>
<tr>
<td>3. Employment nature</td>
</tr>
<tr>
<td>4. Personas</td>
</tr>
</tbody>
</table>

**SIMILAR INITIATIVES**¹,²,³
- **Swachh Bharat Hackathon** was organised by the Ministry of Drinking Water and Sanitation to crowdsource solutions for sanitation and hygiene challenges (Sep, 2017)
- **HAL** is developing a **signal system to identify open manholes, geotag them and check for breakages; also developing a sewerage safety suit relevant for Indian context**
- Some innovations are being developed at small scale and can be given an impetus through the sandbox. *E.g.*, **Genrobotics, founded by eight engineers, has designed a robot named Bandicoot for eliminating sewer deaths in Kerala¹**

**SUCCESS ENABLERS**
- Host institution with state-of-the-art tech facilities (*E.g.*, IIT)
- Buy-in from ULBs to test innovations
- Strategy to crowd-in innovators, which are currently limited

<table>
<thead>
<tr>
<th>Level of ownership</th>
<th>Timeframe for implementation</th>
<th>Funding required</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>National</td>
<td>Funding figure is a high level estimate to indicate scale of funding; Source: (1): Swachhathon 1.0 receives massive response from young innovators of the country, 2017; (2): HAL to help Water Board in manhole maintenance, 2017; (3): Kerala start-up has tech solution to sewer deaths, 2017; Dalberg analysis</td>
</tr>
<tr>
<td>&lt;1 year</td>
<td>1-3 years</td>
<td>Low</td>
</tr>
<tr>
<td>3-5 years</td>
<td>High</td>
<td>&gt;USD100M</td>
</tr>
</tbody>
</table>
[On-the-job] She-safe
Will lead to a safer workplace and amicable work environment for women

**DESCRIPTION**

Tech and infra initiatives
- **Panic buttons and whistles** for women to raise alarms
- **Anonymous helpline** for women to raise complaints, coupled with fast-track redressal
- **Information about and access to washroom facilities** for work that doesn’t have a permanent location (E.g., drain cleaning)

Trainings
- **Self-defence classes** for women workers
- **Gender sensitisation trainings** for male supervisors

Processes
- **Work schedules** that are conducive for women (E.g., avoid late nights and early mornings)
- **Appointment of female supervisors** from within the worker group; number can be determined as a ratio to female workers
- **Work-site safety audits** and modifications (such as lighting in dimly lit areas, surveillance cameras, etc.)
- Bi-annual third party surveys to get feedback on workplace safety

**WORKERS IMPACTED (50%¹)**

1. **Types of work**
   - Drain cleaning, railways track cleaning and CTC/PT cleaning

1. **Gender**
   - Female

2. **Employment nature**
   - Contractual and Permanent

3. **Personas**
   - All personas (females)

**SIMILAR INITIATIVES²,³**

- Rohingya refugees (women) in Bangladesh have been given a rape alarm, a small hand-held device which gives off a high-pitched ambulance wail at the press of a button (Nov, 2017)
- Meghmani Finechem, adopted a multipronged approach:
  - Separate bathroom and lockers for women
  - Flexible work policies to avoid women working night shifts
  - Revised occupational health and safety standards for a mixed-gender workplace

**SUCCESS ENABLERS**

- Buy-in from contractors and supervisors who might be reluctant to implement this, as they are mostly male
- Robust monitoring and feedback systems for gauging effectiveness of and enforcing initiatives

**Level of ownership**

- City
- State
- National

**Timeframe for implementation**

- <1 year
- 1-3 years
- 3-5 years

**Funding required**

- Low: <USD 10M
- Medium: USD 10-100M
- High: >USD 100M

Funding figure is a high level estimate to indicate scale of funding; Source: (1): 50% drain cleaners and 20% railways cleaners and CT cleaners have been assumed to be women based on our field research findings; (2): Employing women catalyzes change at a chemical plant in India; IFC; (3): ‘Rape alarm’ for Rohingya women, Daily Star, 2017; Dalberg analysis
### [On-the-job] Issue Resolution Mechanisms

Will ensure speedy redressal of worker grievances

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>WORKERS IMPACTED (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Helpline support system</strong></td>
<td>1. Types of work All</td>
</tr>
<tr>
<td>• <strong>Anonymised helpline</strong> (perhaps hosted under the ULB-level safety officer) for workers to report contraventions, such as:</td>
<td>2. Gender <em>Male and female</em></td>
</tr>
<tr>
<td>o Missing gear</td>
<td>3. Employment nature <em>Contractual and Permanent</em></td>
</tr>
<tr>
<td>o Lack of healthcare assistance</td>
<td>4. Personas <em>All personas</em></td>
</tr>
<tr>
<td>o Lack of cleaning equipment</td>
<td></td>
</tr>
<tr>
<td>o Unsafe work conditions</td>
<td></td>
</tr>
<tr>
<td>o Harassment by supervisors or public (esp. faced by female workers)</td>
<td></td>
</tr>
<tr>
<td>• <strong>MIS</strong> to track number, nature and status of redressal of complaints, action in case complaint not closed within given a time period (specified for different types of complaints)</td>
<td></td>
</tr>
<tr>
<td>• <strong>CSO-led initiative</strong> where local CSOs can call workers periodically and report back on their status</td>
<td></td>
</tr>
<tr>
<td><strong>Fine system</strong></td>
<td></td>
</tr>
<tr>
<td>• <strong>Traffic police to issue fines immediately to contractors based on workers’ complaints</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### Level of ownership

<table>
<thead>
<tr>
<th>City</th>
<th>State</th>
<th>National</th>
</tr>
</thead>
</table>

#### Timeframe for implementation

| <1 year | 1-3 years | 3-5 years |

#### Funding required

| Low <USD 10M | Medium USD 10-100M | High >USD100M |

Funding figure is a high level estimate to indicate scale of funding; Source: (1): CHILDLINE website; Dalberg analysis

### SIMILAR INITIATIVES

1. **CHILDLINE** is India’s first 24 hour, free, emergency phone service for street and railway children in need of aid and assistance—team rushes to child within 60 mins and provide immediate support and long-term rehabilitation; operates in 366 cities and districts

#### SUCCESS ENABLERS

- Awareness of helpline number and recall
- Availability of regional language speaking operators
- Strong back-end system to ensure calls are received and issues resolved; regular training of operators

---

1. Funding figure is a high level estimate to indicate scale of funding; Source: (1): CHILDLINE website; Dalberg analysis
Design of infrastructure can be improved to reduce instances of blockages and need for manual intervention

**Illustrative hardware design improvements for sewer networks:**
- Installation of inspection or diaphragm chambers at household and institution connections to the sewer network to filter out unwanted material
- Connection of manholes directly to households for increased accountability
- Innovation in sewer network design
  - Materials for sewer construction that reduce friction and upstream hardware innovation that breaks down waste, both allowing for easier movement
  - Dimensions and gradients based on expected volume and speed of water to reduce blockage

**Illustrative hardware design improvements for septic tanks:**
- Septic tank improvements to account for inconsistency of sludge due to unwanted waste materials (e.g., kitchen waste, etc.)

**Workers impacted (~50%)**
1. Types of work: Sewer, drain and septic tank
2. Gender: Male and Female
3. Employment nature: Contractual and Permanent
4. Personas: All except complacent part-timer

**Level of ownership**
- City
- State
- National

**Timeframe for implementation**
- <1 year
- 1-3 years
- 3-5 years

**Funding required**
- Low: <USD 10M
- Medium: USD 10-100M
- High: >USD100M

**SUCCESS ENABLERS**
- Rigorous testing in the Indian context (high density urban areas) before “scaling up” interventions
- Building case for households to invest in the infra

**SIMILAR INITIATIVES**
- Malaysia: National research and development centre for sewer network design, materials, etc. Innovations in sewer design is one of the factors that led to a 7% annual reduction in complaints

---

1. Funding figure is a high level estimate to indicate scale of funding; (1): Indah Water Konsortium Reports 2010 and 2016; Dalberg analysis
[On-the-job] Smart Sanitation System
Will reduce the need for manual intervention in sewers, septic tanks and drains

**DESCRIPTION**

Identification of issues and blockages in the sanitation system
- Mobile app for citizens and staff to log complaints about blockages in sewer systems, drain overflow, etc.
- Use of sensors, lasers, infra-red or U.V. rays in sewer networks to detect blockages
- Tagging of septic tanks to monitor frequency of de-sludging

Resolution of issues
- Vehicle tracking via GPS
- Real-time monitoring of sewer cleaning via **CCTVs fitted on vehicles**
- Sewer monitoring equipment and screens fitted to vehicle

Tracking
- "Control room" at city-level to view the entire sewer network
- Robust MIS where all cleaning jobs are assigned "Job IDs"; resolution status and time, comments, and next steps logged in
- Strong analytics backend to identify "hotspots" (i.e. those parts of the sewer and drain networks that give the most problem) for proactive upgradation and maintenance

**WORKERS IMPACTED (~50%)**

1. Types of work
   - **Sewer, drain and septic tank**
2. Gender
   - **Male and Female**
3. Employment nature
   - **Contractual and Permanent**
4. Personas
   - **All except complacent part-timer**

**SIMILAR INITIATIVES**

- HMWSSB has introduced multiple such initiatives
  - Citizens can report overflows and blockages using an app called JAL (Jaldi Action Le)
  - App-based navigation and monitoring of assignments; pictures taken before and after each unblocking
- Malaysia: 1) CCTVs for sewer inspections; 2) data-based monitoring of desludging based on database of septic tanks in households and centralised system for desludging requests; 3) GPS-fitted vehicles

**SUCCESS ENABLERS**

- Adoption by users, who are not necessarily tech savvy
- Strong business case for making these investments

**Level of ownership**

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<th>State</th>
<th>National</th>
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**Timeframe for implementation**

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**Funding required**

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<td>USD 10-100M</td>
<td>&gt;USD100M</td>
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Funding figure is a high level estimate to indicate scale of funding; HMWSSB: Hyderabad Metropolitan Water Supply and Sewerage Board Source: (1): Expert interviews; (2): Indah Water Konsortium Reports 2010 and 2016; Dalberg analysis
**[Progression] Employment Connect**

*Will provide workers with access to lucrative, safer job opportunities*

### Sources of job opportunities
- **Incentives to companies for skilling and hiring** sanitation workers; provisions such as tax rebates or qualification of spend as CSR can be provided as incentives
- **Reservations for jobs** for sanitation workers in non-WASH sectors (public sector units, mid-day meal cooks, Anganwadi helpers, manufacturing units, etc.)

### Interventions to facilitate access and transition
- **Incentive program** for intermediaries (e.g., local CSOs) to provide non-WASH work in a family
- **Soft skills training** by CSOs
- **Time-bound monthly stipend** for sanitation workers migrating to lower-paying (but safer) jobs
- **Recruitment helpline** for sanitation workers for information on:
  - Available employment opportunities or networks which provide employment opportunities
  - Livelihood schemes
  - Processes for application

### Impact on workers (~25%)

#### 1. Types of work
*All*

#### 2. Gender
*Male and Female*

#### 3. Employment nature
*Contractual (permanent unlikely to move out)*

#### 4. Personas
*Caged bird and transient hustler*

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- **Incentives to companies for skilling and hiring** sanitation workers; provisions such as tax rebates or qualification of spend as CSR can be provided as incentives
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  - Livelihood schemes
  - Processes for application

### SUCCESS ENABLERS
- Identifying target segments within sanitation workers who are better placed for jobs
- Identifying local employment opportunities and being able to match them with worker skills and aptitudes
- Building the case for corporates to hire from the pool

### Funding required

<table>
<thead>
<tr>
<th>Level of ownership</th>
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</table>

Funding figure is a high level estimate to indicate scale of funding; Source: (1): Inclusivity in corporate culture – hiring persons with disabilities: How to enable the differently-abled, Financial Express, 2017; Dalberg analysis
Progression] Enabling Entrepreneurship
Will provide workers with the tools and support needed to realise business opportunities

### DESCRIPTION

**Within sanitation**
- First preference given to sanitation workers to become sanitation entrepreneurs when mechanising a process

**Collective employment outside sanitation**
- Collective employment groups (SHGs) supported with:
  - Capacity building and mentorship from CSOs
  - Financing (including small ticket size loans) and subsidies for raw materials, land, etc.
  - Guaranteed purchase agreements by corporates or govt.

**Individual businesses outside sanitation**
- Single-window, fast-track clearance based on SW id for small ticket-sized loans
- Varying loan amounts, especially micro loans
- Priority-sector lending by banks or target-based lending (such as 0.1% of total lending)
- Broader list of income-generating activities that qualify for rehabilitation loans; allow activities that are feasible in local areas such as dairy farming, fisheries, etc.

### WORKERS IMPACTED (<25%)

1. **Types of work**
   - All
2. **Gender**
   - Male and Female
3. **Employment nature**
   - Contractual (permanent unlikely to move out)
4. **Personas**
   - Reluctant inheritor

### SIMILAR INITIATIVES

- HMWSSB provided manual scavengers with the option of owning mini-jetting machines; subsidised loans from SBI
- Usha International provided technical training and sewing machines to former manual scavengers to cut, stitch and design garments; in Ujjain, former manual scavengers collectively produced agarbattis for ITC
- Sulabh International has set-up collective employment groups for liberated manual scavengers

### SUCCESS ENABLERS

- Partnerships with financial institutions and corporates
- Availability of CSOs to facilitate and support businesses
- Potential integration with existing schemes (e.g., NULM)

### Level of ownership
- City
- State
- National

### Timeframe for implementation
- <1 year
- 1-3 years
- 3-5 years

### Funding required
- Low: <USD 10M
- Medium: USD 10-100M
- High: >USD 100M

Funding figure is a high level estimate to indicate scale of funding; HMWSSB: Hyderabad Metropolitan Water Supply and Sewerage Board; Source: (1) Expert interviews; Dalberg analysis
[Progression] Breaking the Family Legacy

Will provide children of workers with lucrative livelihood opportunities

Sources of non-WASH job opportunities

- Incentives to companies for skilling and hiring children of sanitation workers; provisions such as tax rebates or qualification of spend as CSR can be provided as incentives
- Reservations for jobs for sanitation workers in non-WASH sectors (public sector units, mid-day meal cooks, Anganwadi helpers, manufacturing units, etc.)

Interventions to facilitate access and transition

- Soft skills training by CSOs
- Recruitment helpline for children of sanitation workers for information on available opportunities, schemes and processes
- Incentive program for intermediaries (e.g., local CSOs) to provide non-WASH work in a family
- Education scholarship program, including funding for:
  - Tuition fee (secondary school, higher education)
  - Materials (books, uniforms, stationery, etc.)
  - Transport

SUCCESS ENABLERS

- Building the case for corporates to hire from the pool
- Modify existing schemes for children of sanitation workers, to make them more favourable
- Being able to track the children to make sure that they’ve truly broken the legacy

SIMILAR INITIATIVES

- Magic Bus India Foundation has a Childhood to Livelihood program (8-18 years) with a structured curriculum and uses sports and activities to provide soft-skill training.
- All Magic Bus children complete school till Class 12 and 80% of youth in the programme get employment

Level of ownership

- City
- State
- National

Timeframe for implementation

- <1 year
- 1-3 years
- 3-5 years

Funding required

- Low <USD 10M
- Medium USD 10-100M
- High >USD 100M

Funding figure is a high level estimate to indicate scale of funding; (1): Board this ‘bus’ and equip yourself with soft skills, June 2016; From childhood to livelihood: Magic Bus is taking children in a new direction, one child at a time, October 2017; Source: Dalberg analysis
**[Cross-cutting enablers] Improving Access to SC Schemes and Benefits**

*Will lead to improved social welfare and integration in society*

**DESCRIPTION**

- **SC certificate camps** to provide sanitation workers with certificates within a short-period of time such as a day or a week.

- **Sanitation worker IDs to suffice for availing SC schemes**, if the worker does not have an SC certificate.

- **Information dissemination** on various SC related schemes for education, livelihoods, financing, etc.

**WORKERS IMPACTED (100%)**

1. **Types of work**  
   *All*

2. **Gender**  
   *Male and Female*

3. **Employment nature**  
   *Contractual and Permanent*

4. **Personas**  
   *All personas*

**SIMILAR INITIATIVES**

- No direct comparable but Aadhaar is used for availing benefits under schemes such as cooking gas subsidy, scholarships, MNREGA, etc.; similarly, for sanitation workers, their worker ID can be the basis for availing SC benefits and schemes.

**SUCCESS ENABLERS**

- Will need to be managed politically sensitively, as others who don’t have SC certificates might also make such demands.

- Increased capacity to service sanitation workers.

- Efficient process to minimise delays.

**Level of ownership**

- **City**
- **State**
- **National**

**Timeframe for implementation**

- <1 year
- 1-3 years
- 3-5 years

**Funding required**

- **Low**  
  <USD 10M

- **Medium**  
  USD 10-100M

- **High**  
  >USD100M

Funding figure is a high level estimate to indicate scale of funding; Source: Dalberg analysis.
Safe Sanitation Public Awareness Campaign

Will spur government action and mobilise public support for sanitation workers

**DESCRIPTION**

Well publicised (national and international) campaign on an ongoing basis. The campaign could cover, among other things:

- Types of sanitation work and working conditions
- Issues faced by workers (financial, social and health)
- Interventions required to address the above
- Interventions and pilots being implemented
- Recognition of impactful work in the space
- Safety and livelihoods status of workers

360 degree media coverage:

- News (print and online): Informational reporting on govt. initiatives, innovations, worker deaths
- Television: Focused campaigns on the topic, featuring influencers and personalities (film stars, cricketers, etc.)
- Film: Mini-documentaries
- Social media: Amplifying the buzz created by other mediums

**WORKERS IMPACTED (100%)**

1. Types of work: All
2. Gender: Male and Female
3. Employment nature: Contractual and Permanent
4. Personas: All personas

**SIMILAR INITIATIVES**

- NDTV (national media house) has focused on manual scavenging in its Swachh Cleanathon and other segments; brought in celebrities to speak about the issue
- U.S. govt. released a 3-months “Tips From Former Smokers” anti-smoking campaign featuring stark images and emotional pleas from ex-smokers led to 200,000 people quitting smoking (2012)
- Media has played a key role in catalyzing adoption and usage of toilets as part of the SBM

**SUCCESS ENABLERS**

- Sustained commitment from media houses
- Training of journalists to ensure they understand the issue correctly, and are able to cover it smartly

**Level of ownership**

City

State

National

**Timeframe for implementation**

<1 year

1-3 years

3-5 years

**Funding required**

Low: <USD 10M

Medium: USD 10-100M

High: >USD 100M

Funding figure is a high level estimate to indicate scale of funding; Source: (1) CDC: More than 200,000 Americans quit smoking after graphic ad campaign, Washington Post, 2013; Dalberg analysis
### [Cross-cutting enablers] Regulatory Revisions
To plug gaps in the current MS Act and create worker-centered schemes

#### DESCRIPTION
  - Identify and plug loopholes (e.g., *Manual cleaning of sewers illegal except when “absolutely necessary, with officials’ approval”*)
  - Mandate creation of detailed and context-specific SOPs for all kinds of sanitation work
- **Fast-track processing of pending court cases**
- **Statutory status** and enforcement mandate given to NCSK (details on potential role on previous slide)
- **User-centred design of schemes and processes to avail the schemes**
  - Human-centred design (HCD) based playbook for government and CSOs to create user-centred schemes and processes for sanitation workers
  - Prototyping budget for testing and refining schemes

#### WORKERS IMPACTED (100%)

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<th>Personas</th>
</tr>
</thead>
<tbody>
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<td>All</td>
<td>Male and female</td>
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#### SIMILAR INITIATIVES
- UMC created an action plan to conform to the MS Act 2013 for Ahmedabad Municipal Corporation; developed SOPs for faecal sludge management for Ahmedabad
- Administrative Staff College of India (ASCI) with the HMWSSB has specified **SOPs for sewer cleaning in accordance to 2013 Act**
- Chairman of the NCSK has raised the issue of making it a **statutory or constitutional body** (Nov, 2017)

#### SUCCESS ENABLERS
- Developing a common understanding of unsafe sanitation work and workers to make relevant legal amendments and policies
- Benchmarking other emerging markets (with similar contexts) and other industries while devising policy

#### Level of ownership

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</table>

#### Timeframe for implementation

| <1 year | 1-3 years | 3-5 years |

#### Funding required

| Low | Medium | High |
| <USD 10M | USD 10-100M | >USD 100M |

Funding figure is a high level estimate to indicate scale of funding; Source: (1): Expert interviews; (2): National Commission for Safai Karamcharis Suggests NITI Ayog to Bring Some of The Welfare Schemes for Safai Karamcharis and Manual Scavengers Under Its Purview, Business Standard, 2017; Dalberg analysis
[Cross-cutting enablers] Institutional Strengthening

Will serve as an impartial guardian for sanitation workers

**DESCRIPTION**

National Sanitation Worker Unit (NCSK++), responsible for:
- Defining safety standards and benchmarks
- Developing SOPs, guidelines for sanitation work
- Designing training programs
- Designing model worker contracts
- Maintaining a national database of workers
- Initiating awareness campaigns
- Monitoring and enforcing policies and norms
- Grievance redressal and coordinating with NSKFDC for rehabilitation of workers
- Coordinating with state-level bodies and safety officers in ULBs
- Maintaining a robust and transparent monitoring and reporting framework on state of unsafe sanitation

Equivalent bodies at the state level to support the national sanitation worker unit

“Sanitation workers safety cell” in each ULB accountable for workers’ safety

**WORKERS IMPACTED (100%)**

1. Types of work  
   All
2. Gender  
   Male and Female
3. Employment nature  
   Contractual and Permanent
4. Personas  
   All personas

**SUCCESS ENABLERS**

- Fully staffed units at all levels, coupled with enforcement powers
- Robust monitoring framework to hold units accountable

**SIMILAR INITIATIVES**

1. Coal Mining in India: Independent safety cell, Directorate General for Mines Safety, housed in Ministry of Labour to enforce worker safety protocols
2. Chairman of the NCSK has raised the issue of empowering the body by making it a statutory or constitutional body and bestow it with the powers of a civil court so that it can discharge its mandate effectively (Nov, 2017)

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More and Better Budgeting
Will lead to increased funding for safety and lucrative livelihoods of workers

**Allocation planning**
- Scientific budgeting based on machines required for preventive maintenance, and adequate safety gear for every worker
- Scheme allocation based on number of workers

**Financing sources**
- Outcome-based financing such as *social impact bonds*
  - E.g., ULB will only pay investors if number of deaths is reduced by xx% in a year; not only will this lead to safe sanitation work but also accrue government savings for compensation not paid in case of deaths of sewer workers
  - E.g. NCSK pays only if workers do not relapse into sanitation after undergoing skilling program
- Advertising revenue from selling of ad space on machines, safety jackets, CT toilets, etc.
- Earmarking a percentage of *Swachh Bharat cess* for sanitation workers’ training, gear, etc.
- CSR contributions

**WORKERS IMPACTED (100%)**
1. Types of work  All
2. Gender  Male and Female
3. Employment nature  Contractual and Permanent
4. Personas  All personas

**SUCCESS ENABLERS**
- Expertise in financing, especially in international models
- Strong project management units to execute projects; willing private investors; third-party to carry out evaluation

**SIMILAR INITIATIVES**
- Goldman Sachs invested in a Social Impact Bond to help fund a program aimed at reducing the recidivism rate for adolescent offenders at the Rikers Island correctional facility in New York City- the Department of Correction pays only based on reduced re-admission

**Level of ownership**
- City
- State
- National

**Timeframe for implementation**
- <1 year
- 1-3 years
- 3-5 years

**Funding required**
- Low  <USD 10M
- Medium  USD 10-100M
- High  >USD100M

Funding figure is a high level estimate to indicate scale of funding; Source: (1) [Social impact bond: adolescent behavioral learning experience](#); Dalberg analysis
Where we are on the project

Long-list of opportunity areas

Evaluation and prioritization

Prioritized opportunity areas

Annex
We believe there are six personas of sanitation workers basis their motivations, opportunities and ability

**Reluctant inheritor**
Relatively new workers, both women and young men, who are forced into the profession due to the death of the primary income earner who used to be in this profession

**Complacent part-timer**
Workers, both women and men, who face less hazardous environments and are comfortable in the current job, and have no desire to move out

**Caged bird**
Workers (men) who have just entered this job and are keen to move on to jobs beyond sanitation but foresee no opportunities for doing that

**Trapped traditionalist**
Sewer workers and drain cleaners, typically male, who have been working for several decades and expect to continue doing so

**Transient hustler**
Workers who are looking for jobs that provide the best economic pay-out and currently a job in sanitation provides them that

**First among equals**
Permanent sewer workers and drain cleaners who have been doing this job for years, and earn significantly more than other workers

These personas differ in terms of backgrounds, motivations, aspirations, and personalities, and will therefore require customized solutions and pathways.
Reluctant inheritor – forced into the profession due to the death of the primary income earner in the family

“My husband is an alcoholic and is not earning anything. I have been supporting the family for many years now.”

Key identifiers
- Gender: Female/Male
- Age: 25 years and above
- Education: Limited
- Types of work: Railways cleaning, drain cleaning, sewer cleaning
- Employer: Contractor/government

Livelihood pathway
ENTRY
ON-THE JOB
PROGRESSION

Background
- Worker who is doing this job due to primary earner’s demise/immobility

Work environment
- Camaraderie with co-workers; works in large groups, with people from the same community
- Aware of the issues that come with the job but conscious of family responsibilities

Motivations/outlook
- Needs assured income to provide for the family
- Risk-averse

Aspirations
- Not thought about moving to other jobs because values a stable income
- Wants to educate children to higher levels to break out of the sanitation trap
**Complacent part-timer** – content in current work environment and does not want to move out of the current job

### Key identifiers
- **Gender**: Female and male
- **Age**: 20 – 35 years
- **Education**: Limited (up to class 8)
- **Types of work**: School toilet cleaning, CT cleaning
- **Employer**: School authorities, community toilet operators

### Livelihood pathway

<table>
<thead>
<tr>
<th>ENTRY</th>
<th>ON-THE JOB</th>
<th>PROGRESSION</th>
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</thead>
<tbody>
<tr>
<td><strong>Background</strong></td>
<td><strong>Work environment</strong></td>
<td><strong>Motivations/outlook</strong></td>
</tr>
<tr>
<td>Young man/woman, typically doing the job for 5+ years</td>
<td>Works in relatively less hazardous, friendly environments</td>
<td>No compelling reason to change status quo</td>
</tr>
<tr>
<td>Job is his/her primary source of income</td>
<td>Not getting paid much but has a sense of belonging with co-workers/supervisors, has developed a good rapport</td>
<td>Complacent; not ambitious</td>
</tr>
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</table>

### Motivations/outlook
- No compelling reason to change status quo
- Complacent; not ambitious

### Aspirations
- Sees himself/herself continuing with this job for the next few years

---

“I like working here, I feel attached to the children. Even the teachers are very friendly towards me”
**Caged bird**

“I want to do a white-collar job. Few people in my community have moved to other jobs such as that of a railways engineer. I want to do that.”

---

**Caged bird – started sanitation work because of “family legacy”, but is inclined to move out of sanitation**

---

**Key identifiers**

- **Gender:** Male
- **Age:** 18-21 years
- **Education:** Class 8 and above (might be simultaneously pursuing higher education)
- **Types of work:** Sewer, septic tank, PT cleaning
- **Employer:** Private business/Contractor

---

**Livelihood pathway**

**ENTRY**

**Background**

- Young male, recently entered the occupation through informal networks; apprentice to experienced workers

**Work environment**

- Dissatisfied with the current job and understands that it is hazardous – but compelled to supplement his family’s income and has easy access to the job because of relatives/family members working in sanitation

---

**ON-THE JOB**

**Motivations/outlook**

- Wants to be respected in the society; believes a white-collar job will help him achieve that
- Optimistic about his future

**Aspirations**

- Sees himself doing a white collar job (e.g., BPO) in 2-3 years, but unaware of opportunities and pathway to pursue any opportunity
Trapped traditionalist – has been doing the job for many years and living in the false hope of the job becoming permanent

**Key identifiers**
- **Gender:** Female and male
- **Age:** 35 years+
- **Education:** Limited (up to class 8)
- **Types of work:** Sewer cleaning, STP cleaning, railways cleaning and drain cleaning
- **Employer:** Private contractors/operators

**Livelihood pathway**

- **ENTRY**
  - **Background:** Experienced worker, been doing this for 10-15+ years
  - **Entered the profession because either got displaced from agriculture or followed parents’ sanitation jobs**

- **ON-THE JOB**
  - **Work environment:**
    - Works in extremely hazardous environments
    - Benchmark of safety is very low-considering missing work due to fever and body aches (on a monthly basis) to be normal
    - Incurs significant medical expenses
    - Feel helpless as can’t raise issues to anyone

- **PROGRESSION**
  - **Motivations/outlook:**
    - Is not open to other jobs because of the **switching cost** (unlearning the existing job and going to an unknown environment)
    - Lives in false hope that the job will become permanent one day; optimistic that it will happen

- **Aspirations**
  - Wants children to move out of sanitation and is ensuring they at least complete their education

"I do this job daily thinking my job will become permanent one day. I only want a govt. job and/or increase in my income"
Transient hustler – looking for the “next best thing”, sanitation work is just one of the many jobs for him

**Key identifiers**
- **Gender:** Typically male
- **Age:** 21-30 years
- **Education:** Limited (up to class 8)
- **Types of work:** CT cleaning (typically)
- **Employer:** Private operators

**Livelihood pathway**

**Entry**
- **Background**
  - Been doing this job for maximum 2-3 years
  - Came into sanitation looking for the best livelihood option, given limited skills and education
  - Sanitation jobs might be one of the many jobs he is currently pursuing

**On-the-job**
- **Work environment**
  - Works in relatively a less hazardous environment
  - Keeps to himself, does not interact with others

**Progression**
- **Motivations/outlook**
  - Has no particular attachment/sense of belonging to the job
  - Always looking out for the “next best thing”
  - Risk-taking, ready to move out of this job
  - Leverages informal networks to source jobs

**Aspirations**
- Wants to do a job that pays well-indifferent to the type of work

—I was a mechanic earlier, then I went to the railways. Now I clean the CT during the day and at night I hold the lights in a wedding procession. Wherever I can get a decent earning, I’ll go there”
First among equals – sanitation worker on government payroll, whose job is coveted by other workers for its higher and assured income

Key identifiers
- **Gender:** Male and female
- **Age:** 40+ years
- **Education:** Limited (up to class 8)
- **Types of work:** Sewer work, drain cleaning
- **Employer:** Government

Livelihood pathway

**ENTRY**

**Background**
- Been doing this job for several years, perhaps a decade or more
- Permanent govt. employee
- Parents were likely sanitation workers

**ON-THE JOB**

**Work environment**
- Sense of attachment to the workplace, working with supervisors and other workers for many years; part of the worker union
- Heuristics driven mental model of safety
- Earns ~3x of what temporary workers earn and has job security

**PROGRESSION**

**Motivations/outlook**
- Understands the unsafe/undignified aspect of the job but values the higher and assured income

**Aspirations**
- Does not have aspirations to exit the job
- Wants children to break out of the family’s sanitation legacy

“I have been watching my mother do this job since I was a child. That’s how I got into it but my sons are not going to do this job. I am sure of that.”