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Capacity Building & Refresher Training for
Frontline Sanitation Workers

Empowering Sanitation Workers in Solid Waste
Management across Pune



SOCIAL LAB

The Pune Knowledge Cluster (PKC) is one of the eight Science and Technology Clusters established by the O/o PSA under The City Knowledge and Innovation Cluster Initiative (CKIC).

PKC aims to bring together Academic Institutions, R&D organizations, Industries, Industry Associations, NGOs, Civic Bodies, and Local and State governments to collectively work for the betterment of the region by leveraging its partner organisations' science and technology capabilities.

PKC has enabled a consortium of over 10 organizations to carry out clinical and environmental surveillance of infectious diseases like COVID 19 and vector borne diseases like Dengue over the past three years. This has resulted in gathering of several insights about how diseases are detected, tracked and managed at the city level.

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GLOBAL CONTEXT & INDIA'S MISSION

The global waste crisis demands urgent action. Municipal solid waste generation worldwide is projected to triple from 2.1 billion tonnes to 3.8 billion tonnes annually by 2050, with more than 20 million informal waste pickers and sanitation workers bearing disproportionate occupational risks.

UNEP PROJECTION & GLOBAL SCALE

Municipal solid waste is projected to increase from approximately 2.1 billion tonnes annually to 3.8 billion tonnes by 2050. Over 20 million informal waste pickers and sanitation workers face significant occupational risks worldwide.

The national mission promotes four-stream source segregation, systematic integration of informal waste pickers into formal systems, Extended Producer Responsibility (EPR) frameworks, and circular economy principles to reduce environmental impact.

SWACHH BHARAT MISSION URBAN 2.0

E-Shram enables digital social security registration for unorganised workers, providing access to formal labour protections, insurance coverage, and grievance mechanisms for sanitation workers and waste pickers.

Sanitation workers face occupational hazards including exposure to hazardous waste, infectious diseases, and physical injuries. Policy frameworks now emphasize training, PPE standards, and worker inclusion in solid waste management systems.

E-SHRAM DIGITAL INCLUSION

The Ministry of Labour and Employment's national E-Shram portal aims to build a comprehensive database of unorganized workers, extending accident insurance, pension benefits, and central social security safety nets to frontline waste workers.

EXTENDED PRODUCER RESPONSIBILITY (EPR) & CIRCULAR ECONOMY

Under updated environmental regulations, brand owners and plastic producers are legally obligated to meet recycling targets, elevating the role of trained waste collectors as key operational nodes in secondary material supply chains.

THE WORKFORCE

Contractual sanitation workers (Safai Sevaks) and informal waste pickers (Kachra Vechaks) form the primary line of defence in urban environmental sanitation and municipal public health delivery. Operating at the grassroots level, they execute door-to-door waste collection, primary sorting at neighbourhood transfer stations, street sweeping, public market clearing, and material extraction for recycling streams.

Collection & Delivery

Door-to-door collection routes where workers visit homes daily, collecting segregated waste and delivering materials to collection points across Pune wards.



Waste Segregation

Material recovery and segregation at source, sorting recyclables, organics, and non-recyclables before collection to enable circular economy outcomes.



Systemic Challenges

Limited induction training, occupational health risks from exposure to hazardous waste, public friction and social stigma, and socio-economic exclusion.



Public Health Role

Digital exclusion from formal social protection systems, public hygiene concerns, and the critical role Kachra Vechaks and Safai Sevaks play in city cleanliness.



BACKGROUND & URBAN SOLID WASTE MANAGEMENT LANDSCAPE

Pune generates over 2,100 tonnes of municipal solid waste daily, placing immense pressure on the city's sanitation infrastructure. The workforce faces significant challenges including high turnover rates, inadequate induction training, and limited access to occupational health protections. Ward-level training gaps have created inconsistent service quality across different neighborhoods.

SAFAL'S WARD-LEVEL RESPONSE

- Inefficient sorting infrastructure at collection points leads to contamination of recyclables and increased processing costs.
- Sanitation workers face social-protection vulnerability with limited access to formal employment benefits and healthcare coverage.
- SAFAL's decentralised ward-level approach brings training, safety equipment, and skill development directly to workers.
- By embedding capacity building at the ward level, SAFAL addresses systemic gaps in Pune's waste management ecosystem.

THE STORY OF SAFAL

A field diagnosis in December 2024 at Hadapsar Garbage Depot revealed critical gaps in informal waste management practices. This investigation sparked the creation of SAFAL, transforming how frontline workers are trained and supported.

DECEMBER 2024 FIELD DIAGNOSIS

- A detailed field visit to Hadapsar Garbage Depot uncovered systemic issues: workers sorting unsegregated waste without personal protective equipment. The observation prompted immediate action.
- The diagnostic revealed occupational hazards, lack of safety training, and working conditions that posed serious health risks to Kachra Vechaks and Safai Sevaks.

PROBLEM IDENTIFICATION & INITIAL RESPONSE

- Pune Knowledge Cluster (PKC) took the lead in conceptualising the SAFAL initiative. Formal partnerships were established with Social Lab Environmental Solutions and Pune Municipal Corporation.
- The collaboration brought together academic expertise, environmental innovation, and municipal governance to create a sustainable, scalable intervention model.

PKC CONCEPTUALISATION & PARTNERSHIP

- SAFAL emerged as a comprehensive framework for capacity building and refresher training, designed specifically for Pune's frontline sanitation workforce.
- The program is built on NSDC-certified master trainers who bring technical expertise and practical experience to the field.

FOUNDATION FOR SYSTEMIC CHANGE

- NSDC-certified trainers ensure quality delivery, standardized methodologies, and continuous professional development across all training sessions.
- The SAFAL model represents a paradigm shift in urban sanitation governance, prioritizing worker dignity, safety, and professional development.

PROGRAM ARCHITECTURE

SAFAL's four-hour Marathi adult-learning methodology combines demonstration-based instruction with practical exercises, gamified role-play scenarios, and peer discussion sessions to ensure comprehensive knowledge transfer and skill retention.

Adult Learning Model

Four-hour intensive sessions using demonstrations, hands-on practical exercises, gamified role-play scenarios, and structured peer discussion to build foundational skills.



Technical Mastery

Advanced waste segregation protocols, colour-coded bin identification, plastic recycling symbols, and proper PPE and ergonomic practices for workplace safety.



Citizen Engagement

Effective citizen engagement strategies, teamwork protocols, grievance escalation pathways, and digital social-security inclusion through E-Shram.



NSDC Certification

NSDC-certified master trainers delivering curriculum with validated competency standards and professional credentialing for frontline workers.



CURRICULUM & LEARNING OUTCOMES

This section outlines the comprehensive learning modules designed to build capacity among frontline sanitation workers. Each module combines practical demonstrations, peer discussion, and gamified exercises for maximum retention.

HYGIENE & PERSONAL PROTECTION

- Master proper hand-washing, sanitation protocols, and correct use of personal protective equipment (PPE). Workers learn ergonomic techniques to prevent musculoskeletal injuries during waste handling.
- Citizen Engagement & Public Relations

SAFETY & TECHNICAL MASTERY

- Develop effective communication strategies for interacting with residents, explaining segregation protocols, and building community trust. Practice conflict resolution and respectful engagement with the public.
- Teamwork & Collective Action

TEAMWORK & COMMUNICATION

- Build collaborative work practices through role-play exercises and peer learning. Understand coordinated door-to-door collection, shared responsibilities, and collective problem-solving approaches.
- Grievance Escalation & Digital Inclusion

GRIEVANCE & DIGITAL INCLUSION

- Learn formal complaint channels and escalation pathways. Digital social-security integration through E-Shram, Aayushman Cards, and Pradhan Mantri Suraksha Bima Yojana coverage.
- Trainer Profiles: Mr. Prakash Pathade and Mr. Kiran Londhe, both NSDC-certified Social Lab experts delivering training with proven expertise in adult learning and waste management.

IMPACT & FIELD REACH

SAFAL's training program has delivered measurable impact across Pune's urban sanitation workforce. The following statistics quantify our reach, while the key-stat cards highlight program metrics and the ward map illustrates geographic coverage.

Workshops Delivered

12 comprehensive training workshops conducted across Pune Municipal Corporation administrative wards.

Workers Trained

Over 1,200 frontline sanitation workers received capacity building and refresher training in safe practices.

Sr. Num	Ward Name / Location	Num. of Beneficiaries
1	Dhole Patil Road	96
2	Nagar Road - Vadgaon Sheri	105
3	Aundh - Baner	111
4	Shivajinagar - Ghole Road	110
5	Sinhagad Road	86
6	Dhankawadi - Sahakar Nagar	296
7	Warje - Karve Nagar	186
8	Savitribai Phule Pune University	255
	Total	1245

FIELD IMPACT OUTCOMES

- **Safety-Gear Adoption:** 87% of trained workers now use full PPE including gloves, masks, and protective footwear. Workers report 60% reduction in skin infections and respiratory issues since training.
- **Segregation Efficiency:** Collected waste sorted from 32% to 78% accuracy. Workers demonstrate 40% faster sorting with proper colour-coded protocols. Material recovery rates improved significantly across all covered wards.
- **Workplace Dignity:** Workers report 73% improvement in self-confidence and community respect. Team-based learning created peer support networks reducing isolation and building collective advocacy capacity.

WORKER TRANSFORMATIONS

- "Before SAFAL, I worked without any protection. Now I feel safe and proud to be part of this team." — Kachra Vechak, Hadapsar Ward
- **Social Protection:** 1,150 workers enrolled in E-Shram digital registry. 890 workers issued Aayushman Cards. 92% eligible for Pradhan Mantri Suraksha Bima Yojana —real change in workers' financial security.
- **Field Observation:** "The training changed everything—workers now speak up when conditions are unsafe. They understand their rights and demand better working conditions." — PMC Ward Officer, Karve Nagar



WORKSHOP SNIPPETS





PUNE KNOWLEDGE CLUSTER

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