PATHWAYS TO INCLUSION OF WASTE PICKERS

Exploring Various Models from Indian Cities

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PATHWAYS TO INCLUSION OF WASTE PICKERS

Exploring Various Models from Indian Cities

CONTENTS

INTRODUCTION

This section defines the informal waste workers and classifies the different categories.

It highlights the role of informal waste workers in municipal solid waste management

It explores their significant economic contributions and positive ecological impact.

It also examines the socio-economic conditions and health vulnerabilities faced by informal waste workers.

'Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment. Everyone, without any discrimination, has the right to equal pay for equal work. Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection. Everyone has the right to form and to join trade unions for the protection of his interests.' - **Article 23 of the Universal Declaration of Human Rights**

Rapid urbanisation and population growth have led to a surge in municipal solid waste (MSW) generation in cities across the world, severely impacting the environment and public health and overburdening urban local bodies (ULBs). However, poor waste segregation, low recycling rates, lack of infrastructure, and inefficient policies have hindered effective waste management. Due to inadequate funding and inefficiencies of the formal sector, waste collection and recycling in India and across the Global South are predominantly managed by the **informal waste sector**. Multiple studies have indicated that the informal waste workers contribute significantly more to recycling efforts than formal municipal systems in developing countries. The informal waste sector is an indispensable part of waste management, yet it remains largely invisible to the outside world, receiving little recognition for their effort and impact. The sector overall plays a pivotal role in managing our waste by facilitating the systemic collection, sorting, and recycling of materials. The army of waste pickers serve as key contributors to this resource recovery and greater environmental sustainability. While the informal waste sector in itself comprises different categories of work types, the following definitions will offer a better understanding of the role of this omnipresent, yet often unacknowledged, workforce.

1.1 Definitions

The **International Alliance of Waste Pickers** (**IAWP**) describes *informal waste workers* as individuals who participate individually or collectively in the collection, separation, sorting, and transport of recyclable and reusable materials. They may work in an informal or semi-formal capacity, as own-account workers, or within cooperatives, social enterprises, or solidarity economy settings.[1]

The **International Labour Organization** (**ILO**) defines the *informal sector* in waste management as "individuals or small and micro-enterprises that intervene in waste management without being registered and without being formally charged with providing waste management services".[2]

The **UN-Habitat**, in its 2022 report titled *Leaving No One Behind*, defines *waste pickers* as individuals who collect items and materials from public spaces, open dumpsites, landfills, waste bags, and street bins, subsequently selling recyclables to intermediate or apex traders.[3]

In India the **Solid Waste Management Rules, 2016** define an *informal waste collector* as "individuals, associations, or waste traders involved in sorting, sale, and purchase of recyclable materials." Additionally, the rules define *waste pickers* as individuals or groups informally engaged in the collection and recovery of reusable and recyclable solid waste from various sources, including waste generators, streets, bins, material recovery facilities, processing units, and disposal sites. The rules also mandated that Urban Development Departments of States and Union Territories develop a *State Policy and Solid Waste Management Strategy* in consultation with relevant stakeholders, including waste pickers and SHGs, within one year of the rules' notification.[4]

In South Africa, according to the **South African Department of Environment, Forestry and Fisheries** and the **Department of Science and Innovation**, a *waste picker* is someone who collects reusable and recyclable materials from residential and commercial waste bins, landfill sites, and open spaces to revalue them and generate income.[5]

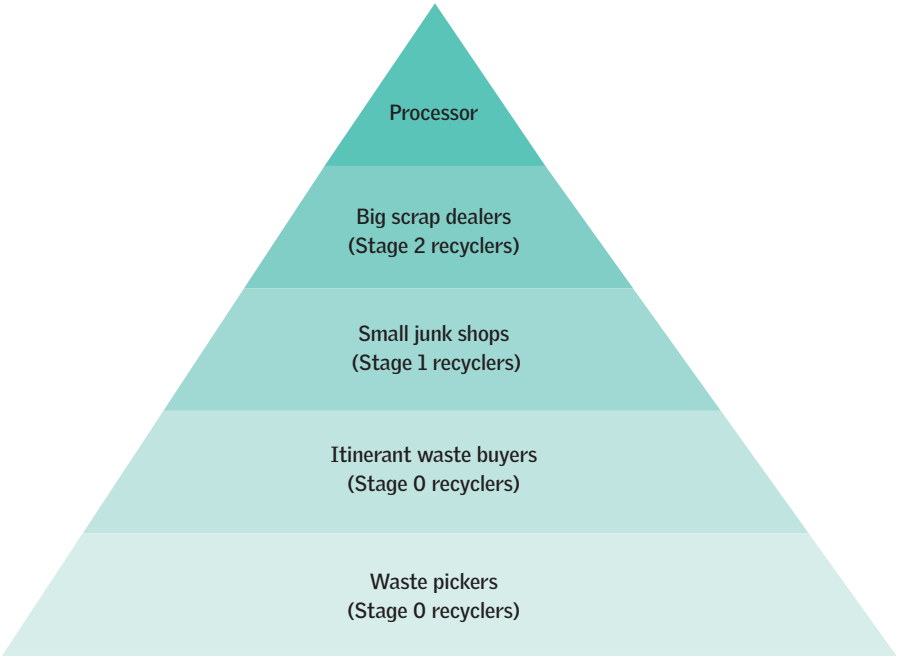
From the above-mentioned definitions, it is widely accepted that informal waste pickers and their networks are responsible for ensuring the collection and proper channelling of recyclable materials. However, despite legal frameworks designed to integrate the informal sector into the waste management value chain, there is limited evidence of effective implementation.

1.2 Categories of informal waste workers

According to **Women in Informal Employment: Globalizing and Organizing** (**WIEGO**), the *informal economy* comprises a diverse range of economic activities, enterprises, and jobs that operate outside regulatory and social protection frameworks.[6]

Informal waste workers, largely composed of the waste pickers, play a crucial role in resource recovery by collecting, sorting, and reselling recyclable materials, often without any form of recognition. Estimates suggest that in India, there are at least three to four million informal waste pickers. In Delhi alone, approximately 500,000 waste workers contribute to waste management and recycling processes.[7]

Figure 1: Pyramid of the Informal waste recycling system



Source: CSE

At the global level, the informal waste management sector is estimated to employ between 12.5 million and 56 million people. Given the world population of around eight billion people, one per cent denotes roughly 80 million people. This infers the startling fact that the sector closely accounts to one percent of the global population.[8]

The informal waste sector consists of various categories of workers, all contributing to the broader informal economy. However, distinctions between these categories are often fluid, with overlapping roles across different waste management activities. To facilitate a clearer understanding of the sector, a hierarchical classification is often established. The pyramid representation above (see *Figure 1*) illustrates the structure of the informal waste sector, where the base comprises the largest workforce, while economic capacity increases toward the top.

This classification provides a lucid and structured understanding of the various contributors to waste management processes:

1) **Waste pickers** (Stage 0 recyclers): These are individuals who collect recyclable materials from streets, landfills, and residential or commercial establishments. They form the largest workforce with minimal input cost.

2) **Itinerant waste buyers** (Stage 0 recyclers): Workers who purchase recyclable materials directly from households or businesses, offering monetary compensation for items like paper, plastics, metals, and other high value materials are called itinerant waste buyers. They are commonly referred to as *raddiwalas* or *pheriwalas* in India.

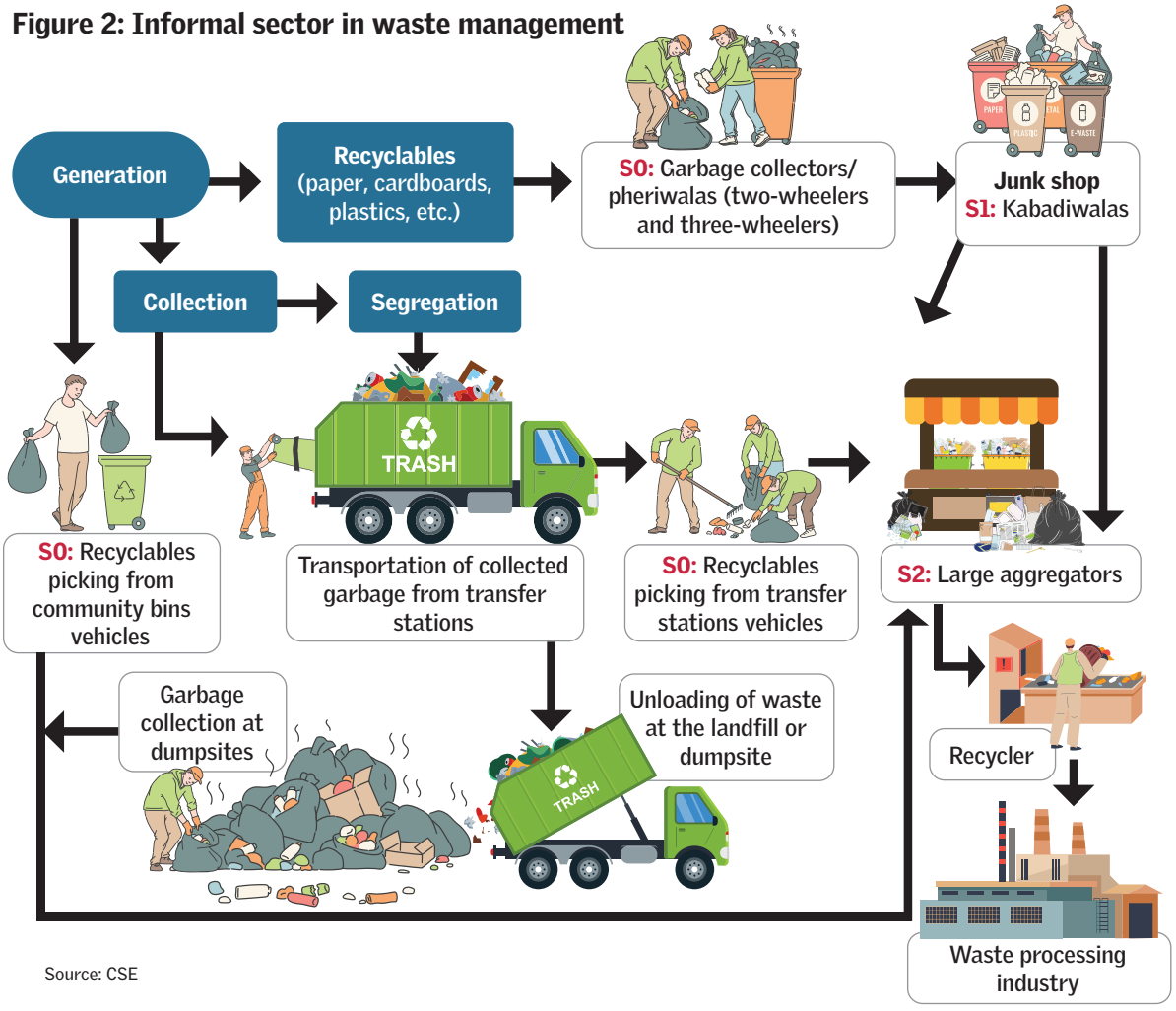
3) **Small-scale traders** (Stage 1 recyclers): These are intermediaries who buy sorted recyclables from waste pickers or itinerant buyers and sell them in bulk to larger aggregators or recycling facilities (commonly referred to as junk shops). They do minimal or almost no processing of the accumulated waste.

4) **Large-scale aggregators/Big scrap dealers** (Stage 2 recyclers): They can be defined as entities that accumulate substantial quantities of recyclable materials from various sources, preparing them for sale to recycling industries. Other than the quantity of waste, there is not much difference between the stage 1 and stage 2 recyclers.

5) **Recycling industries** (Processors): These are stakeholding establishments that process collected recyclable materials into reusable raw materials or new products. They are the final waste processors at the apex of the pyramid, fewer in number but with more economic capacity.

The waste value chain, encompassing collection from the point of generation to processing, creates a distinct hierarchy within the informal waste economy, though commonly all are referred to as informal waste workers. The following figure (see *Figure 2*) provides an easy representation of this waste value chain. However, given the large workforce involved, the structure and situations do vary across different regions of the world. This hierarchical classification should not overlook the diverse roles within the informal waste sector, emphasising its critical contribution to waste management and recycling.

Figure 2: Informal sector in waste management



Source: CSE

Nomenclature that matters: Ragpicker vs waste picker

The term 'rag picker' is often used loosely and frequently in everyday conversations, academic discussions, policy documents, and even in media narratives without much thought about its implications. Despite efforts to shift towards a more dignified terminology, the phrase continues to persist due to deep-rooted social conditioning. The term 'rag picker' carries historical baggage and often perpetuates negative stereotypes, which can dehumanise and marginalise those it describes. In contrast, 'waste picker' emerged as a more respectful term at the First World Conference of Waste Pickers in Bogota, Colombia, in 2008. This shift aimed to acknowledge the skilled labour and environmental contribution of these workers while fostering a collective identity globally. The manner in which we name someone reflects our respect for their humanity and intrinsic worth. Each person deserves to be addressed in a way that honours their role and contributions without reinforcing societal biases or stigmas. Therefore, using terms like "waste worker" or "reclaimer" acknowledges their expertise, highlights their environmental presidency, and respects their right to self-identification.

1.3 Role of informal waste workers in recycling and overall solid waste management

Accurately quantifying the impact and role of informal waste workers using traditional linear economic metrics is inherently challenging. However, their true contribution can be observed through the recycling rates of a city. It is widely accepted that informal waste workers play a key role in increasing material recycling rates, yet their contributions often remain difficult to measure due to the unstructured nature of their work.

Beyond environmental sustainability, the informal waste sector also generates substantial socio-economic benefits, particularly by reducing municipal solid waste management costs. Unfortunately, research and documentation on this subject remain limited. The following table (see *Table 1*) provides a structured overview

Table 1: Key areas of municipal cost savings enabled by informal waste workers

Type of expenditure	Cost savings and impact	Examples
Skilled in source segregation and material recovery	Source-segregated waste collection reduces pre-processing costs, prevents contamination of valuables, enables proper organic and inorganic waste processing, and enhances waste-to-wealth opportunities.	In Pune Maharashtra, waste pickers from SWaCH cooperative collect waste from more than nine lakh properties, with over 90 per cent segregation at source.[9]
Complementing or filling the gaps in waste management services by the cities or urban local bodies	Cities spend over 70 per cent of their waste management budget on primary and secondary collection. Engaging informal waste pickers for doorstep collection using manual push carts could reduce costs by one-third.	In Pune Maharashtra, waste pickers from SWaCH cooperative again avoid the transportation cost of over Rs 20 crores per year.[10]
Reduction in waste collection and transportation costs	Informal waste workers collect a significant portion of recyclables, reducing municipal collection expenses, saving costs on fuel, vehicle maintenance, and labour.	In Lima, Peru, informal waste pickers recover over 540,000 tonnes annually, significantly reducing municipal transport and disposal costs.[11]
Lower landfill and disposal costs	By diverting recyclables, informal waste workers reduce landfill usage, delaying expansion costs. Fewer disposal trips also cut down on fuel and labour expenses.	In Cairo, Egypt, the Zabbaleen recycle majority of collected waste, significantly reducing landfill dependency. In Bengaluru, India, informal waste sorting prevents 1,050 tonnes of waste daily from reaching landfills, saving over a million per year in disposal costs.[12]
Savings from recycling and resource recovery	Informal recycling reduces the need for external funding in recycling programmes and supplies industries with low-cost raw materials, benefitting the economy.	In São Paulo, Brazil, waste pickers recover over 1,000 tonnes of recyclables daily, saving the city millions annually in material recovery costs. In Pune, India, the SWaCH cooperative saves the municipal corporation Rs 113 crores per year through efficient waste segregation and recycling.[13]
Lower processing costs	By pre-sorting materials, waste pickers improve efficiency in recycling plants, lowering processing costs.	In Buenos Aires, informal waste collectors (cartoneros) recover 9–17 per cent of municipal waste, generating an estimated US $30,000 to 70,000 daily savings in municipal processing costs.[14]

Informal waste pickers promote environmental sustainability while generating significant savings on municipal waste-management costs

Source: CSE

of some of the key areas where cities benefit financially from the operations of informal waste workers within their jurisdictions.

The contribution of informal waste workers to global recycling efforts is often overlooked. In 2016 alone, it was estimated that they collected around 27 million metric tonnes of plastic waste, diverting it from landfills and oceans.[15] Remarkably the informal sector is responsible for approximately 60 per cent of all plastic materials recycled worldwide.

It is well established that cities with higher informal waste sector participation have a lower overall waste management expense, as a major portion of the waste is already being managed by them. A 2010 study titled *Economic Aspects of the Informal Sector in Solid Waste Management* found that the informal sector significantly reduced costs for formal waste authorities, saving a total of €39 million (Rs 365 crores) across six cities—Cairo, Egypt; Cluj Napoca, Romania; Lima, Peru; Lusaka, Zambia; Pune, India; and Quezon, Philippines. Majority of these savings were from the avoided waste collection costs with average savings per worker amounting to €571 (Rs 54,000), in some cases exceeding their annual

income.[16] Their operations also contribute to lower carbon footprints and large greenhouse gas (GHG) savings. In Pune, SWaCH (the waste pickers' cooperative) has been instrumental in providing efficient waste collection services. Their involvement has resulted in annual savings of approximately Rs 113 crores for the Pune Municipal Corporation, by reducing the need for additional waste collection and processing infrastructure.[17]

In India, the informal waste workers are the backbone of the recycling industry. Reportedly, 30–60 per cent of all paper and cardboard, 50–80 per cent of all plastic and nearly 100 per cent of all glass bottles manufactured in the country are recycled with the interventions of the sector.[18] Despite their significant contributions, it is concerning that the Extended Producer Responsibility (EPR) regulations fail to acknowledge or include this largest and most essential stakeholder of the material recycling ecosystem of the country.

1.4 Socio-economic and health status of informal waste workers

Despite their significant contributions to environmental sustainability, informal waste workers continue to endure severe socio-economic hardships and occupational health risks. While their real-world impact on recycling and resource recovery is often underestimated and goes unnoticed, their deplorable working conditions and health hazards have been extensively researched and documented. Numerous studies highlight the challenges faced by these workers, shedding light on the systemic neglect and vulnerabilities they endure.

The following points only provide an overview of the key occupational hazards faced by informal waste workers, emphasising the adverse socio-economic conditions and health risks they encounter in their daily efforts to manage our waste efficiently.

Socio-economic conditions

- **Extremely poor and unstable income**: Informal waste workers earn as little as $1–$5 per day, significantly below minimum wage standards in most countries. This is considerably lower than the wages earned by formal sanitation workers, despite their major role in waste recovery.[19]

- **Lack of legal recognition and social security**: Over 90 per cent of informal waste workers operate without employment contracts, social security, or legal protection. This lack of formal recognition denies them access to healthcare, pensions, and government support programmes.[20]

Living conditions of waste pickers in a specific locality of Delhi

Image credit: CSE

- **High prevalence of child labour**: Children constitute 15–20 per cent of the informal waste workforce, often working under hazardous conditions. Child waste pickers face malnutrition, exploitation, and exposure to toxins, leading to severe health risks and developmental issues.[21]

- **Social stigma and discrimination**: Waste workers often face social stigma and harassment, viewed as dirty or inferior despite their vital role. They

are frequently mistreated by the public and authorities, leading to deep marginalisation.

- **No financial recognition despite significant contributions to waste management**: Informal waste workers recover 50–80 per cent of recyclable materials, saving municipalities millions in waste collection and landfill costs, yet they receive no direct financial incentives or government support.[22]

Health conditions

- **Constant exposure to hazardous waste and toxic substances**: Informal waste workers handle heterogeneous toxic waste streams which includes medical, electronic, and industrial waste, exposing them to heavy metals, pathogens, and carcinogens. Studies show that 60 per cent of waste pickers suffer from chronic respiratory diseases due to prolonged exposure to harmful chemicals and fumes; and 40 per cent suffer from skin infections including fungal diseases, eczema, and allergic reactions from handling contaminated waste.[23]

- **High risk of injuries and infections**: Handling sharp objects, biohazardous waste, and broken glass results in frequent cuts, punctures, and infections. Waste workers have higher infection rates of hepatitis B, tetanus, and HIV due to unsafe working conditions.[24]

- **Reduced life expectancy**: Due to chronic exposure to toxic waste, air pollution, and poor healthcare access, waste workers live 15–20 years less than their national averages. In some regions, their life expectancy is as low as 39–45 years.[25]

- **Limited or no access to healthcare**: Despite their high-risk jobs, most waste workers lack health proper access to affordable medical care. Many are forced to self-treat injuries and illnesses, leading to chronic health issues and preventable deaths.

Despite facing severe socio-economic hardships and hazardous working conditions, informal waste workers remain the driving force behind the transition to a circular economy. Their contributions remain paramount in ensuring efficient resource recovery, higher recycling, and reduced environmental pollution.

Frequent hand injuries sustained by waste pickers while sorting waste with bare hands

Image credit: CSE

1.5 Scope and purpose of the study, methodologies, and limitations

This study aims to explore and evaluate existing integration models of informal waste workers, specifically the waste pickers, within the solid waste management framework across selected cities in India. These models are neither rigid nor follow a standardised approach, nor do they represent an ideal framework for integration. However, this study aims to present practical and replicable examples that can serve as a reference for stakeholders, including urban local bodies and private practitioners, inspiring them to integrate the informal waste workforce into the mainstream solid waste management system.

This study also examines the current landscape, existing policies, and gaps within the system, highlighting the scope and need for reforms. Additionally, it offers a simplified framework outlining key steps for cities to effectively integrate the

informal waste pickers and the larger informal waste workers within the solid waste management systems.

The study adopted a mixed-method approach, incorporating both a literature review on various issues and extensive field visits to document case studies of different integration models. Interviews were conducted with various stakeholders, to gain first-hand insights. To develop a deeper understanding of existing integration models, focus group discussions (FGDs) were held in selected cities. Visits were conducted across the entire solid waste management value chain, including multiple material recovery facilities (MRFs), dry waste collection centres (DWCCs), solid liquid resource management units (SLRMs), micro composting centres (MCCs), bulk waste generator (BWG) facilities, and trade union offices, to enhance field-level understanding. Furthermore, secondary data was collected from the local authorities to supplement the research.

However, the study's findings may not be universally applicable beyond the specific cities examined, limiting the broader relevance of its conclusions on integration models in diverse geographical contexts. The reliance on secondary data from a limited number of cities may have constrained the study's overall findings. The researchers' perspectives and preconceptions about integration models could have influenced the analysis, potentially introducing subjectivity. Also, time and resource constraints may have restricted the study's scope, affecting both the extent of field visits and the depth of data collected from various stakeholders across different cities.

2 INTEGRATION OR FORMALISATION OF WASTE PICKERS

This chapter explains the difference between integration and formalisation of waste pickers within the waste management system.

It emphasises the importance of adopting approaches that strengthen and value the existing contributions of waste pickers.

It highlights the preferences and needs expressed by waste pickers to improve their working conditions and efficiency.

Rather than imposing top-down models, this chapter advocates for inclusive strategies that align with the aspirations of waste pickers.

As discussed in the previous chapter, the waste sector, especially in the Global South countries, is heavily reliant on informal waste workers. Though it is very difficult to assert a number or percentage, majority of the population engaged in the informal waste business are waste pickers. These individuals collect waste from dumpsites, landfills, urban containers, or various dumping points across cities. Their labour is integral to extracting value from waste and, in effect, compensates for the shortcomings of municipal waste collection services. Most municipalities, particularly in terms of doorstep collection, have struggled to deliver this service to the required standard.

Cities with inefficient doorstep collection systems and poor source segregation levels often rely heavily on material recovery facilities (MRFs) to sort waste as an alternative. However, this approach does not always ensure that waste is properly managed or prevented from being illegally dumped. Most of the cost for cities providing waste management services are spent on door-to-door collection of waste and transporting the collected waste to processing facilities. The entire system imposes a significant financial burden on municipalities, as a large portion of their budgets is disproportionately allocated to the urban sanitation department. In stark contrast, the informal waste pickers contribute significantly to cities by reducing waste management costs through their efforts, effectively subsidising municipal expenses.

2.1 Integration or formalisation of informal waste pickers: Beyond the binary

The idea of integration is that these pre-existing workers, i.e., informal waste pickers are brought within the system, rather than being transformed, outcasted, or formalised. The waste pickers are incorporated within the system without much change in their working pattern. To keep playing the pivotal role in the entire waste value chain without displacing the existing workforce operating in a certain system by creating some new employment different to the existing one. The preservation of this work ensures that waste pickers retain autonomy over the waste, while their core skills and work of sorting and selling recyclables remain intact.

Whereas, formalisation is often perceived, although not limited to, as converting the work into a traditional time-bounded nine-to-five job, such as a factory shift or a similarly structured setup. It may involve assigning tasks like driving collection vehicles or providing collection services, often without granting access to the waste itself.

Table 2: Integration vs. formalisation: Contrasts, overlaps, and a converging pathway

Aspects	Integration of informal waste pickers	Formalisation of informal waste pickers
Tentative definition	Recognising and including informal waste pickers in waste management without altering their working type.	Converting informal waste pickers into formal or semi- formal workforce under certain regulations in a pre-existing or newly created system.
Status	Informal but acknowledged and authorised to work.	Formal and authorised to work.
Employment type	Independent or a part of cooperatives, SHGs or a waste pickers' organisation. There will not necessarily be a strict employer-employee relationship.	Contracted workers. There must be an employer-employee relationship.
Access to waste	Access to waste is a prerequisite for the integration to happen. The right to waste often supplements the wage.	In majority of the cases, formalised waste pickers do not have access to waste, especially if they are working in a processing unit.
Control over work	Maintains large autonomy.	Structured under rules and regulations.
Income structure	Earning based on collected materials or work done.	Fixed salary or payment under formal contracts.
Flexibility	High flexibility in terms of working hours and earning.	Low flexibility due to fixed roles and fixed working hours.
Example	SWaCH cooperative in Pune, where nearly 4000 waste pickers are integrated in the SWM ecosystem of the Pune Municipal Corporation (PMC). They collect waste from nearly nine lakh properties along with the right to collect user charges from the citizens. Moreover, they have got the right to dry recyclable waste which they sell independently.	In Chandigarh, India, a group of 40 women waste pickers are responsible to run an MRF, known as 'Pink MRF', and they have a certain time-bound work hours, salaried and are tagged with certain social benefits, but essentially do not have the access to waste which is coming to that MRF.

Source: CSE

The examples of integration, on the other hand, does not inherently guarantee access to waste. However, the key distinction lies in preserving the pre-existing system and incorporating it into the broader framework rather than transforming it entirely. The significance of promoting integration lies in understanding the unique circumstances and profiles of informal waste pickers across the country. For instance, in Pune, many waste pickers are Dalit women who were displaced from their native regions due to the droughts of the 1970s, arriving in the city with no land or access to livelihood. In cities like Bengaluru, Delhi, or Gurugram, waste pickers often migrate from states such as West Bengal, Assam, or Bihar, driven by poverty and a lack of livelihood opportunities.

Multiple layers of marginalisation, such as illiteracy, poverty, gender, and caste, have severely limited their chances of entering other forms of employment, including domestic work or migrant labour. In India, caste hierarchy has historically perpetuated social discrimination, acting as a barrier to inclusion in the formal workforce. Waste picking has remained one of the few occupations requiring no capital or formal qualifications, making it accessible to those with no other options. The common thread among waste pickers is their extreme marginalisation and limited access to other forms of employment, leaving this as one of the only viable means of earning an income and breaking the barrier of multidimensional poverty.

In contemporary society, waste picking as a profession still occupies the lowest levels of both the social and income ladders; their contributions, however, are invaluable. These workers bring expertise, adaptability, and efficiency in managing diverse recyclable materials, supported by extensive networks and deep logistical knowledge. Integrating them into the formal system not only acknowledges their critical role in waste management but also helps combat unemployment and poverty. For many, waste picking is their only source of income, and exclusion from the evolving system would leave them with no means to survive. The integration, therefore, must take a compassionate view of the labour while transitioning from the completely informal towards the formal. This begins with identifying, enumerating, and issuing identity cards to informal waste workers, thus offering them agency and choice to become a part of new systems that the city has to offer.

Any new system should adopt various approaches to integrate and leverage the existing informal waste sector. It could follow a SWaCH-like model, empowering informal waste collectors as service providers, or a Bengaluru-like model, where the informal scrap shop-like dry waste collection centre (DWCC) network operates as entrepreneurial hubs. Alternatively, it could also adopt an Ambikapur-like model, which relies on decentralised, labour-intensive operations managed by SHGs, or a mechanised system, as seen in some cities, to enhance operational efficiency. Regardless of the approach, the objective is seamless integration of informal waste pickers into the formal waste management framework, improving efficiency in waste collection, sorting, and recycling, while offering these workers meaningful opportunities within the new system.

Informal workforce is not illegal or something which has to be eliminated, rather, above 80 per cent of Indian labour force is now informal and they are able to earn their livelihood only from this sector. Rather than emphasising differences between formalisation and integration, we should focus on integration as the pathway. This

approach could lead a range of outcomes—formalisation, semi-formalisation, or continued integration.

Integration of the informal sector can take different forms, as seen in models like SWaCH in Pune and the system implemented by Pimpri Chinchwad Municipal Corporation (PCMC). In Pune, waste pickers are integrated into the doorstep collection system, authorised to directly collect user charges from citizens. They also have access to waste and retain the rights to sell recyclables, creating a sustainable livelihood. In contrast, the PCMC model operates under a contractor-based system. Waste pickers work as salaried employees with benefits like provident fund (PF) and employee state insurance (ESI), gaining social security and formal recognition. However, unlike before, they no longer have direct access to waste. Despite these differences, they remain part of the formal municipal waste collection system.

What ties both models together is the critical role of a trade union and the power of collective organisation. The Kagad Kach Patra Kashtakari Panchayat (KKPKP) played the steering role in ensuring the integration of waste pickers into the PCMC system. Without their advocacy, these waste pickers, once operating on the streets, might have been displaced. KKPKP's strong lobbying efforts also led to increased minimum wages for this workforce. This underscores the indispensable role of associations in uniting workers and empowering them for effective collective bargaining.

However, the integration pathway in PCMC remains incomplete. Itinerant buyers face significant challenges as the system is now saturated, leaving no structured entry point for them. Integration occurs only when a current worker leaves, such as due to death or returning to their village, creating occasional vacancies. Unlike Pune, PCMC lacks a prioritised or formal mechanism for integration. There is no comprehensive list of waste pickers to guide the hiring process, allowing contractors to recruit anyone without ensuring access or inclusion for those in need. This absence of a systematic approach highlights the gaps in achieving full integration.

Pune's success lies in its long history of activism, political will, administrative support, and active citizen participation. The foundational steps of integration—identifying and enumerating waste pickers, registering them with valid job identity cards, and linking them to social security schemes like medical benefits, pension schemes or educational support for their children—can be replicated in any city in India. These steps provide a strong framework for integration, regardless of how the rest of the model is adapted as per local contexts.

SWaCH waste picker is collecting waste from doorstep with push cart

Image credit: CSE

2.2 Beyond recognition: Imperatives of integration for the waste pickers

Field level survey reveals that multiple models of integration exist in different cities of India, but all the informal waste workers unanimously agree on the following essential measures for effective integration:

A. Inclusive identification policies: While challenging, proper identification must be prioritised, with waste pickers actively involved in policy formulation.
B. Recognition and priority: Accurate enumeration and identity cards are crucial, ensuring waste pickers are given first priority in integration efforts.

Figure 3: Imperatives of integration for waste pickers

Source: CSE

C. **Social security and welfare**: Compensation for their contributions should include gratuity, medical and accident insurance, pensions, life insurance, and educational support for their children.

D. **Job security and working conditions**: Stable employment and improved working conditions are non-negotiable.

E. **Guaranteed access to waste**: Ensuring access to waste is fundamental to their livelihoods and must be upheld.

The successful integration of informal waste workers necessitates a holistic approach that considers legal, social, and economic factors. Moreover, the effectiveness of any legal mandate depends not just on its formulation, but on the commitment of authorities and stakeholders to implement, enforce, and continuously monitor the integration process.

Job identity card issued to a waste picker by Karad Municipal Corporation

Image credit: CSE

3 EVOLVING WORKING MODELS IN INDIAN CITIES: AN AMALGAMATION OF INTEGRATION AND FORMALISATION

In this chapter, it is shown that cities follow diverse yet common pathways to integrate informal waste workers, with no one-size-fits-all model.

It discusses the ongoing debate of scale versus efficiency, as cities often prioritise large, high-tech waste infrastructure over foundational needs like waste segregation.

Case studies are presented from cooperatives, SHGs, unions, ULB-supported and Civil Society-supported models, showcasing varied approaches to integration and formalisation.

Key elements are analysed across models, including enumeration, registration, inclusion in city waste systems, access to waste and benefits, formal employment modes, and MoUs between ULBs and waste pickers.

There is no single, unified model for integrating informal waste workers, but several common pathways exist across different cities. Waste pickers can be integrated into various aspects of waste management, including door-to-door collection, secondary transportation, and operations at material recovery facilities (MRFs), transfer stations, and processing units.

The integration of the informal sector in Indian cities has been largely inadequate. Progress has only been possible in cities where waste pickers have fought collectively through trade unions or cooperatives. As depicted in the following chapter, while cities like Shillong in Meghalaya, Karad and Aurangabad (a civil society initiative) in Maharashtra, and cities in other states have made efforts in bits and pieces; the enumeration process often lacks proper guidelines and is poorly implemented. Field-level interactions with various stakeholders reveal a significant misconception among ULBs, the fear that once waste pickers are enumerated and registered, the government will be obligated to provide them with jobs or take responsibility for their livelihoods, regardless of employment opportunities. What stands out most is that the integration process has not evolved over time; it continues to be perceived solely through the lens of job provision. However, true integration should be perceived beyond employment; it should empower waste pickers to continue their work more efficiently and with greater dignity, recognising their vital role in the waste management ecosystem.

Despite the mention of informal waste worker integration in the Solid Waste Management (SWM) Rules, 2016; cities are not mandated to enforce it. Without a clear policy on enumeration, even when cities require concessionaires to prioritise hiring informal waste pickers, there is no guarantee these workers will get jobs. In most cases, urban poor groups—often organised into self-help groups (SHGs)—are frequently deployed in collection systems, effectively sidelining experienced and marginalised waste pickers. For instance, major cities in Odisha and Chhattisgarh with operational facilities mostly employ urban poor, raising questions about transparency. Though there is nothing wrong in providing livelihood opportunities to the urban poor, the workers whose primary livelihood is waste picking should be considered first. There is a fine difference between the urban poor and waste pickers. To address this, a robust policy on enumeration is essential; one that prioritises the most vulnerable, marginalised workers whose primary livelihood was waste work, possesses the necessary skills, and have long contributed to environmental protection and cost-saving for cities. Unfortunately, most Indian cities with intent of integration are only focusing on hastily creating SHGs that can be coerced into improper roles, mainly for assessments such as the *Swachh Survekshan*.

Waste pickers have historically played a role in ensuring source segregation for their own survival, relying on recyclables to sustain their livelihoods, also leading to prevention of plastic leakage into the environment. However, the rise of privatisation in the waste sector is hindering them from accessing materials they have traditionally collected. In many cases, private entities operating in city-provided spaces block waste pickers from entering treatment facilities. In Delhi, for instance, privatisation has worsened their plight. Waste pickers have lost sorting spaces due to city beautification and visual cleanliness efforts, with no rehabilitation plans or integration into existing systems. They lack facilities for sorting, storage, rest, or basic hygiene; forced to pay waste handlers to access or sort materials, or negotiate time slots at transfer stations to recover recyclables.

At Gazipur dumpsite, the establishment of a waste-to-energy (WtE) plant has restricted their access to dry waste during the day, forcing them to work at night and leave their children unattended. This loss of access highlights the urgent need to safeguard their livelihoods through integration and support. In Jalandhar, about 100 waste pickers informally collect waste from doorsteps, transporting wet waste to a nearby MCC, while managing dry waste independently by sorting and sending for recycling. In Guwahati, waste pickers risk their lives scavenging valuables from mixed waste unloaded at transfer stations.

In contrast, Pune Municipal Corporation (PMC), through the intervention of SWaCH cooperative, provides waste pickers with iron cage-like structures called “Pinjra” to store and accumulate dry waste until it can be sold. Similarly, in Bengaluru, Hasiru Dala’s advocacy enabled waste pickers to secure land from the Bruhat Bengaluru Mahanagara Palike (BBMP), and establish MRFs cum dry waste collection centres (DWCC). These centres allow them to sort, store, and sell recyclables. Waste entrepreneurs in Bengaluru also operate their own collection vehicles and employ workers to assist with sorting and managing the DWCCs, creating a more sustainable system.

In some cities, waste pickers have secured ID cards issued by corporations or organisations, but these provide little beyond protection from harassment or criminalisation. They lack livelihood guarantees, social security, or welfare benefits. Proper identification and enumeration are crucial to ensure genuine waste pickers receive future benefits. While urban poor can be included, priority must be given to existing waste pickers, including itinerant and landfill waste workers. Clear guidelines need to be established for this process, and advocacy efforts must focus on this critical need.

Despite their preference for an independent nature of work, waste pickers seek security, dignity, and social welfare in their work. They value the flexibility of self-determined income, but require designated spaces for sorting and storing collected materials. While some see models like SWaCH as aspirational due to their structured approach and comprehensive facilities, others find them burdensome and restrictive to growth of the city's waste management infrastructure. For lower-income workers, such models offer improved working conditions. Many waste pickers are open to formal employment if it guarantees higher wages, but contractor-led systems are often met with resistance due to fears of exploitation.

There is always this impending debate of scale versus efficiency in waste management, especially when the government pushes for larger, costly, and high-tech facilities in the name of waste-to-wealth. Cities prioritise large-scale waste management infrastructure as the preferred solution, without getting the foundational issues fixed first. Without ensuring a constant supply of segregated waste, no technological innovation can efficiently process the waste.

However, it also must be noted that scaling up dry waste sorting does not necessarily improve efficiency. For instance, in Indore, the centralised MRF handling 350 tonnes per day (TPD) employs nearly 300 workers but recovers only a small percentage of materials for recycling. In contrast, Pune's decentralised model employs ten times more waste pickers, achieving a significantly higher percentage of material recovery. A study by SWaCH Pune *What we Waste* estimates that 37 per cent of plastics are recovered by waste pickers for recycling.[26]

This comparison highlights a critical issue—larger facilities often reduce livelihood opportunities and lower recycling efficiency. In Indore, centralised mechanised sorting has cut employment opportunities to one-third of what is possible in Pune, while also failing to maximise material recovery. Pune's decentralised system, where waste pickers engage in direct waste segregation at the source, has proven to be far more effective in both employment generation and recycling rates, without being exorbitantly expensive for the ULB.

Models of informal waste pickers integration

3.1 Ambikapur: Solid and Liquid Resource Management (SLRM) model, Chhattisgarh

Ambikapur, with over 2,00,000 residents, is among the oldest urban centres in the state of Chhattisgarh. The city serves as the headquarters of the Surguja district, which includes six other districts of northern Chhattisgarh. The city has

been the forerunner for its sustainable solid waste management model and is highly acclaimed as the cleanest small city in India for its decentralised waste management model. The city is also known as India's first zero-waste landfill city.

History of transformation

Before 2015, Ambikapur was in a deplorable condition in terms of waste management; the city was functioning on a collect and dump model, with no priority given to source segregation or resource recovery. The waste collection system was also dysfunctional, with the city government hiring contractors to manage the collection and disposal of waste. The city had placed close to 600 community bins and identified about 1000 garbage vulnerable points (GVPs). The bins were overflowing with mixed waste, and the hired staff of the contractors could attend to only 20–25 bins for pickup in a day to dispose of them at the city's dumpsite at the periphery of the city.

Uncollected waste was dumped indiscriminately on the roads. The city's dumpsite was also in a poor state, without any scientific mechanisms for leachate collection or managing landfill gases. The dumpsite was located on the main highway to Raipur, the state capital. The dumpsite was filled beyond capacity, and waste spilled over the highway, causing a disturbance to traffic. The Ambikapur Municipal Corporation then requested that the district administration provide new land for a new dumpsite. The district administration was reluctant to allocate any new land within the proximity of the city to create a fresh dumpsite. In March 2015, a roundtable was organised including all possible stakeholders, political representatives and residents to devise a plan to change the waste management scenario in the city.

The roundtable identified that the city is spending a considerable amount of money to operate the private contractors to manage their waste, but the results were subpar and not sustainable in the long run. The waste management system overall lacked public participation, awareness, and interest among the residents of the city. A city-level action plan was devised to revamp the entire waste management mechanism of the city.

Details about integration

The primary objective of the city-level action plan was to remediate the existing dumpsite and ensure that no new dumpsites were created for the disposal of fresh waste. The local administration transitioned from a contractor-based waste collection system and included women SHGs in waste collection and primary processing across the city.

In 2014, a widow divorcee separated (WDS) survey was conducted to identify the urban poor of the district. As a result, women from in and around the city were given an opportunity to work on revamping the waste management of Ambikapur. 62 SHGs were formed in this period, and all were brought under the *Swachh Ambikapur Mission Shakari Samiti Maryadit*. The women were initially trained by Mr. C Srinivasan, the ideator behind the SLRM model. The city administration conducted a comprehensive survey to analyse the quantum and composition of the waste generated, along with the revenue potential from user fee collection. Over time, through public and private funding, 20 SLRM units were constructed to manage the 75 TPD of municipal solid waste that the city generated.

The Ambikapur model is well documented and has been a constant among the best performing ULBs in India, as per the previous Swacch Survekshan assessments. At one point, it held the distinction of being the cleanest small city in India and arguably the first city in the country to be declared dumpsite-free. The model is impressive because it has evolved with time to meet the city's growing demand.
In 2019, the city launched the 'Ragpickers Kalyan Yojna' to identify the individuals whose source of income were curtailed, since fresh waste was being processed at SLRMs and the city moved away from the dumping model. 150 families were identified near Mayapur Colony whose incomes were reduced due to inaccessibility to waste. 115 women from these families had agreed to work in SLRMs; they were subsequently trained and brought together under SHGs.

For better management of SLRMs and the waste management operations of the city, Swachh Ambikapur Mission City Level Federation (SAMCLAF) was established in 2019, bringing together 15 area-level federations. Today, the federation has a total of 480 members from multiple SHGs.

The city does not have to bear the cost of daily door-to-door waste collection. Each collection vehicle, typically a manual van or e-vehicle, is staffed by three women SHG members. Two of them are responsible for door-to-door waste collection, and one only for user fee collection. The SHG members are serving over 32,000 households and around 500 commercial establishments. A fixed user fee of Rs 50 per month for households and Rs 100 for commercials is levied. Though the user fee collection potential per month is Rs 20 lakh, around Rs 17 lakh is collected. 85 per cent user fee collection provides a regular revenue for the expenditure on providing waste collection services.

Post-collection by women SHGs, the wet waste is sent to decentralised composting units across the city. The dry waste is brought to their respective SLRM centres,

Doorstep waste collection by an SHG member in Ambikapur

Image credit: CSE

where it is separated and stored into 16 categories, further selling it to empanelled recyclers. Ambikapur Municipal Corporation has made a list of seven empanelled recyclers and the federation earns on an average of Rs 10 lakh per month from the sale of sorted dry waste. Money earned from the sale of the waste is managed by Swachh Ambikapur Mission City Level Federation (SAMCLAF) and the benefits are passed on to the SHG members.

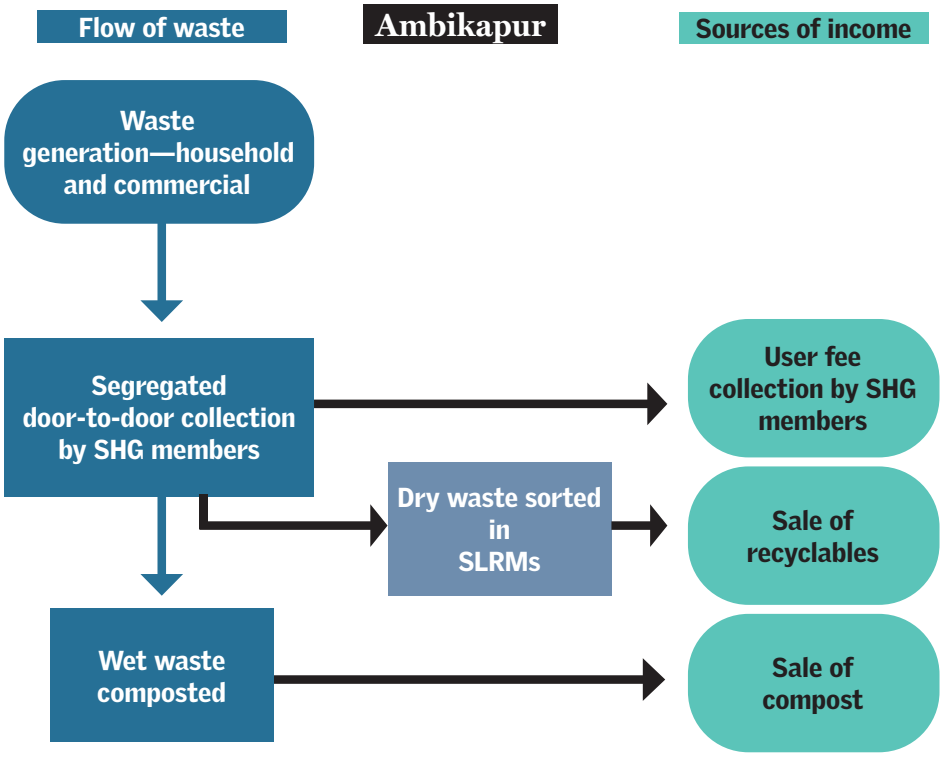
Each area level federation has fixed deposits of Rs 20 lakh with a nationalised bank saved from the daily operations. There are also initiatives to operate cutlery banks by these area-level federations, which work as extra sources of revenue for the federation. Each member is paid Rs 10,200 per month for their work and bonuses for the festive season. The payment is revised every year based on the state's minimum pay decree. The steady flow of income has ensured better planning, along with access to state and central government welfare schemes.

Replicability and viability for ULBs

Ambikapur is a good example on why decentralised waste management can be adopted in small cities and how, through proactive measures, small cities can act to create a low-cost, effective and almost a financially sustainable model.

The Ambikapur model is a low-cost, efficient revenue generating model. It is not entirely financially independent, as almost half of the operational expenditure is still borne by Chhattisgarh State government. The model caters to erstwhile waste pickers, with mostly urban poor being integrated in the model. But it has certainly helped the municipal corporation save a major part of the expenditure when providing waste management services. The city needs to work on skill upgradation of the service providers and inculcate newer methods to improve wet waste management. The sale of good quality compost can further add to the revenue of the federation.

Figure 4: Waste trail managed by waste pickers in Ambikapur



Source: CSE

SHG members with CSE team at DC Road SLRM, Ambikapur

Image credit: CSE

3.2 Aurangabad (Chhatrapati Sambhaji Nagar): Integration model initiated by civil society, Maharashtra

Aurangabad, officially known as Chhatrapati Sambhaji Nagar, is the industrial town in the state of Maharashtra, with a population of over 1.7 million and 300 thousand households. As per its city solid waste action plan (CSWAP), the city generates over 450 TPD of municipal solid waste.

History of transformation

The journey of Centre for Applied Research and People's Engagement (CARPE) with a for-profit wing, Ecosattva, began as the Civic Response Team (CRT) in 2014. They proposed a methodology known as 'BOTRAM' (baseline, onboarding, training, resource recovery and monitoring) to the municipal corporation of Aurangabad. This initiative emerged in response to the city's severe solid waste mismanagement issues, aiming to provide a comprehensive solution.

The CARPE team initially piloted establishment of simple composting pits using locally known 'Khaddas' (cemented cylindrical structures), and installing

iron cages for organic waste storage. Awareness drives on segregation were also conducted. The positive impact from that engagement led the municipality to provide a dedicated municipal land for five MRFs. The capital expenditure for setting up the facilities were secured from CSR fundings.

This growth not only improved waste management practices, but also ensured livelihood security for local waste pickers by giving them access to recyclables. Five MRFs established throughout the city and deployed 115 waste pickers during the course of a decade's journey. This project transformed community engagement and environmental stewardship across Aurangabad. During its baseline survey, CARPE identified over 100 waste pickers at the Naregaon dumpsite and mapped more than 90 GVPs across the city. Using insights from this survey, they developed a mobile application aimed at eliminating these GVPs. However, this led to a crisis among waste pickers who were in a fear of losing their primary source of livelihood. Recognising the need for their integration into the solid waste management system, CARPE signed a Memorandum of Understanding (MoU) with the municipal corporation and facilitated job cards for these waste pickers. They were deployed across various MRFs, which ensured their livelihoods remained secure.
Between 2022 and 2024, due to frequent changes in the leadership in the corporation, issues with land appraisal, and two massive fire outbreaks in two of their MRFs, CARPE received a big set-back. Currently they are operating with only two MRFs, deploying 54 waste pickers.

Details about integration

These 54 waste pickers, mostly women, are currently working in the existing MRFs established by CARPE. The city's private concessionaires, responsible for door-to-door collection, sends dry waste to the facilities. The dry waste is sorted individually into seven major categories, then weighed and registered against their names. After a considerable quantity is accumulated, they are sold collectively to the market by EcoSattva as an aggregator, and the profit is passed on to the waste pickers.

During CSE's field team visit to one of the operational MRF, waste pickers revealed that this arrangement is making their search for livelihood easier and secure. Still, they felt that their earnings did not improve significantly due to a decline in the market, as well as in the quality of recyclables received. The workers receive approximately Rs 16,250, equating the minimum wage as per Maharashtra state minimum wage standard, provided they are present for 26 days of work.

As mentioned above, the availability of the valuable recyclables is decreasing gradually. It was found during the field visit that there are multiple leakages before

Waste pickers sorting materials at the CARPE-managed MRF in Chhatrapati Shambhaji Nagar (Aurangabad)

Image credit: CSE

the vehicle reaches the MRF, resulting in a decrease in the quantum of high value recyclables received by the waste pickers, thus minimising their income. Both the MRFs have a capacity of three tonnes per day and receive a little more than 2.5 tonnes of segregated dry waste per day. Mostly low value, multi-layered plastics (MLPs) are received in the facility, and the combined sale does not provide enough to cover the operational costs. Land, electricity, and transportation of waste is covered by the ULB, while the pay of the workers and other costs are derived from the sale of waste.

Both MRFs combined have an overall monthly expenditure of about Rs 14,00,000 per month, but recover only a fraction of the expenditure from the sale of waste. Over 60 per cent of the monthly expenditure is secured through Corporate Social Responsibility (CSR) support and plastic credits partnership models. Some additional revenue is also generated from the sale of MLPs under EPR scheme. It should be noted that MRFs cannot sustain themselves solely through the revenue generated from selling recovered waste.

Replicability and viability for ULBs

For an integration model like CARPE to succeed, full support and recognition from the ULB is essential. Currently, the MRFs they operate are struggling to sustain themselves, relying on external funds raised by the organisation through CSR funding, EPR, and plastic credits.

Following the fire outbreak at two of their MRFs, more than 50 waste pickers lost their jobs. Additionally, there is no evidence of a comprehensive city-wide enumeration of waste pickers in the city, nor are they linked to any social benefit schemes. It was estimated that there are at least 300 waste pickers operational whose primary livelihood is waste picking. Despite CARPE's intensive efforts, many waste pickers continue to depend on scavenging from GVPs scattered across the city to sustain their livelihood.

On average, at least two TPD of valuable recyclables are extracted from collection vehicles in each zone, totalling around 20 tonnes per day citywide. If integrated into the system, waste pickers could have been given formal access to these recyclables, ensuring a more secure and dignified livelihood.

The city pays Rs 2,200 per tonne for primary and secondary collection across ten zones and 117 wards to a concessionaire. The contract with another concessionaire to run three 150 tonne processing units is at the rate of Rs 857 per tonne. Together, this accounts for more than Rs 49 crore per annum from collection and transportation and waste processing.

If the city had integrated waste pickers into the doorstep primary collection system, at least 100 of them could have been employed to serve approximately 20,000 households—assuming an average coverage of 200 households per worker. Following the example of Pune's SWaCH model, the city could have provided them with manual pushcarts to navigate narrow lanes and PPE kits for occupational safety. In return, these waste pickers could have collected user fees at Rs 100 per household, summing to an earning of Rs 20,000 per month while also gaining direct access to recyclables, ensuring a stable livelihood. This approach would have required only a one-time investment from the city while significantly reducing its carbon footprint.

Table 3: The cost of primary and secondary collection and waste processing in the city

Type of service	Rate	Per day cost	Per month cost	Per year cost
Primary and secondary collection	Rs 2,200 per tonne	2200x450 = Rs 9,90,000	9,90,000x30 = Rs 2,97,00,000	2,97,00,000x12 = Rs 35,64,00,000
Processing cost*	Rs 857 per ton	857x450 = Rs 3,85,650	3,85,650x30 = Rs 1,15,69,500	1,15,69,500x12 = Rs 13,88,34,000
Total		Rs 13,75,650	Rs 4,12,69,500	Rs 49,52,34,000

*Assuming 100 per cent collected waste are being processed

Source: Chhatrapati Sambhajinagar Municipal Corporation (CHMC)

Additionally, some of them could have been engaged in sorting at the city's three MRFs, ensuring direct access to recyclables, and with proper capacity building, involved in composting operations. Given that the city has a population exceeding one million, the per capita waste generation, as per the SBM 2.0 guidelines, is estimated at 500 grams (0.5 kilogram) per person per day. Assuming an average household size of five members, each household generates approximately 2.5 kilograms of waste daily.

If one informal waste picker collects waste from 200 households, the total waste collected per picker would be 500 kilograms per day. With 100 such waste pickers, the total waste collected would amount to 50 metric tonnes per day.

This initiative could potentially help the city save around Rs 1.1 lakh daily, translating to Rs 33 lakhs monthly, and about Rs 3.96 crores annually. This figure represents approximately 11.10 per cent of the city's total waste collection costs (see *Table 4*).

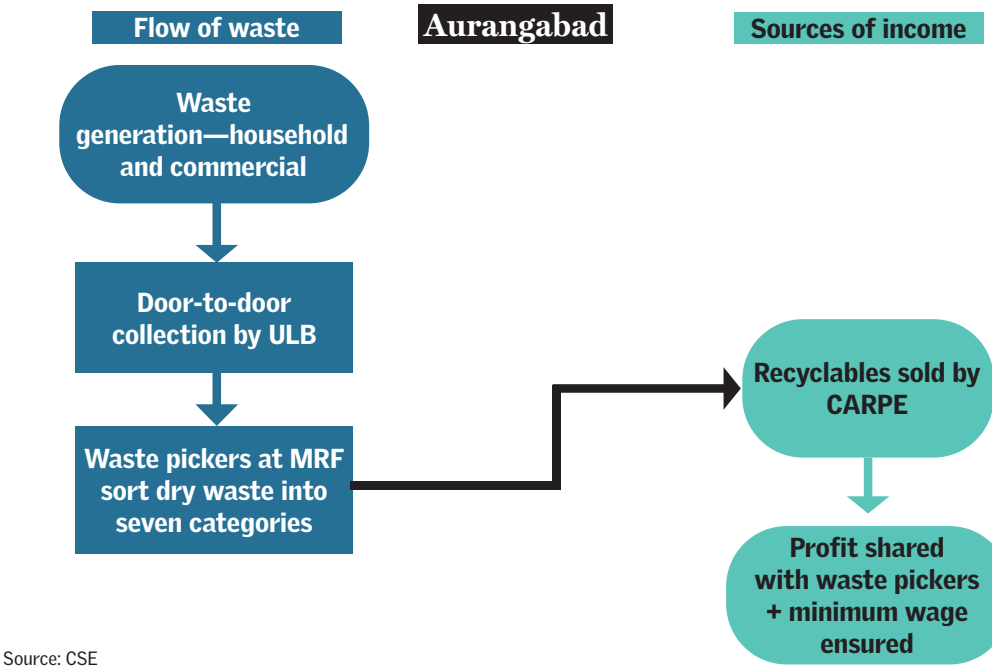
Gradually integrating more informal waste pickers would have saved more money for the city, while at the same time securing their livelihood. Therefore, while initiatives like CARPE are undoubtedly impactful, achieving a transformative change in the informal waste ecosystem and reducing the financial burden on cities requires one fundamental solution—integrating informal waste pickers into the formal solid waste management system.

Table 4: Integration of informal waste pickers reducing the burden on ULBs

Waste generated per day per household	Total number of household covered by 100 waste pickers	Total waste to be collected per day	Per tonne collection cost currently	Total cost can be saved per day for 100 waste pickers (per day)	Total cost can be saved per day for 100 waste pickers per year (300 working days)
2.50 kilograms	20000	50 tonnes	Rs 2,200/-	Rs 1,10,000/-	Rs 3,96,00,000/-

Source: Collected from field study

Figure 5: Waste trail managed by waste pickers in Chhatrapati Sambhaji Nagar



Source: CSE

Waste pickers with CSE visiting team in Chatrapati Sambhaji nagar (Aurangabad)

Image credit: CSE

3.3 Bengaluru: Integration model through DWCC, Karnataka

Bengaluru, India's leading IT hub, ranks as the nation's third most populous city and fifth largest urban area, with an estimated population of 13 million and a significant number of floating population. The city generates over 5,000 tonnes of municipal solid waste per day, highlighting the emerging challenges posed by its ever-growing population and urban growth.[27] It is divided administratively into 198 wards, 27 divisions, and eight zones. The municipal corporation, Bruhat

Bengaluru Mahanagara Palike (BBMP), covers waste collection from nearly 97 per cent of the city's three million households. According to the Swachh Survekshan 2023, Bengaluru achieves a segregation rate of 99 per cent and processes 81 per cent of its waste.

Bengaluru has made remarkable strides in managing its vast waste generation, with a key achievement being the integration of informal waste workers into the city's solid waste management system. Under a tripartite agreement between the BBMP, resource organisations (ROs), and waste pickers, dry waste collection centres (DWCCs) are operated with the active involvement of informal workers, who are empowered as waste entrepreneurs. In the history of the waste workers' movement in India, Bengaluru stands out as a pioneer city, having introduced the integration model well before the Solid Waste Management Rules, 2016 came into effect.

History of transformation

Bengaluru became the first city in India to issue occupational ID cards to waste pickers in 2011, following a directive from the 'Lok Adalat' (public court), in response to a writ petition demanding official recognition of waste pickers. The Karnataka Municipal Corporation Act, 1976 provides the legal framework for solid waste management in the state, and the Karnataka government allocated budgetary support for scaling up DWCCs across cities. As a result, all urban local bodies, including BBMP, adopted the decentralised DWCC model to promote sustainable waste management.

Hasiru Dala (HD)—meaning 'Green Force' in Kannada—a civil society organisation established in 2010, played a key role in enumerating waste pickers in collaboration with BBMP and assisting in issuing their ID cards. A 2013 study by Hasiru Dala, titled *Informal Waste Workers,* found that 15,000 waste pickers in Bengaluru can save the city Rs 84 crores annually. [28] The organisation has consistently advocated for integrating waste workers into the city's waste management system, emphasising their contributions to the economy, environment, and climate change mitigation, while pushing for their social and livelihood security.

In 2013, 11 resource organisations (ROs) were officially mandated to set up and manage DWCCs across Bengaluru, with waste pickers allowed to operate them. Currently there are 141 DWCCs operating in the city, out of 198 wards. Hasiru Dala was assigned 55 wards, but due to land and operational constraints, it could successfully establish DWCCs in 38 of those wards. Each of the 38 DWCCs is managed by a local waste picker, who employs 10–12 other waste pickers, some

from Bengaluru and others who migrated from states like Assam, West Bengal, and Bihar. This system provides livelihoods to an estimated 250–400 waste workers.

In 2020, Bengaluru notified its own municipal bye-laws, outlining the objective of establishing DWCCs to integrate waste pickers and other informal waste workers, enabling them to operate independently and become social entrepreneurs. The bye-laws also recognised the role of informal waste workers in operating MRFs and explicitly included them in the door-to-door waste collection system, particularly for dry waste. It stated that, wherever possible, dry waste collection should be carried out through informal waste pickers and SHGs integrated into BBMP's system.

Due to sustained advocacy by Hasiru Dala, the bye-laws included key provisions for integration, such as provision of safety gear, job cards, capacity building, and linking workers to social security schemes. Following the notification, BBMP signed a tripartite agreement with ROs, individual waste pickers, and the corporation to assign door-to-door dry waste collection services two to three times a week as needed. The agreement, valid from 2021 to 2024, included Hasiru Dala as one of the designated ROs responsible for implementation.

Details of the integration

The BBMP model integrates waste pickers as operators of DWCCs, supporting them to become waste entrepreneurs. With help from BBMP, they secured land for one DWCC per ward and the infrastructure was built by the city itself. Each centre is equipped with two vehicles, purchased by the waste pickers through loans or financing. BBMP provided Rs 56,000 for vehicle operations for the first six months, later reduced to Rs 23,000 per month. Waste pickers collect dry waste two–three times a week, store and manually sort it at DWCCs with 10–12 workers they hire, and then sell recyclables in the market. Organic waste is separately collected by BBMP vehicles on alternate days and processed.

After integrating waste pickers into the city's formal waste management system through the DWCC model, Hasiru Dala shifted its focus to their holistic development. This included linking them to social security schemes such as pensions, health insurance, and medical benefits, and supporting the overall wellbeing of their families. Waste pickers were connected to public housing programmes, and their children were helped to get educational scholarships, access to a community library, and hostel facilities for those lacking a supportive home environment. Regular medical check-up camps were organised in both communities and DWCCs, with provisions for emergency healthcare, and their

One of the DWCCs operated by Hasiru Dala in Bengaluru

Image credit: CSE

children were enrolled in nutritional support programmes. Although these initiatives were not within the purview of the city's integration model—initiated by a waste pickers' organisation—they still played a crucial role in a holistic success of the model.

Despite Hasiru Dala's strong advocacy, the model faces key challenges due to limited financial and policy support from the city administration. Unlike cities like Chandigarh, Karad, or Pune, Bengaluru's waste pickers are not assured minimum wages or the right to collect user fees. Their income depends entirely on the volume of recyclables collected and sold, making many DWCCs economically unviable. Ideally, each ward should have one DWCC with two vehicles, but irregular operation and maintenance (O&M) funding from BBMP and insufficient infrastructure in larger wards make operations difficult. Combined with market instability and the burden of paying 10–12 workers, including drivers and helpers, many DWCCs struggle to remain sustainable.

Below is an income and expenditure analysis of January 2023 of a DWCC in ward 177, J.P. Nagar, Bengaluru. It shows that MRFs or DWCCs need operational support in order to be viable. Cost of collection is more than value generated from waste, even when there is no pilferage in collection before reaching the MRF or DWCC in a city like Bengaluru.

Table 5: Liabilities of the DWCC

Number of households covered for dry waste collection	8860
Dry waste collection vehicle	2
Textile waste collection vehicle	1
Operator	1
Driver	3
Helper	3
Sorter	7
Total working days	26

Source: Collected from field study

Table 6: Expenditure of the DWCC

Heads	Rate	Total (Rs)
Sorter's daily payment	600x7x26	1,09,200
Driver's daily payment	700x3x26	54,600
Helper's daily payment	600x3x26	46,800
Operator's daily payment	700x1x26	18,200
Monthly drinking water bill	-	1,800
Medical and PPE	-	5,000
Diesel	300x2x26	15,600
Repair cost	-	300
Documentation cost	-	700
Weighment slip	-	900
Per vehicle rate	900x2x26	46,800
Total expenses incurred	2,99,900	
Total sell of recyclables		1,30,130
Vehicle maintenance paid by BBMP for two vehicles		46,632
Total income		1,76,762
Total loss	(299900-176762)	1,23,138

Source: Collected from field study

The economic unviability of the DWCC model, combined with BBMP's current approach, is threatening the sustainability of the waste pickers' livelihoods. The three-year tripartite agreement between BBMP, waste pickers, and ROs ended in November 2024, and has yet to be renewed. Despite pending maintenance payments from the city, waste pickers have continued door-to-door dry waste collection. Meanwhile, BBMP is planning to completely shift towards a centralised waste management system, including two integrated solid waste management facilities and one waste-to-energy (WtE) plant, effectively bypassing the decentralised, community-driven model led by waste pickers. According to BBMP officials, there will be no remaining RO or waste pickers' organisations, instead concessionaires will directly engage with waste pickers to operate DWCCs in the city. This shift reflects a move toward privatisation, leaving the waste pickers marginalised and at risk of losing their hard-earned livelihoods and recognition within the city's waste ecosystem.

Replicability and viability for the ULBs

The BBMP-DWCC model of integration has not only provided waste pickers with dignity, recognition, and a formal role in the city's waste management system, but also helped transform them into waste entrepreneurs—challenging social stigma and discrimination in the process. As a decentralised model of solid waste management, it delivers multiple co-benefits, including livelihood security for waste pickers and significant contributions to climate change mitigation.

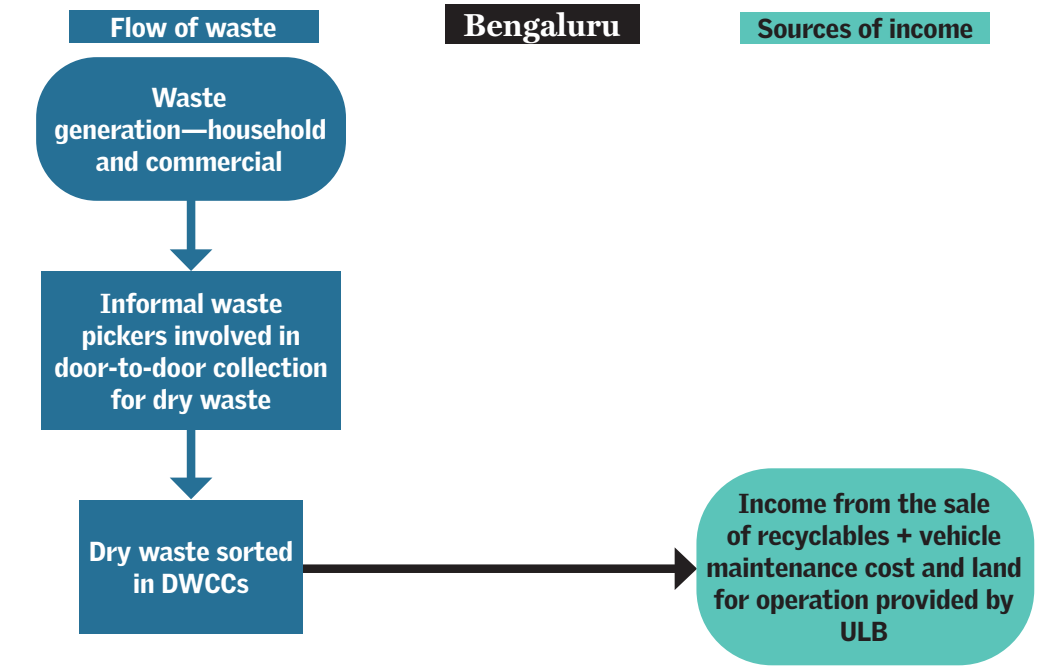
This model also demonstrates the power of waste picker organisations in advocating for their inclusion in mainstream urban waste management systems and advancing the broader waste pickers' movement. Recognising the importance of collective bargaining, Hasiru Dala supported the formation of a registered waste pickers' union one and a half years ago, empowering them to directly negotiate with city authorities for their rights and needs.

As one of the most successful models of integration in India, the BBMP decentralised-DWCC model has immense potential for replication in other ULBs. However, its sustainability depends on continued institutional and financial support. For effective replication, cities must adopt a ward-centric approach customising infrastructure, operational plans, and gap funding strategies based on local demographics, geography, and the quantity and type of waste generated. These measures are essential to ensure the long-term economic viability of each DWCC.

Waste sorted into categories in a DWCC in Bengaluru

Image credit: CSE

Figure 6: Waste trail managed by waste pickers in Bengaluru



Source: CSE

3.4 Bhubaneswar: Self-help group (SHG)-based model of integration, Odisha

Bhubaneswar, the largest and capital city of Odisha with over 1.4 million residents, is known for its efficient, decentralised solid waste management. The city generates about 850 TPD of municipal solid waste, which is managed by the members of over 50 SHGs in 30 micro composting centres (MCCs) and 22 MRFs. The state of Odisha has been a champion of urban poor integration through SHGs, and the Bhubaneswar model stands out due to its efficiency. The city claims that 100 per cent of the waste generated is processed, and today it is among the largest cities in India without an active dumpsite.

History of transformation

From 2020 onwards, Bhubaneswar city administration started developing MRFs and MCCs in all three zones of the city, with financial support from the state government and corporate social responsibility (CSR) funds in the private sector. Seven NGOs operating in the city were given responsibility for primary door-to-door waste collection from households and commercial establishments.

Waste sorting by Swachh Karmis from a conveyor belt in an MRF, Bhubaneswar

Image credit: CSE

The objective of the Bhubaneswar municipal corporation was to outsource and streamline the waste collection process, so that 100 per cent of the city's collection points would be covered. To monitor the process of waste collection and spread awareness about source segregation in all 67 wards, four Swachh Sathi members from SHG groups were allocated to each ward.

Details about integration

Currently, 335 and 338 'Swachh Karmis' (sanitation workers) are working in MCCs and MRFs, respectively, across the city, ensuring that wealth is created out of the waste that the city is generating. Over 250 Swachh Sathis (sanitation allies) are also on the field every day to monitor and ensure that households and commercial establishments are giving out segregated waste. All of them are identified as urban poor, and many of them were making their living out of the city's waste. These individuals were brought together by forming multiple SHGs, which were categorically incorporated following the guidelines and directives of the Odisha Urban Livelihood Mission. Multiple area level federations (ALFs) also do exist in the city, which usually consist of members of more than ten SHGs. The collective effort of SHGs plays an important role in negotiating their demands and working in harmony with the Bhubaneswar municipal corporation.

Following orders from the National Green Tribunal (NGT), after a long legal battle between Bhubaneswar Municipal Corporation and the residents of Daruthenga Village, the Bhuasuni dumpsite at the outskirts of the city completely stopped accepting fresh waste on May 17, 2023. Bioremediation of legacy waste is underway at the site, and the dumpsite was cordoned off for any outsiders. BMC officials enumerated and provided jobs to 91 dumpsite waste pickers to manage waste at MRFs across the city, particularly at the 15 TPD MRFs at the temporary transfer station (TTS) and the composting centre near Sainik School.

Replicability and viability for ULBs

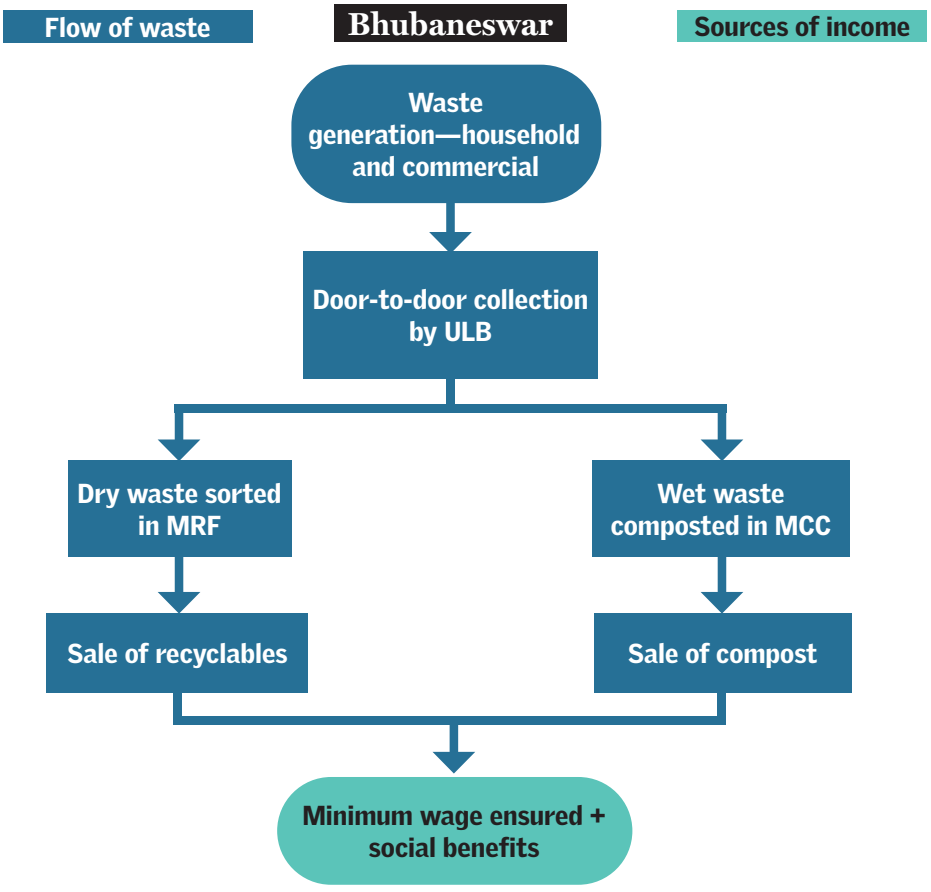
The Swacch Karmis earn Rs 13500 alongside ten per cent of hardship allowance, while the Swach Sathis earn Rs 10,000 per month for their work. The 22 MRFs combined generate over Rs 25 lakh per month from the sale of recoverable dry waste to its empanelled recyclers. The 36 MCCs also provide high-quality city compost that is widely used for horticulture usage across the state. The money from the sale of recyclables and city compost goes to the municipal corporation and used for operational expenses. The Bhubaneswar model is a strong case for other ULBs to learn that by empowering and utilising SHGs on a large scale, revenue can be generated along with managing municipal solid waste efficiently.

Odisha has been a champion in utilising SHGs in various aspects of urban governance. However, the benefits have reached the waste pickers only after the closure of the city's dumpsite. The city government needs to do a comprehensive enumeration and provide benefits to all waste pickers that are operating in the city.

Swachh Karmis with the Deputy Commissioner Bhubaneswar Municipal Corporation and CSE visiting team

Image credit: CSE

Figure 7: Waste trail managed by waste pickers in Bhubaneswar



Source: CSE

3.5 Chandigarh: Dual model of integration and formalisation, Punjab and Haryana

Chandigarh is India's first planned city spanning over 114 square kilometres, with an estimated population of 1.3 million, generating 550 tonnes of waste daily. It ranked 11th overall in the Swachh Survekshan, 2023. The city's solid waste management vision aims not only to upgrade infrastructure and systems, but also aims to improve the lives of those involved in waste management, including informal waste pickers.

Over the past three years, Chandigarh has made significant strides in waste management, improving its Swachh Survekshan ranking from 66th in 2021 to 11th in 2023. The city now boasts 100 per cent door-to-door waste collection and over 90 per cent segregation at source. Its fleet includes 524 collection vehicles, each equipped with four compartments to separately collect wet, dry, sanitary, and domestic hazardous waste.

In terms of infrastructure, Chandigarh has three MRFs cum transfer stations, with a total capacity of 200 TPD and two composting facilities with a combined capacity of 450 TPD. Additionally, the city ensures proper processing of sanitary and domestic hazardous waste through authorised processors. A fully automated 150 TPD plant is dedicated to processing construction and demolition (C&D) waste, while a 30 TPD horticulture waste processing plant supports the city's extensive green spaces, which include nearly 1,900 parks and gardens.

One of the most remarkable achievements in Chandigarh's waste management efforts is the integration of over 900 informal waste collectors into the system through two distinct models—full formalisation and incorporation into the doorstep collection process.

Today, more than 900 informal waste pickers, predominantly women, work alongside collection vehicle operators, assisting in door-to-door waste collection and ensuring segregation at the source. Their role also involves direct interaction with residents, promoting better waste management practices. To secure their livelihoods, the city has formalised this arrangement through a Memorandum of Understanding (MoU) with the waste pickers, ensuring their inclusion and economic stability within the waste management ecosystem.

In another model, an MRF cum transfer station is entirely operated by approximately 40 women who were formerly waste pickers at the dumpsite. Before the remediation process began, these women faced the risk of losing their livelihoods. However, they have now been fully integrated into a structured nine-to-five formal employment system, receiving salaries and benefiting from various social welfare schemes designed for them.

History of transformation

Before 2021–22, the city operated an informal waste collection system where approximately 900 waste pickers gathered dry and recyclable materials from community bins scattered across different neighbourhoods. Despite their efforts, the city remained far from achieving a litter-free and bin-free environment. The ULB had to handle all residual waste, including decomposed organic matter, due to inadequate segregation at the source. This mixed waste was disposed of at the existing dumpsite without proper processing, mainly due to contamination of the collected waste.

The city faced challenges not only in terms of waste segregation but also in citizen awareness, non-operations of the processing plants, and lack of a clear vision for

effective waste management. In 2021, under the leadership of the then Municipal Commissioner, significant steps were taken to transform the waste management landscape. This included strategic allocation of funds, infrastructure development, and integrating the extensive resource of informal waste workers.

A major initiative involved incorporating many waste pickers into a doorstep collection system to enhance and regularise waste collection levels. Collaborating closely with these workers, efforts were made to increase segregation levels and raise public awareness. Additionally, another group of waste pickers, previously earning a livelihood from scavenging at the dumpsite, were offered formal employment with minimum wages and other social benefits. They now operate an MRF, managing everything from security to waste sorting and compaction.

Details about the integration

As outlined earlier, the integration of informal waste pickers in Chandigarh followed two distinct models. The first model involved incorporating existing waste pickers into the doorstep collection system, while maintaining the nature of their work and ensuring minimal disruption to their income levels.

The second model, known as the 'Pink MRF,' represents a structured formalisation of informal waste pickers. Previously, these workers relied on scavenging at dumpsites for their livelihood. However, with the city's dumpsite remediation efforts, their source of income was at risk. Rather than displacing them, the city provided them with stable employment at a nearby MRF cum transfer station. This facility is now entirely managed and operated by an all-women waste picker group.

These women receive a fixed monthly salary of Rs 20,000, along with comprehensive health and social benefits. With stable jobs, they can now send their children to school, access medical care in emergencies, and most importantly, lead a dignified and secure life.

A) Informal waste pickers integrated in door-to-door collection:

As India's first planned city, Chandigarh has a unique demographic composition. Most of its residents settled later, having relocated from various parts of the state and country. The city centre primarily consists of an elite, educated population, with native communities residing on its outskirts. One of the key factors contributing to Chandigarh's success in sustainable solid waste management is the high level of education among its residents, enabling them to understand the importance of waste segregation at the source. Additionally, an intensive

awareness campaign, timely and consistent door-to-door waste collection, and a well-structured collection route plan have significantly enhanced the efficiency of the waste management system.

As part of the broader initiative to revamp the waste management ecosystem, the then commissioner took decisive steps to regularise and strengthen doorstep waste collection services. The ULB identified and enumerated over 900 informal waste pickers, integrating them into the existing system.

The Municipal Corporation of Chandigarh (MCC) entered individual Memorandums of Understanding (MoUs) with each of these waste pickers for a minimum of three years, with the possibility of renewal. Under this arrangement, they were assigned roles alongside reaching every household accompanying the collection vehicles, mobilising residents to hand over segregated waste and collecting it directly from households. They were also granted access to bulk recyclable materials such as cartons and large packing boxes.

These waste pickers are compensated based on the number of households and commercial establishments they serve, with the terms mutually agreed upon to ensure that their earnings remain stable. Typically, one waste picker can cover 300 to 400 households a day. However, they are not permitted to collect user fees directly from citizens, as these payments are routed through the municipal corporation via water bills. Instead, they receive a fixed monthly salary ranging from Rs 16,000 to Rs 20,000 from the corporation with a provision of an yearly increase of five per cent. In addition, they are allowed to sell bulky dry waste collected from households, providing them with an extra source of income. They also benefit from biannual medical check-ups and other health benefits provided by the corporation.

Waste pickers collect waste from door-to-door in Chandigarh

Image credit: CSE

B) Pink MRF:

In 2022, 31-year-old Rita sends her son to private school. She shares household expenses with her husband, and works an eight-to-four shift with respect and dignity in her community. She is known as a worker in the municipal corporation, wearing a uniform and carrying an identity card, ever since Commissioner madam employed them in the 'Pink MRF'. But her story, like that of 40 other women, was very different before. These women used to scavenge waste from the dumpsite at Daddu Majra colony from their childhood, either accompanied by their family members or on their own. They were the waste pickers for generations, unrecognised, underpaid, deprived of bare minimum working and living conditions, earning Rs 300 per day. From 2021–2022, they are the employees of an 80 TPD capacitated Pink MRF's transfer station cum material recovery facility installed at sector 25.

When dumpsite remediation began in 2021, over 40 women waste pickers faced the loss of their only livelihood. Recognising this, the then MCC Commissioner offered them formal employment at the upcoming MRF-cum-transfer station with a monthly salary of Rs 20,000, along with social security and health benefits. This initiative shifted their lives from unsafe, exploitative scavenging to a more secure and dignified livelihood. After accepting the commissioner's proposal, the women signed an agreement with MCC and were formally onboarded. They were provided with full safety gear—gloves, boots, life jackets, and head protection; and were enrolled in two insurance schemes, a Rs 4 lakh accidental death cover and a Rs 2.5 lakh life insurance policy, both with an annual premium of just Rs 20 paid by the corporation. They also receive free health check-ups every six months and access to government medical facilities. Already skilled in waste sorting, they easily adapted to working on conveyor belts at the MRF, where dry waste is being sorted and processed by them.

Table 7: Quantum of waste the pink MRF/transfer station receives in a typical day

Stream of waste	Quantity (Tonnes per day)
Wet waste	48
Dry waste	26
Coconut shell	2
Sanitary waste	½ (~ 540 kilograms)
Total	76.5

Source: Chandigarh Municipal Corporation

These women manage various waste categories at the pink MRF—working on conveyor belts, unloading waste, and sorting dry waste into cardboard, metal, paper, plastics, etc. After the deduction for Employees' State Insurance (ESI) and Employees' Provident Fund (EPF), they receive around Rs 19800 in-hand. For some of these women, this amount is even higher than what their male counterparts earn. They get one casual leave (CL) per month and every Sunday as a day off.

However, unlike the typical integration model characterises, these women do not have the access to the waste they sort in the MRF. The dry waste sorted and accumulated in the MRF is being sold by the MCC to different recyclers with an open auction conducted every first and fourth Wednesdays of the week. At the beginning of the financial year, the city publishes a rate chart in their web portal and to local newspapers, inviting bids from the buyers.

The city took the lead in making the initial capital investment for the 'Pink MRF' by mobilising funds from the Swachh Bharat Mission (SBM) and other sources. However, it is still exploring sustainable pathways to cover its monthly operation and maintenance costs of Rs 15 lakh, which includes the salaries of the women waste pickers. Revenue generation through the sale of dry waste is one of the key strategies under consideration.

Unlike before, when they had flexible working hours and variable incomes, they now follow fixed duty hours, allowing them to spend more time with their families. With a steady salary, they have opened bank accounts where their earnings are directly credited, giving them financial independence and the ability to make household decisions. This stability enables them to provide better education and nutrition for their children, securing a brighter future for their families.

Furthermore, their employment at the 'Pink MRF' has transformed their relationship with the city into that of formal employees, ensuring a dignified and sustainable livelihood. Many of these women have expressed their appreciation for this transition in one-on-one discussions with the research team, highlighting how this structured employment has positively impacted their lives.

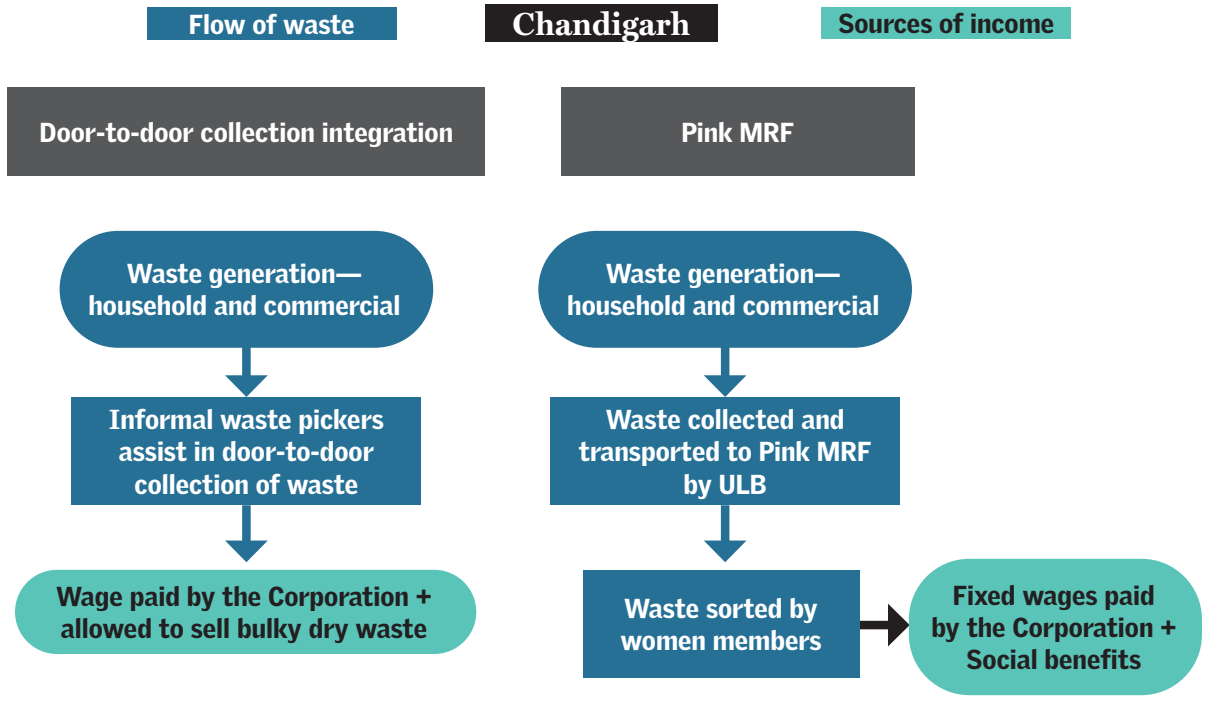
Waste pickers are sorting waste from conveyor belt at Pink MRF in Chandigarh

Image credit: CSE

Replicability and viability for ULBs

The Chandigarh model exemplifies effective integration and formalisation, showcasing how securing waste pickers' livelihoods with dignified roles and linking them to social benefits and job security can lead to their happiness and socio-economic stability. However, losing access to waste and flexible working hours limits their ability to earn extra income and work under conditions of their choice. A detailed comparative analysis between recycling rates when waste pickers have full access and rights to sell recyclables versus after formalisation would provide valuable insights into the model's effectiveness and feasibility. In Indian cities, where waste pickers' contributions to environmental cleanliness and cost-saving in solid waste management are often overlooked, initiatives like these from city administrations are not only commendable but also worthy of emulation.

Figure 8: Waste trail managed by waste pickers in Chandigarh



Source: CSE

3.6 Karad: Model of integration into the integrated solid waste management facility, Maharashtra

Karad, also known as the sugar bowl of Maharashtra, is a small town in the Satara district of Maharashtra. The town has an estimated population of 90,000 and has been constantly ranked among the best-performing ULBs as per the Swacch Survekshan, in terms of waste management under the one lakh population category. The town administration had taken up composting initiatives as early as the 1970s. In 2018, the town achieved 100 per cent source segregation into dry, wet, and domestic hazardous categories. In 2020, segregated collection of sanitary waste was achieved in the town, and Karad Municipal Council achieved 100 per cent processing of the same at zero cost with a unique arrangement with the hospital association. In the same year, the town was awarded the cleanest city in India under the one lakh population category, as per the Swachh Survekshan. The town generates 16 TPD of municipal solid waste.

History of transformation

Since 2016, the Karad municipal council has started awareness campaigns and training programmes with the aim of improving the waste segregation levels of

the city. IEC (information, education, and communication) campaigns on waste management were initiated along with door-to-door monitoring to improve the level of waste segregation awareness. From 2018, dumpsite legacy waste remediation was initiated at a rate of 600 TPD, and within a year, a plot was reclaimed from the site. At the same time, the waste management infrastructure was improved in the city and a new facility was constructed at site to manage through a five TPD MRF for dry waste management, and an eight TPD of composting facility for wet waste management. To bridge the labour gap, 21 former dumpsite waste pickers—17 women and four men—were formally onboarded into the city's solid waste management system.

Details about integration

A concessioner tender was floated to manage the newly constructed infrastructure for dry waste material recovery and wet waste composting. The bidding contractors were instructed by the ULB to provide employment opportunities to these 21 waste pickers. All of them are from the Gosavi caste and reside in Gondi village, about 15 kilometres from the processing site. The waste pickers have no written agreement with the ULBs or the contractor, but they work on the contractor's payroll. Their day-to-day work includes sorting, bailing, and storage of the five tonnes of dry waste into 13 categories to ensure further sale and processing eight tonnes of wet waste at the city composting facility.

Multiple contractors have changed since the facility has been made operational, but the pool of informal workers has remained the same and will continue to be so, considering the ULBs recognise them as an important part of the waste management ecosystem. Today, these integrated waste pickers are earning Rs 16,800. They are entitled to group insurance, and quarterly health checkups are arranged for them and all the sanitary staff of the city by the ULB.

Waste pickers managing wet waste at Karad ISWM plant

Image credit: CSE

Replicability and viability for ULBs

Karad has been an exemplary ULB for its simple and efficient waste management system. The integration of informal waste pickers is also unique considering it is a non-binding agreement between the two parties, the ULB and the waste pickers, based on trust and mutual understanding. The concessionaire has a common contract for a set of activities, covering road sweeping to cleanliness of community toilets. Although the concessionaire certainly can hire new workers for handling the waste, it continues to retain the same group of workers based on their efficiency and the confidence of the ULBs.

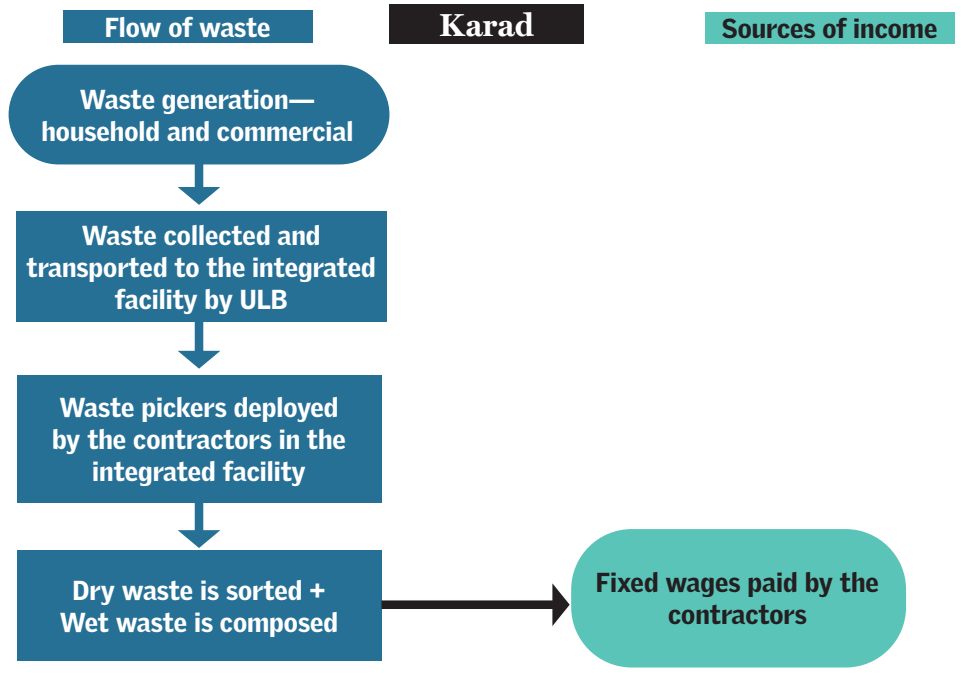
This integration over time saves a lot of time and money for the ULB, as it reduces training costs and enhances work efficiency. The ULBs assure quarterly health checkups, safety and security at the working space, linkage to government schemes such as Ayushman Bharat and Pradhan Mantri Awas Yojana (PMAY). Karad is exploring a shift from service-based tender to an output-based tender for waste collection and transportation; there are plans to hand over the MRF facilities entirely to these trusted workers, giving them full autonomy and access to waste. Other ULBs can certainly learn and adopt similar models where the level of integration is not defined by formalisation, but by a sense of trust.

While Karad sets a strong example of waste picker integration, the model still depends heavily on the goodwill of the private contractor. To strengthen this model and ensure the long-term livelihood security of waste pickers, a direct contractual engagement between the waste pickers and the ULB should be explored. This would legitimise their role within the municipal system, offering them protection, greater stability, and formal recognition. Institutionalising such arrangements can serve as a replicable and rights-based model for other cities.

Waste pickers managing dry waste at Karad ISWM plant

Image credit: CSE

Figure 9: Waste trail managed by waste pickers in Karad



Source: CSE

3.7 Pimpri Chinchwad: Integration drive by waste pickers trade union, Maharashtra

Pimpri Chinchwad, also known as PCMC, is a major city in the Indian state of Maharashtra. It is a satellite city of the historic Pune metropolitan region, and is a major manufacturing hub. PCMC is among the largest satellite towns in the world, and since the inception of Pimpri Chinchwad municipal corporation in 1982, the city has grown exponentially and today it hosts a population of over 3 million. Today, the city generates over 1300 TPD of municipal solid waste. The municipal corporation has appointed concessionaires for the door-to-door segregated collection and transportation of solid waste to the Moshi garbage depot, which holds the centralised waste processing facility, consisting of a waste-to-energy, material recovery, bio-methanation, and windrow composting setup.

History of transformation and details about integration

The history of integration of informality in the Pune region dates back to 1993, with Kagad Kach Patra Kashtakari Panchayat (KKPKP)—India's first union of waste-pickers. In 1995–1996, PCMC became the first corporation in the country to officially register and issue identity cards to the waste-pickers under their jurisdiction. In 1997, the 'Kashtachi Kamai' scrap shop was established with the support of the corporation, which strengthened the informal scrap business.

Since the inception of SWaCH in Pune, the push-cart model of door-to door-collection was also extended to two zones of PCMC. The SWaCH model relied on user fee and the rest of the city had contactors that collected waste from households for free. This created a major challenge and a common user fee-based model for the city was proposed. The municipal corporation argued that the city is more widely spaced out, and providing coverage to all the households was very challenging. Moreover, the city officials too were not in favour of providing a non-motorised collection system and found it very rudimentary. Due to a disagreement with user fee collection and irregular payments of ancillary expenses, the contract had to be terminated with the corporation in 2012.

Right after that, PCMC hired contractors to manage door-to-door collection, segregation, and transportation of solid waste. However, there was no guarantee or provision protecting the employment of the existing waste pickers. Between 2012 and 2015, it was observed that there was blatant violation of the minimum wages act and other rules. The union filed a writ petition at the Bombay High Court, which ruled in favour of the union. Thus, PCMC had to ensure employment of the waste pickers and new contracts were signed, with clauses ensuring the employment of the waste pickers.

Even though the judicial decree guaranteed rights, it was found by the union that the contractors were again violating the minimum wages act. Despite repeated deliberations with the contractors and the corporation, no clarity was received for the gross underpayment. The union filed another case at the labour court, and after a decade long uphill battle of deliberations, the court ruled in favour of the union in 2023 and delivered the arrear amount, compensation, and damages to the affected workers too. The achievement of financial justice for waste pickers stands as a significant triumph, showcasing the pivotal role of KKPKP in securing long-deserved funds for its members. Today, two companies are employing about 300 waste pickers to support daily door-to-door waste collection. While they do not have access to the recyclable waste, they are now guaranteed minimum wages as per state regulations. The waste pickers today earn approximately Rs 20,300 per month.

Waste pickers involved in door-to-door collection

Image credit: CSE

Replicability and viability for ULBs

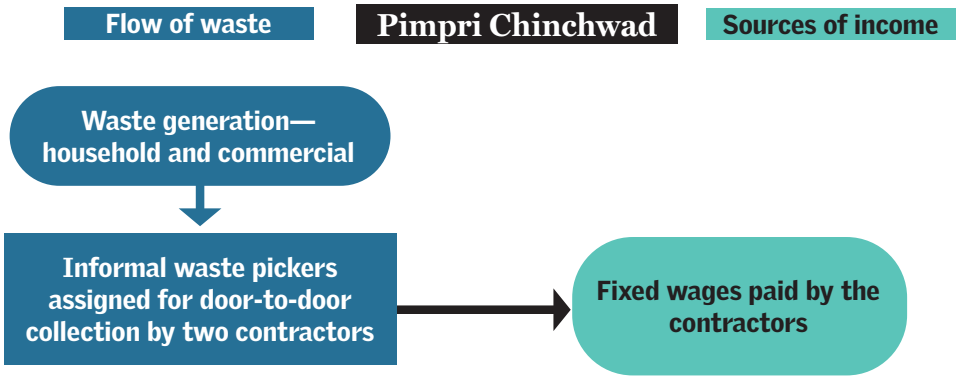
With two large companies having signed a contract with PCMC to manage the entire city's waste till 2027, the role and unity of KKPKP has shaped the waste management landscape of the PCMC. The union acts as a checks-and-balances mechanism for the corporation. In PCMC, while the city has reached a saturation point in offering decent livelihoods to waste pickers, it is the strength of KKPKP's leadership and sustained unionisation that has kept many waste pickers, especially women, at work. Their continued engagement is not a result of formal integration into the municipal system, but rather the protective framework the union has built over time. Despite limited access to waste—most of which is now diverted to a waste-to-energy (WtE) plant—and the lack of social or employment security for aging workers, KKPKP is trying their best to ensure basic rights, access to benefits, and a sense of dignity for its members. This model highlights how unionisation can be a powerful tool for securing justice, livelihood, and recognition for informal waste workers. Other cities grappling with similar challenges can greatly benefit from organising waste pickers into strong collectives or unions, ensuring their voices are heard and their rights are upheld in an increasingly mechanised and privatised waste landscape.

The PCMC model is certainly not ideal but it can act as a promising starting point for cities looking to integrate waste pickers. This model demonstrates the most active role of a union in securing financial justice for the deprived waste pickers. While some level of incorporation into the solid waste management value chain has been achieved, often through private contractors, securing stable employment is only the first step. For the model to be truly inclusive and sustainable, it must evolve to ensure access to social security benefits. Even if direct access to waste is limited, granting waste pickers the authority to collect user fees could provide a critical source of financial stability and reinforce their role in the system.

Waste pickers in a focus group discussion with CSE visiting team in PCMC

Image credit: CSE

Figure 10: Waste trail managed by waste pickers in Pimpri Chinchwad



Source: CSE

3.8 Pune: SWaCH model of integration, Maharashtra

Pune, a rapidly urbanising city in western India and Maharashtra's second-largest urban centre, is known not only for its educational and IT hubs but also for pioneering an inclusive solid waste management (SWM) model that centres on the integration of informal waste pickers. With a population exceeding 3.5 million, the city generates over 2,200 metric tonnes of municipal solid waste daily, composed largely of organic matter, followed by plastics, paper, glass, metals, and increasing amounts of multi-layered plastic packaging. Amid the conventional path of privatisation in urban sanitation, Pune chose a radically different direction by institutionalising the role of informal waste workers as service providers. This decision reshaped the narrative around urban waste, turning it from a liability into a site of environmental recovery and social justice. In doing so, Pune has offered a replicable framework that links waste reduction, climate goals, and livelihoods. Today, through SWaCH, 4000 waste pickers (mostly women from marginalised castes) deliver door-to-door collection services to over 980,000 households, contributing to one of the highest source segregation and recycling rates in the country.

History of transformation

Pune's transition from unregulated informal waste picking to a decentralised, inclusive waste management model began in the early 1990s. Waste pickers, largely unrecognised and working in unsafe conditions, began organising through the formation of a trade union, Kagad Kach Patra Kashtakari Panchayat (KKPKP), in 1993. The union helped unify over 8,000 waste pickers across Pune and Pimpri-Chinchwad region, advocating for their recognition as workers and environmental stewards. KKPKP's early interventions focused on acquiring municipal ID cards, access to public health care, children's education, and social security. Unlike many unions, KKPKP explicitly framed waste picking as legitimate labour contributing to public sanitation and environmental sustainability. It successfully resisted attempts to displace waste pickers with privatised contractors. In 2007, a major leap occurred when KKPKP, with the support of the Pune municipal corporation (PMC), facilitated the formation of SWaCH—India's first wholly waste picker-owned cooperative formally authorised to provide municipal solid waste services. This move institutionalised informal labour in the public service ecosystem through a public-community partnership model that prioritised autonomy, dignity, and livelihood security. Waste pickers, organised under the SWaCH cooperative started waste collection, segregation, recovery of recyclables for sale, and charging user fees directly from households. The cooperative was not merely a service provider but also a tool for empowerment, allowing its members to move from informal scavengers to contractual stakeholders in urban governance.

Details about the integration

The SWaCH model operates on a unique hybrid system that grants waste pickers two essential rights—the right to waste, i.e., ownership over collected recyclables; and the right to charge, i.e., ability to collect user fees directly from households. Each SWaCH member independently serves between 150 and 300 households per day, providing door-to-door collection of segregated waste. Households pay a modest user fee somewhere between Rs 30–Rs 100 per month, though the exact amount depends on property type and agreement. Waste pickers earn approximately Rs17,000 from user fee collection and Rs 3000–5000 per month from the sale of recyclables. Some of the members also earn additional income from composting and occasional sale of MLPs.

In 2023–2024, SWaCH cooperative collected over Rs 20 crores in user fees. The environmental benefits are equally significant; the cooperative recovers over 82,000 tonnes of recyclables each year and diverts over 80 per cent of waste at source. This results in a reduction of CO_2-equivalent greenhouse gas emissions also exceeds the national average recycling rate and rivalling other global benchmarks. SWaCH also manages waste from almost 4,000 bulk waste generators (BWGs) and has extended services to include sanitary waste, MLPs, and e-waste collection. Its decentralised, worker-managed system ensures high segregation compliance over 85 per cent at source and high public satisfaction due to regular, personalised service delivery.

Moreover, the PMC's enabling role is critical. It has formally recognised SWaCH through agreements and provides non-monetary support in the form of job cards, uniforms, ID cards; equipment such as pushcarts; and registration into national schemes like Pradhan Mantri Jivan Bima Yojna (PMJJBY) and Pradhan Mantri Suraksha Bima Yogna (PMSBY) for insurance coverage. However, SWaCH operates without formal leave or pension schemes, and many waste pickers, especially older workers, struggle with deteriorating health and lack of replacement tools. Contract renewals are increasingly delayed and the subtle privatisation efforts by the ULBs make it difficult to carry on the day-to-day operations. The declining role of corporators, once key in legitimising the model at the ward level, further undermines political backing. Despite these systemic challenges, SWaCH continues to function effectively due to its strong organisational backbone, worker ownership, and embeddedness in the local waste economy.

Waste pickers collecting waste from households in Pune

Image credit: CSE

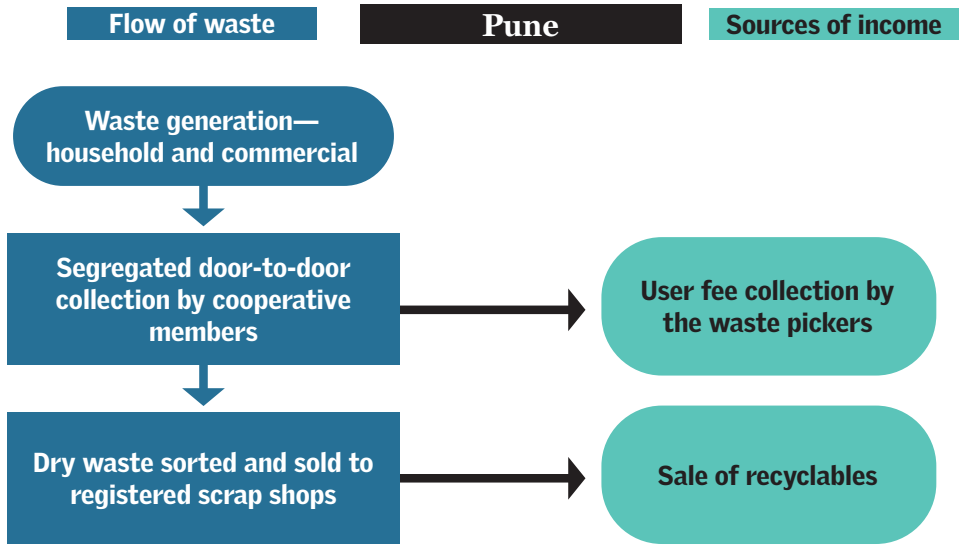
Replicability and viability for ULBs

The Pune model's success lies not merely in its operational efficiency, but in its structural commitment to dignity and equity. The model is easily replicable in other urban contexts, especially in cities with sizable informal waste sectors. The critical elements for replication include legal recognition of waste pickers, integration through cooperatives or collectives rather than private firms, rights over recyclables, and shared financial responsibility through user fees. Unlike conventional models that treat waste as a technical challenge, Pune demonstrates that inclusive governance results in better environmental outcomes and stronger public accountability. SWaCH cooperative provides strong performance indicators higher recycling rates, lower municipal expenditure, and greater user satisfaction which underline the viability of the model, and it has been very well documented. For ULBs, the SWaCH experience underscores the importance of active facilitation. ULBs must not only acknowledge and register waste pickers but also extend social protection, ensure fair procurement practices, and provide micro-infrastructure such as sorting sheds and carts. Incorporating informal workers into waste management also strengthens climate resilience and circular economy goals, making the model relevant under national and international frameworks like Swachh Bharat Mission, smart cities, and the SDGs. Cities like Bengaluru and Indore have experimented with similar approaches but often fall short of Pune's scale, autonomy, and rights-based integration. As ULBs increasingly consider climate-smart infrastructure, Pune's model shows that labour-smart and climate-smart strategies can, and should, coexist. However, long-term success will require institutional safeguards, such as formalisation of worker rights, investment in aging workers, consistent PMC support, agreement renewals, and protection against encroaching privatisation. In summary, SWaCH offers a transformative vision not only for waste governance, but also for inclusive urban development, affirming that solutions to environmental challenges must also address questions of labour, equity, and justice.

Waste pickers in a focus group discussion with CSE visiting team in Pune

Image credit: CSE

Figure 11: Waste trail managed by waste pickers in Pune



Source: CSE

3.9 Shillong: Low cost model of informal integration, Meghalaya

Shillong, the largest city and the capital of Meghalaya, with over five lakh residents, is uniquely placed in terms of city waste management. The Sixth Schedule of the Indian Constitution provides autonomy to certain tribal areas in the northeast region, including Meghalaya, to preserve their customs, land, and governance systems. In Shillong, the Sixth Schedule plays a crucial role in waste management, as local governance is handled by autonomous district councils (ADCs) like the Khasi Hills Autonomous District Council (KHADC). These autonomous districts and smaller tribal councils have the authority to frame laws relating to landownership and municipal services. The autonomous tribal councils in Meghalaya are called Rangbah Shnong. In the Greater Shillong area alone, there are about 106 Rangbah Shnongs or Dorbar Shnong. Though there is synergy between these councils and the Shillong Municipal Board, the latter sometimes face difficulty in providing door-to-door waste collection service due to the extensive coverage area. Shillong municipal board, under its direct jurisdiction, has an area of 10.36 square kilometres, and the cantonment board has an area of six square kilometres. Overall, today the city generates close to 200 TPD of municipal solid waste. There have been good efforts to ensure source segregation, but a large part of the waste is disposed of at the Marten dumpsite.

History of transformation

Since 1938, the Marten dumpsite has been the primary dumpsite for Mawlai, Nongthymmai, Madanryting, Pynthorumkhrah, and Nongmynsong, under the Greater Shillong urban area. The redevelopment of the Marten dumpsite in 2013 by the Asian Development Bank's (ADB) North Eastern Region Capital Cities Development Investment Program (NERCCDIP), included the construction of the dumpsite retaining wall and expansion of the compost plant to 150 TPD. Prior to this redevelopment, dry waste recovery was largely done by informal dumpsite waste pickers.

Details about integration

In 2014, under the direction of the local administration, waste pickers from Marten were brought together and were recognised under the Alliance of Indian Wastepickers (AIW). Some of the experienced waste pickers from the area also travelled to a few places in India and abroad for capacity-building and exposure. During the same period, the first SHG, Iainehskhem, was formed, which helped them get recognition from the Shillong municipal board.

Today, the local administration recognises the work done by 75 registered waste pickers (mostly women) at the Marten dumpsite. As the dumpsite is now cordoned

off for outsiders, all waste pickers have been given identity cards of waste sorters, and their time of entry and exit is recorded at the gate. The identity card issued by the Shillong municipal board also acts as a health card, and they are entitled to free health care services in nearby primary health centres (PHCs).

To facilitate the easy trade of waste, space has been provided for 12 large-scale informal waste aggregators and buyers at the Marten dumpsite. This ensures that the dry waste recoverable collected by the waste pickers can be stored and sold off to waste dealers, removing any transportation costs that they would have incurred otherwise. This arrangement has facilitated an informal market for recovered dry waste at the site.

Shillong city administration has realised the importance of the informal sector in material recovery from the source of generation. The municipal board realised that they are understaffed and are not adequate for reducing the burden of mismanaged waste. They have allowed unrestricted access to about 120 informal workers of Shillong to move alongside the door-to-door waste collection vehicles, so they can sort, collect, and sell any high-value dry waste before it even reaches the dumpsite in Marten. Shillong has also developed two waste recovery centres of five TPD each, and has hired members of SHGs working on waste to manage and operate the facilities. Some of the informal waste pickers have also been encouraged to practice their traditional composting methods at one identified site of the dumpsite.

Based on a focus group discussion with the waste sorters working on the site, they mentioned that on a good day they earn Rs 1000–Rs 1200. The sale of waste at the site makes their work easier, as they do not have to bear the cost of transporting the waste to large distances. The waste pickers mentioned that they like to come to work and meet their fellow waste sorters. Their socio-economic security has improved since they have a surety of continued work and income. They expect government help in improving their housing conditions and ensuring a better quality of life for their children and family.

Waste pickers are retrieving recyclables from Marten dumpsite in Shillong

Image credit: CSE

Waste pickers are tagged along with the waste collection vehicle in Shillong

Image credit: CSE

Replicability and viability for ULBs

Shillong city administration is uniquely placed as the current waste processing infrastructure is largely focused on wet waste management, i.e., city compost from MSW. Though there is no exact figure on how much of dry waste (plastic, paper, glass, etc.) reaches the disposal site due to the influx of tourists, the quantum of dry waste has certainly increased over time.

The municipal board had realised the importance of the informal sector in reducing the burden of waste management. That is why the informal sector was allowed to operate without any interference. This encouragement to work and access to waste has created informal waste businesses in Byrnihat, a small town bordering Assam, that provides feed to recycling units around the Kamrup Metropolitan Area in Guwahati.

The Shillong city integration model is a very cost-effective model and other ULBs could also learn from them. Rather than depending on private players to collect and process the city's dry waste, Shillong's existing informal sector was given access to waste. The municipal board provides them with basic safety gears as per their requirements, and links them with the state and central government welfare schemes.

The model might look rudimentary, as the ULBs are missing out on the possibility of earning revenue from the sale of valuable dry waste, but the environmental benefits outweigh the economic benefits. Most of the dry waste is captured and processed through this informal value chain, where otherwise it would have been disposed of untreated. There is no interference from the city administration in the business of this informal sector; the registered waste picker at Marten earns anywhere between Rs 500 and Rs 1200 per day from the sale of the collected waste. This gives financial autonomy to these individuals and earns them their livelihood.

Some of the waste pickers at the dump site were interviewed, and all of them noted that they were satisfied with the money they earn from the sale of recoverables. They expressed their concern about the fear of losing their livelihood if private players are allowed to operate. They also do not want any other parties at the disposal site, as it is already much cluttered. On a good day, one individual can recover and sell 100 kilograms of dry waste. If more individuals were given access to the waste, their income would reduce. They expressed their expectation from the government to improve their housing conditions and secure a better livelihood for their children.

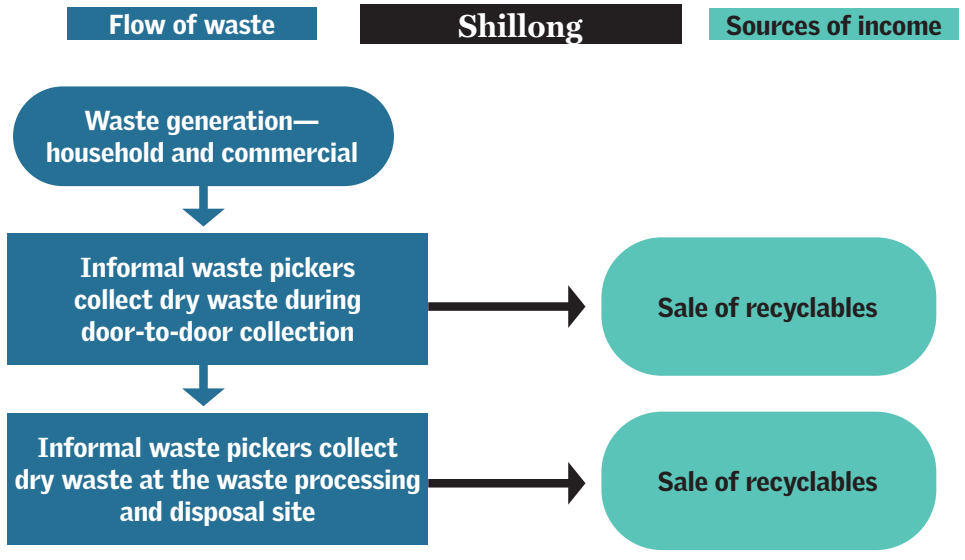
The Shillong model of informal integration can be a viable option for smaller ULBs with a constrained public exchequer. This model incorporates a pre-existing informal waste mechanism in the city's waste management ecosystem. This is not an ideal form of integration, yet this model can be replicated in some of the Indian cities with modifications. Apart from providing access to waste, a comprehensive integration model includes identifying and enumerating all informal waste pickers in the city. It ensures they have adequate facilities such as toilets, washing areas, a working shed, a place to further sort materials and a safe work environment, free from associated risks and hazards. The goal is to create a dignified working environment that supports their livelihood and security. In addition to decent working conditions, waste pickers in these models also seek essential social benefits, like health and accidental insurance, affordable medical check-ups, educational support for their children, assistance with housing improvements, and other benefits such as provident fund contributions and retirement benefits. When waste pickers are not organised into community-based organisations, cooperatives, or unions, they remain vulnerable and lack collective bargaining power. Therefore, cities must take proactive steps to provide these facilities and empower waste pickers to organise and improve their conditions collectively. A thorough enumeration process and enhanced working conditions, coupled with social and health benefits, will make the Shillong integration model highly replicable and beneficial for other cities.

The Shillong model's strength lies in providing access to recyclables for waste pickers, and integrating them into the formal collection system. Beyond the informal waste pickers, the model also includes formalising recyclers by allowing them to directly purchase valuable materials from waste pickers at dumpsites. This unique approach sets the Shillong model apart. Looking ahead, the city plans to further formalise the entire value chain by establishing a recycling plant at the dumpsite, aiming to enhance sustainability and efficiency in waste management.

Group of waste pickers at the site office of Marten dumpsite with the CSE visiting team in Shillong

Image credit: CSE

Figure 12: Waste trail managed by waste pickers in Shillong



Source: CSE

3.10 Thiruvananthapuram: HKS model of dry waste management, Kerala

Thiruvananthapuram municipal corporation (TMC), Kerala's oldest and largest city corporation, evolved from a municipality in 1920 to a corporation in 1940. Governing Kerala's capital under the Kerala Municipalities Act 1994, TMC oversees 214.86 km⁎ with 9,57,730 residents across 100 wards. The corporation recently earned recognition for its zero-waste and green initiatives at the International Zero Waste Cities Conference in Malaysia.

History of transformation

Before 2011, TMC's waste management system was severely inadequate, operating on a basic collect-and-dump model without any emphasis on waste segregation or resource recovery. The city relied on the Vilappilsala treatment plant for waste disposal until public protests and a Supreme Court ruling forced its closure. The plant's shutdown created a significant crisis in waste collection, resulting in widespread illegal dumping across the city's streets. A new dumpsite was established in the heart of the city at Attakulangara, but it lacked proper scientific infrastructure for managing leachate or landfill gases. This central dumpsite quickly exceeded its capacity, with waste overflowing and emanating foul odours that severely impacted nearby residents.

Faced with these challenges, TMC initiated a strategic shift toward decentralised waste management. The municipality began exploring various composting techniques and launched a comprehensive awareness campaign focused on proper waste segregation. They introduced a systematic waste collection programme and established multiple mini MRFs throughout the city, under the "My Waste, My Responsibility" initiative, emphasising individual accountability in waste management. The new approach marked a significant departure from the previous centralised system, encouraging citizens to take an active role in waste segregation and proper disposal. The mini MRFs proved particularly effective, providing convenient drop-off points for residents to dispose of their waste responsibly. This transformation represented a fundamental shift in TMC's waste management strategy, moving from a crisis-ridden, centralised system to a more sustainable decentralised community-oriented approach that prioritised proper waste handling and environmental responsibility.

Details of integration

Kerala has adopted a unique, bottom-up approach to waste management, with significant authority vested in local self-government departments (LSDGs) and ULBs. The Thiruvananthapuram municipal corporation (TMC) manages waste

through its health department, employing two distinct worker categories—sanitation workers for general city cleanliness; and aerobic bin unit workers who handle ward-level operations, particularly focusing on wet waste management and coordination with authorised agencies.

A significant innovation in Kerala's waste management strategy was the establishment of the Haritha Karma Sena (HKS) in 2017, which operates under the Kudumbashree programme, which is a flagship poverty eradication and women empowerment initiative. Today, the Haritha Kerala Mission under their garbage-free campaign employs 1,163 members across 100 wards in TMC. It was designed to integrate SHGs and informal sector workers into the formally structured waste management system.

HKS members carry out clearly defined responsibilities, with each member serving approximately 250 households and establishments. Their work involves collecting and segregating non-biodegradable waste into various categories, including different types of plastics, metals, glass, and e-waste. The processed materials, such as shredded plastic, are then channelled through the Clean Kerala Company or other approved agencies, primarily for recycling and use of low value plastics for road construction.

HKS members, who were largely informal, earn income through user fee collection, waste sales, and additional services such as kitchen gardening consultation and waste segregation training. While LSGDs set the user fees and HKS teams are responsible for collection, the LSGDs provide gap funding when necessary.

HKS members' roles extend beyond basic waste management to include broader environmental initiatives. To ensure high-quality service delivery, members undergo an intensive three-day residential training programme, covering various aspects of personal and professional development, led by expert faculty from different fields. In a parallel development, the TMC has worked in registering over 300 scrap dealers and aggregators. This integration of existing operators into the waste management ecosystem allows the city to leverage established infrastructure and networks for handling recyclable materials, creating a more comprehensive and efficient waste management system.

HKS members collecting dry waste from doorstep

Image credit: CSE

Replicability and viability for ULBs

The Haritha Karma Sena (HKS) model has been successfully implemented across Kerala's local government bodies, with TMC emerging as a standout example. The TMC has effectively integrated women community members through Kudumbashree, establishing its presence in all 100 municipal wards over the past two years.

The model is cost-effective and meant to be self-sustaining. The daily task of the HKS member groups is to collect segregated plastic waste from the households daily; other non-bio-degradable waste according to the calendar; waste paper and plastic once a month; medicine strips, toothpaste, toiletry tubes and covers every two months; broken glass every three months; e-waste every six months; and leather products once a year. They sell the collected waste to Clean Kerala Company or Haritha Sahaya Sthapanam every month. The collected waste is then brought to mini MRFs, where secondary sorting takes place before the sale. The HKS MEs collect user fees at different rates—Rs 100 per month from households, Rs 200 from small vendors and street shops, Rs 250 from commercial establishments, and Rs 400 from large establishments, like supermarkets and textile shops. For bulk waste generators (BWGs), the fee is calculated at Rs 5 per kilogram.

The goal is for each HKS member to earn a minimum of Rs 10,000 per month for their work, as fixed by the ULBs. If an HKS group is unable to generate sufficient income to cover their expenses, the respective LSGDs or ULBs provide gap funding through the HKS consortiums.

The monthly earnings of HKS members typically range between Rs 15,000 and Rs 25,000, with a guaranteed minimum wage of Rs 10,000 as specified in the official circular. In October 2024, the HKS consortiums collectively generated Rs 2.55 crores through dry waste sales and user fee collections, which aligns with their usual monthly revenue of two to three crores. The gap funding required for its operations does not come from the personal savings of the members, but is arranged through external sources, such as support from Kudumbashree mission, local self-government institutions, government schemes, and CSR funds. This provides HKS consortium financial stability and acts as an impetus to significantly enhance the quality of life for the women participating in the programme.

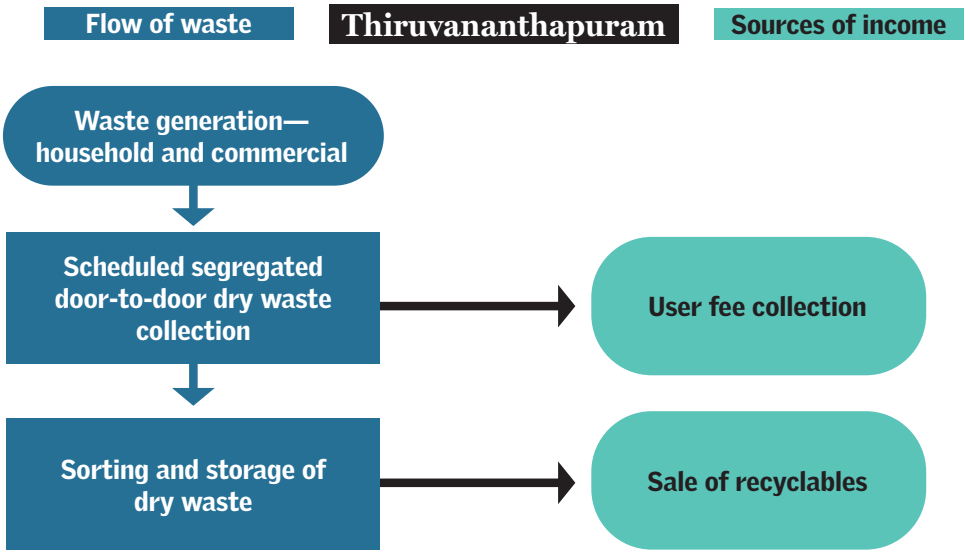
The success of this model lies in its community-based approach, financial sustainability, and empowerment of the informal sector and women through leadership roles. The comprehensive nature of the HKS activities, from waste collection to processing and marketing, ensures a holistic waste management solution.

This model serves as a strong example for other ULBs seeking low-cost, effective, and community-driven waste management solutions that also create livelihood opportunities. The involvement of HKS consortiums help overcome the challenges faced by individual entrepreneurs by bringing their issues to the notice of authorities, enhancing the model's scalability and overall impact. The state government is promoting it as an employment model for the urban poor. However, while these initiatives are encouraging, they do not necessarily offer waste pickers a significantly improved means of livelihood.

Dry waste collection and aggregation by the HKS members

Image credit: CSE

Figure 13: Waste trail managed by waste pickers in Thiruvananthapuram



Source: CSE

3.11 Common analysis of the case studies

Different models of integration and formalisation of informal waste workers presented above have been analysed below from the lens of seven key characteristics (see *Table 8*). These include enumeration and mapping, provision of occupational ID cards, integration into the waste value chain, having a signed agreement between the waste pickers and the city with or without the cooperative/CSO/trade union, access to recyclables and market rights, linkage to social and health schemes, and the nature of their relationship with the city administration. The evaluation focuses on how city governments perceive and act upon these aspects. Notably, the SWaCH model in Pune stands out for its tripartite structure involving the municipal corporation and a waste picker-run cooperative, offering access to waste, social benefits, and flexible work arrangements without a formal employer-employee relationship.

The following table (see *Table 8*) provides an overview of how different models perform across these parameters. While no inclusion model is without flaws or gaps, they highlight the efforts made by ULBs to include waste pickers into the broader waste management ecosystem.

Table 8: Common analysis of the case studies around seven parameters

Cities/Models	Enumeration and mapping	Registration and job card availability	Incorporated into city's waste management services	Access to waste	Access to social benefit schemes	Employer-employee engagement mode (Formalisation)	MoU between parties (ULB and waste pickers)
Ambikapur	■	■	■	■	■		
Aurangabad						■	■
Bengaluru	■	■	■	■	■		■
Bhubaneswar			■		■	■	
Chandigarh	■	■	■		■	■	■
Karad		■	■			■	
Pimpri Chinchwad	■	■	■		■	■	
Pune	■	■	■	■	■		■
Shillong			■	■	■		
Thiruvananthapuram	■	■	■	■	■	■	

Source: CSE

FROM CRISIS TO OPPORTUNITY: RETHINKING INTEGRATION AND FORMALISATION

This chapter examines the effect of privatisation on the livelihoods and roles of informal waste pickers.

It identifies key barriers and challenges that urban local bodies (ULBs) face in integrating waste pickers into formal systems.

It assesses the Solid Waste Management Rules, 2016 and the upcoming 2025 Rules, exploring whether they offer assurance or raise concerns.

The potential of Extended Producer Responsibility (EPR) frameworks and the NAMASTE scheme as opportunities for inclusive integration have also been explored in this chapter.

4.1 Impact of privatisation

The whole agenda of the crisis in the livelihoods of informal waste pickers revolves around the concept of 'dispossession', to borrow from Karl Marx, where the producers are divorced from the means of production. The survival threat informal waste workers are continuously facing, with the privatisation of government services and solid waste management system, is no exception to this idea.

The informality of their job, the denial of access to the waste accumulation sites, and the structural changes in the waste chain have taken a toll on the whole informal waste workers' fraternity. Women are the most affected members in this sector, as predominantly extracting value from the waste is still a women-centric job.

The utopian ideology of neoliberal economy and liberalising of the urban entails the intervention of the private players in every essential service that the state is supposed to provide its citizens, and waste management is one of the primary services of that lot.

As a result, a coercive interference of the government has been observed with the deployment of the 'formal', private big shots in the name of efficient solid waste management. A parallel pool of informal waste workers—who have been conventionally fetching value from the waste for their livelihood and significantly contributing towards a cleaner and greener environment with minimal cost—has totally disappeared from the waste management system. Their presence is notably absent from the high-valued, long-term agreements inked between the state (here cities) and large private companies.

These big facilities from the big companies seek high capital expenditure (capex) and operational (opex) investments by cities. They borrow fancy, automated, energy-intensive technologies, with a substantial quantity of carbon footprint, and zero or very low rate of recovery, which poses a fundamental question of economic viability in the waste management value chain. Studies say that at least one per cent of a city's population comprises the informal workforce, out of which Delhi itself had 1.5 to 2 lakhs informal waste workers; mega cities like Mumbai, Kolkata, and Bengaluru had on an average 30 thousand waste workers even a decade ago.

Despite the numbers and noteworthy existence, the informal waste workers face the constant threat of 'legitimising' their labour and finding a 'formal' space for themselves in the waste chain, competing with private players, backed by the privatisation gimmick introduced by public authorities.

Waste pickers struggling for sorting space in Delhi

Image credit: CSE

4.1.1 Role of informal waste pickers in combating the current challenges of waste management in India

The composition of waste in India is increasingly shifting towards dry waste, predominantly plastics, reflecting global consumer trends. Previously, organic waste accounted for 50–60 per cent of waste, managed traditionally within households. Today, in cities like Gurugram, only 42 per cent is organic, with the remainder being dry waste, mainly plastics. Annually, about eight million tonnes of plastic ends up in oceans worldwide. Cities urgently seek sustainable solutions.

India, like other developing nations, relies on an informal waste sector that scavenges and recycles, supporting livelihoods and contributing significantly—recycling approximately 20 per cent of generated waste. Integrating these two million waste pickers into formal waste management could enhance source segregation, resource recovery, and recycling rates, reducing collection costs and landfill use.

Despite their higher recycling efficiency compared to private entities, few cities have integrated waste pickers into formal systems. These workers excel in source segregation, maintain resilient networks as demonstrated during the pandemic, and operate with minimal environmental impact, low emissions, no carbon footprint, and negligible operational costs.

Unlike large, centralised MRFs, which are costly and energy-intensive, waste pickers prioritise material recovery over profit. Private entities focus on profitability, often with city-funded facilities and restricted access for waste pickers. Even when employed, waste pickers may have limited roles and inadequate wages.

ULBs invest in capital expenditures and tipping fees but often recover minimal revenue due to waste contamination. Rejects are sent to landfills, and high transportation burdens for refuse-derived fuel (RDF) add to costs, as seen in Indore where RDF accounts for a major portion of waste.

It is crucial now to implement guidelines, such as those in Swachh Bharat Mission 2.0, to integrate waste pickers into the waste management value chain. Steps include enumeration, registration, organising through cooperatives or SHGs, providing job security, access to waste, training in segregation and advanced processing, safe working conditions, health benefits, and the freedom to sell recyclables.

Cities and policymakers need to reconsider agreements with private entities to accommodate waste pickers' roles in extended producer responsibility (EPR) and

recycling. Their expertise in source segregation ensures cleaner recyclables, vital for efficient waste management and environmental protection.

4.1.2. Impact of privatisation on waste pickers in Delhi

The privatisation of municipal solid waste (MSW) management had far-reaching consequences across India, but it's most severe impact is starkly visible in Delhi. In Delhi, MSW is handled through both formal and informal systems, with waste pickers playing a crucial role in the latter. Until the mid-2000s, the Municipal Corporation of Delhi (MCD) primarily managed the city's waste. Despite numerous challenges, waste pickers significantly contributed to waste collection, segregation, and its integration into the recycling chain, ensuring both environmental benefits and their own livelihoods. However, over the past 15 years, private sector involvement in waste management has steadily increased, profoundly affecting the role and livelihood of waste pickers.

An interaction with MCD official reveals that the privatisation of MSW management in Delhi began in the mid-2000s and progressed through distinct phases. The city eventually integrated outsourcing waste transportation to disposal sites and the privatisation of door-to-door waste collection, despite their introduction at different times.

In each MCD zone, a single private company now handles both door-to-door collection and waste transportation to WtE plants or disposal sites. Currently, Delhi is experiencing an advanced stage of privatisation in the waste sector, with the closure or restructuring of traditional transfer stations (Dhalaos) into fixed compactor transfer stations (FCTS), MRFs, or other waste management infrastructure.

Privatisation of MSW management in Delhi has severely impacted informal waste pickers, leading to loss of livelihood, restricted access to waste, and increased financial and social hardships. While private companies have taken over door-to-door collection, over 50 per cent of this work is still carried out by waste pickers, highlighting their continued role in the system. The closure and restructuring of 'dhalaos' into FCTS, MRFs, and other facilities have further marginalised them by limiting their access to recyclables. Private companies prohibit independent waste pickers from entering FCTS, forcing them to travel longer distances and make multiple trips, increasing their physical workload and reducing productivity. Additionally, some FCTS supervisors charge waste pickers to dump non-recyclable waste, exacerbating their financial struggles. These challenges, combined with

declining income and rising work stress, have negatively affected their personal and family lives. Despite provisions in MSW Rules 2016, the MCD has largely overlooked this, systematically dispossessing waste pickers of their traditional roles.

Financial implications of privatisation of MSW management in Delhi

Field visits in Delhi reveal that the city pays a tipping fee of Rs 1,700–Rs 2,000 per tonne to seven private entities managing waste collection, transportation (C&T), and FCTS. These companies, which also oversee FCTS, formerly dhalaos used by informal waste pickers, receive monthly price adjustments based on the fuel burnt. Additionally, the city pays tipping fees to WtE plants, bringing the total monthly expenditure to Rs 66 crores and an annual cost of Rs 792 crores for door-to-door collection, transportation, temporary storage, and final disposal. Furthermore, the city has leased land to WtE plants at a nominal rate.

Bare minimum requirements of the waste pickers in the face of privatisation

Informal waste pickers, long deprived of basic amenities like water, sanitation, healthcare, and fair wages, now face a greater survival crisis in Delhi and other cities. Their demands are clear:

- Unrestricted access to waste.
- Space for segregation, not merely sorting, because almost all the waste in Delhi comes in a mixed manner.
- Freedom from police, waste management supervisors, and local extortion.
- Job identity cards signed by ULB commissioners for legitimacy.
- Dignified working conditions with basic amenities.
- Right to sell recyclables in the open market.
- Secure housing without eviction threats.
- Health and safety protections.

4.2 Why do ULBs find it difficult to integrate: Barriers and Challenges

Despite legal provisions of integrating informal waste sectors, only a handful of cities could integrate them. Except for a couple of them, there is no documentation available of those practices existing in this domain to assess exactly how many cities have carried out such integration. In the absence of clarity in the SWM Rules, 2016 (or in the corresponding bye-laws) regarding the methods of integration, there are a few commonalities across the models this research team has captured. During intensive field visits conducted for this study, the research team identified

CASE STUDY 1: NEW SEEMAPURI

30-year-old Nazma migrated from Medinipur, West Bengal, to New Seemapuri, Delhi, 15 years ago. She, like many others, collects mixed waste from households in Brij Vihar. Earlier, waste pickers had dhalaos (community bins) where they could sort and store recyclables, but since waste management was handed over to private companies, their livelihoods have been threatened. Nazma, Rojina, Taslima, Zarina, and nearly 500 waste pickers in the area now struggle to access waste.

To survive, many are forced to bribe private company employees or MCD workers, paying Rs 5,000–Rs 10,000 per month, for a place to segregate waste or for MCD vehicles to pause briefly so they can retrieve recyclables. Those who manage to segregate near their homes face another challenge with waste disposal. MCD prohibits open dumping, and sanitary staff often fine them around Rs 1,000–Rs 3,000. They also endure harassment from police, who sometimes seize their collected waste, further pushing them into financial distress.

Delhi's waste pickers navigate the harsh impact of privatization on their livelihoods and communities

Image credit: CSE

CASE STUDY 2: GAZIPUR DAIRY FARM BASTI NUMBER 7

Tanzila, a 32-year-old waste picker, has lived in a six-by-six feet room in Gazipur Dairy Farm Basti Number 7 for the past ten years with her husband, an e-rickshaw driver, and their three children who attend a local school. She works at the Gazipur landfill near her place, picking waste from 4 PM in the evening to 6 AM the next morning, about 14 hours every day. She collects plastic bottles, tin, iron, etc from the landfill, then stores them into a nearby space provided by the local scrap dealer. After aggregating a substantial amount of waste, she sells it to the same scrap dealer. She earns Rs 5000 to Rs 8000 per month.

Tamanna is a widow, raising two kids, living in the same slum for 18 years. Like Tanzila, she is also a waste picker at the landfill. Her and over 1000 more waste pickers go to the Gazipur landfill for waste picking in the night.

The slum has no individual toilet, drinking water sources, or sewerage system. They get access to a few common toilets, built for around 3000 people across 550 households in that slum. They fetch water from a mobile water supply van, which visits their slum infrequently.

Tanzila notes that ever since the 'power plant' (the waste-to-energy plant established in Gazipur landfill) is operational, fresh saleable waste is coming in lesser amount. They are unable to recover as much waste as they used to get earlier. Even if fresh waste comes, the "monstrous machine" tends to burn everything, and their livelihood is at stake. They are deprived of basic amenities like sanitation, drinking water, or hygiene and now they are afraid of losing the only means of earning they have left.

As Delhi privatises its waste management system, waste pickers pay the price

Image credit: CSE

several key barriers faced by ULBs in integrating the informal waste sector. The following factors were found to be particularly noteworthy:

• Lack of clarity in mandates

The Solid Waste Management Rules, 2016 formally recognise waste pickers, assigning specific responsibilities to various governance bodies. Urban development departments are tasked with creating policies that acknowledge the informal sector's role, while local bodies and village panchayats are expected to identify and integrate waste pickers into formal systems through mechanisms like issuing ID cards, forming SHGs, involving them in door-to-door collection, and MRF operations. However, the absence of mandatory language and lack of a comprehensive national guideline has led to weak and inconsistent implementation, with most successful integration efforts driven by waste picker organisations, rather than state-led initiatives, resulting in cities largely neglecting these responsibilities.

The Draft SWM Rules, 2024 offer a glimmer of promise for the integration of informal waste workers by introducing new institutional roles and mechanisms like centralised databases and involvement of key ministries. However, in the absence of a clear, comprehensive guideline outlining concrete steps for identification, registration, integration, and social security of waste pickers; the Rules risk being diluted in implementation, just like their 2016 predecessor. Without this guiding framework, cities may once again fail to take meaningful action and leave the informal sector marginalised, despite policy intentions.

• Complicated process and delayed implementation of policies and schemes

The National Action for Mechanized Sanitation Ecosystem (NAMASTE) scheme presents a critical opportunity to formalise and empower waste pickers by enhancing their livelihoods, ensuring occupational safety, and integrating them into formal solid waste management systems, thereby supporting the mandates of the Solid Waste Management Rules, 2016. It allows ULBs to leverage the vital contributions of waste pickers in waste segregation, recycling, and resource recovery; while promoting inclusive and sustainable practices. However, since its inception, NAMASTE has made limited progress due to its lengthy and complex implementation process, bureaucratic hurdles, and a lack of clarity among ULBs regarding execution pathways, leaving its potential largely unrealised.

• Lack of standardised identification and enumeration processes

The absence of a nationalised guideline outlining clear steps for integrating informal waste workers has resulted in a critical gap in reliable, centralised data—even at the city level. There is no consistent or standardised methodology for identifying and enumerating waste pickers, and most ULBs have yet to prepare a comprehensive inventory of those engaged in informal waste work. This lack of structured processes and dependable data severely hampers meaningful integration, even when there is genuine intent from city authorities to do so.

• Volatility and unpredictable availability of waste pickers

Waste pickers operating independently often face significant instability in their livelihoods. They frequently move between cities, states, or different areas within the same city in search of better earnings. This constant migration is driven by the need to escape harassment and the constant fear of losing their means of income. This unpredictability in their location makes it difficult to implement sustainable plans for their welfare, as their availability is ever-changing.

• Fear of losing flexibility and independence in earning patterns

As discussed in Chapter 2, waste pickers fear losing the flexibility they have with their working hours and autonomy while collecting waste in the city. Despite facing health and safety risks, they prefer working independently and earning cash daily. This makes it difficult for them to transition to a formal system with fixed working hours and a monthly wage paid into a bank account. Additionally, as noted in Chapter 3, formalisation often means losing access to recyclables, which reduces their chances of earning extra money. Thus, convincing waste pickers to join an employer-employee system is challenging. Due to the privatisation of waste management, some waste pickers are finding it more sustainable to join the city's SWM workforce, either in collection, transportation, or working at MRFs or transfer stations. Others are seeking jobs from large concessionaires controlling the city's SWM services.

• Lack of collective bargaining, unions, and associations

In the city, waste pickers often view each other as competitors, as they all struggle to secure as many recyclables as possible. Without being unionised, it is difficult for them to unite for a common cause and negotiate collectively with the city administration for their rights and demands. To strengthen their position, a

collaborative struggle for their rights is needed, backed by policy mandates. This would ensure they have a recognised place within the waste management ecosystem.

• Lack of political and administrative will at all levels

In many cases, informal waste workers, particularly waste pickers, migrate from different cities or states to find work. For example, waste pickers in Delhi often come from districts like Nadia, Krishnanagar, Medinipur, and Murshidabad in West Bengal, or from Bihar. Similarly, waste pickers in Bengaluru mainly migrate from Assam and West Bengal. These migrant workers often do not have valid documents to register as voters in the constituencies where they work. As a result, they fail to attract the attention or interest of political leaders and remain marginalised, discriminated against, and deprived.

• Lack of capacity among administrative officers to address the informal sector

Many administrative officers in municipal corporations are not trained to engage with informal waste workers. They lack awareness of the workers' needs and their crucial role in the waste management system. As a result, these officers often feel uncomfortable working with informal waste workers and are reluctant to integrate them into the formal system. There is a significant gap in capacity building and training for civil servants on how to effectively address the informal sector's challenges and needs.

• Over-dependence on private players

Over-reliance on private service providers by ULBs is increasingly sidelining the role of informal waste workers and restricting their livelihood opportunities. As ULBs outsource key functions like collection, transportation, and processing to large private companies, waste pickers are excluded from core waste management activities where they traditionally played a crucial role. This model not only reduces avenues for their formal integration, but also threatens their earnings and dignity. Further compounding the issue, central ministries are promoting capital-intensive, centralised waste management solutions, such as waste-to-energy and large-scale material recovery facilities, that are typically contracted to private

players. These trends shift focus away from decentralised, inclusive systems and undermine efforts to recognise and integrate informal workers as mandated under the SWM Rules, 2016.

- **Opposition from formal workers' unions**

In many cities, there is already a workforce of sanitation workers involved in tasks such as door-to-door collection and road sweeping. These workers have established unions and hold significant political influence in urban local bodies. When efforts are made to integrate waste pickers into the waste management system, these unions often resist the change. They may go on strike or threaten non-cooperation, making it difficult for administrative or political leaders with a vision to implement the integration process. For instance, in cities like Jalandhar and Mathura, such efforts have faced strong opposition, leading to the failure of the entire initiative.

4.2.1 JALANDHAR'S MISSED OPPORTUNITY: CHALLENGES OF INTEGRATION FACED BY THE CITY, PUNJAB

Jalandhar, the third-largest city in Punjab, has a population of 1.2 million and generates approximately 600 tonnes of waste daily. About 50 per cent of this waste is wet, while the rest consists of dry waste, recyclables, horticultural, and inert materials.

Waste collection in the city is largely managed by an informal workforce of about 1,000 waste pickers, serving nearly two lakh households and 50,000 commercial establishments. Predominantly second-generation migrants from Bengal, Bihar, and Tamil Nadu, they collect waste directly from homes. Their earnings vary by location, with households in affluent areas paying Rs 100–Rs 300 per month, while those in other zones pay Rs 30–Rs 100, as per municipal bye-laws. However, many residents mistakenly believe these workers are part of the formal municipal system, leading to reluctance in paying user fees. Instead, they offer a nominal Rs 30 per month out of goodwill rather than recognising their labour. Despite these challenges, waste pickers sustain themselves by selling recyclables in the informal market, earning between Rs 6,000 and Rs 20,000 per month.

The waste is deposited at 30 secondary collection points before being transported to the Wariana dumpsite. Recognising the crucial role of waste pickers, the municipal corporation has attempted to integrate them into the formal waste management system. Key initiatives include:

- **E-Shram cards:** The e-Shram portal is a national database for unorganised workers, providing them access to social security and welfare schemes. Informal waste workers who register can benefit from pension schemes like Pradhan Mantri Shram Yogi Maandhan (PM-SYM is a government pension scheme for unorganised sector workers, offering a monthly pension of Rs 3,000 after the age of 60, with contributions made during the working years), accident insurance under Pradhan Mantri Suraksha Bima Yojana (PMSBY provides overage of Rs 2 lakhs for accidental death or full disability and Rs 1 lakh for partial disability, at a nominal annual premium) and life insurance under Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), healthcare through Ayushman Bharat, skill development via the Skill India Digital portal, and job opportunities through the National Career Service (NCS). Additionally, registered workers can track and avail multiple government schemes in one place, ensuring better financial security and social protection. Dedicated camps at the main corporation office and secondary collection points have facilitated the

Waste pickers in a focus group discussion with CSE team in Jalandhar

Image credit: CSE

registration of waste pickers for e-Shram cards. Around 300 waste pickers have been covered under this initiative so far.

- **Provision of PPE kits:** Safety gear like masks and gloves have been distributed to all the identified waste pickers to enhance occupational safety.

- **Fleet modernisation:** About 50 waste pickers were given electric vehicles for primary waste collection, with 50 more planned, along with 110 CNG-powered vehicles. This measure has notably fuelled their collection process to some extent; however, waste pickers are yet to learn to drive them safely.

- **Training programmes:** Around 150 waste pickers and sanitation workers from the health and sanitation department have received training from external organisations invited by the city administration. A six-month pilot project for the integration of informal waste pickers is also proposed.

- **City livelihood centre:** The city livelihood centre (CLC), established under the National Urban Livelihood Mission (NULM), functions as an employment agency, connecting workers with job opportunities and providing social security benefits. Governed by ex-officio municipal members with the Mayor as President, the CLC can directly engage informal waste pickers and urban poor in solid waste management (SWM) services like door-to-door collection and facility maintenance, bypassing traditional tendering processes. Founded for waste pickers in Jalandhar, the CLC can offer formal job contracts, fair wages, and social

security benefits, helping them transition from informal work to structured employment. Additionally, it can serve as a marketplace for waste-based recycled products, enhancing income opportunities. The Jalandhar Municipal Corporation's role is crucial in operationalising the CLC by facilitating contracts, integrating waste pickers into the SWM system, and ensuring their access to welfare schemes, ultimately improving livelihoods and urban sanitation. However, its full implementation faces resistance from sanitation unions.

- **Drafting of new bye-laws:** Jalandhar municipal corporation while revising the municipal bye-laws, has drafted regulations to safeguard the welfare of waste pickers while strengthening the overall solid waste management framework. It emphasised recognising their role in primary waste collection. They also promote incentives for decentralised wet waste management, strict penalties for non-compliance, and the creation of model wards and zero-waste campuses. The bye-laws have received approval from the local government department, and the notification process is underway, expected by the end of 2025. Once implemented, these provisions will formally recognise waste pickers roles, improve job security, and provide better access to social welfare schemes, strengthening their livelihoods within the city's waste management system.

Major challenges faced by the city

Despite these efforts, challenges persist in Jalandhar, when it comes to achieving the integration of informal waste workers, which is a common barrier for the majority of Indian cities. Some of the challenges are mentioned below:

- Lack of ground-level organisations supporting waste pickers. There is a fear of resistance from various Safai Karmis and community unions.
- Weak implementation of National Urban Livelihood Mission (NULM), making it difficult to form and sustain SHGs for waste pickers.
- National Action for Mechanized Sanitation Ecosystem (NAMASTE) scheme's slow progress due to complex procedural steps, including elaborate surveys, multiple approvals, and delayed e-KYC verification, making it take over a year to provide benefits like Ayushman cards and PPE kits.
- Lack of municipal coordination, understaffing, and administrative delays hindering systematic integration.
- Union-related conflicts within the municipal corporation blocking formal contracts for waste pickers.
- No dedicated technical support or monitoring mechanisms, leading to ad-hoc interventions rather than sustained efforts.

These challenges are not unique to Jalandhar; many cities face similar structural barriers, preventing the systematic inclusion of informal waste pickers into municipal waste management frameworks.

4.3 Extended producer responsibility (EPR) and informal waste pickers: Proposed pathway

India has established a robust extended producer responsibility (EPR) mechanism, encompassing waste tyre, used oil, battery waste, e-waste, and plastic packaging waste. By the end of 2025, EPR is also expected to extend to paper, metal, glass, and sanitary waste. Despite these advancements, several challenges hinder the effectiveness of the system, particularly the exclusion of the entire informal waste sector.

Plastic waste constitutes a significant portion of municipal solid waste. However, the current EPR policy for plastic packaging does not acknowledge the informal waste sector, including waste pickers, despite the Union Framework Committee, 2020 for EPR explicitly emphasising on their inclusion. The union prescribed EPR models aimed at integrating all stakeholders, improving working conditions, and incomes within the informal sector. However, the adopted plastic credit-based model operates through certificate transfers from plastic waste processors (PWPs) to producers, importers, and brand owners (PIBOs). The PIBOs declare the amount of plastic packaging waste they have introduced in the market in a year, and the EPR rules mandates them to fulfil their graded predetermined targets by purchasing certificates from registered PWPs. The entire certificate exchange process is completed with minimal engagement of other stakeholders.

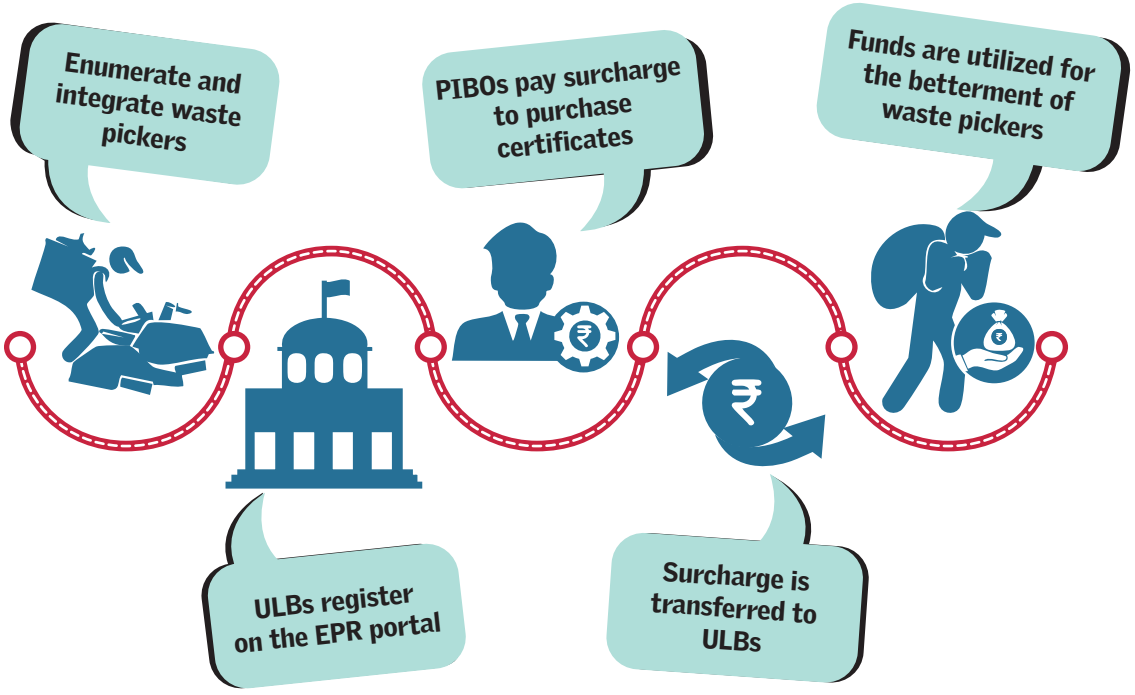
Currently, only a handful of ULBs are registered on the plastic packaging EPR portal. Registration enables ULBs to function as PWPs directly, or most likely enter business agreements with operational PWPs within their jurisdiction. However, additional incentives are necessary to encourage participation. Incorporating registration scores into Swachh Survekshan rankings or other evaluative mechanisms could be a potential approach. To strengthen the EPR system, several measures are proposed.

Firstly, ULB engagement and incentivisation should be prioritised to encourage more ULBs to register and actively participate in EPR processes. In addition, a variable surcharge mechanism could be introduced by amending the Plastic Waste Management Rules, allowing a surcharge on PIBOs when purchasing certificates from PWPs. Revenue generated should be directed towards ULBs, but on a prerequisite that administration has taken proactive measures to enumerate and integrate the informal waste pickers into waste collection, transportation, and pre-processing activities.

Few crucial aspects are important to tackle before making this model operational. The concessionaire agreements for city waste management should be amended to make provisions that include waste pickers. A transparent benefit transfer mechanism needs to be developed so that the surcharge paid by PIBOs can be judiciously used to address the needs of waste pickers, and the expected industry concerns regarding increased compliance costs. Structured participatory consultations also need to be established to include like-minded organisations in decision-making processes, ensuring clear inclusion mandates within the EPR framework.

ULBs can also explore CSR funds with the help of civil societies and like-minded organisations to aid in the development of these working models. Rethinking and leveraging producer responsibility organisations (PROs) could further enhance EPR implementation. In countries where PROs play a central role in EPR

Figure 14: Informal waste pickers integration through Extended Producer Responsibility (EPR)



Source: CSE

execution, they can be mandated to contribute towards improving the living and working conditions of informal waste workers.

The EPR mechanism is not just to hold the polluters accountable but also allocate resources to those managing waste. A structured and inclusive approach that integrates waste pickers into the formal EPR framework can establish a model for other nations to emulate. Through policy amendments, stakeholder engagement, and participatory governance, India can enhance the effectiveness of its EPR system while ensuring socio-economic benefits for the informal waste sector.

4.4 SWM Rules 2016 and upcoming Rules 2025: Apprehensions or assurance

For the first time in India's regulatory framework on solid waste management, the Solid Waste Management (SWM) Rules, 2016 formally recognise and define the role of waste pickers. The Rules outline the responsibility of waste generators to hand over waste to "authorised waste pickers." Furthermore, waste pickers are explicitly referenced in the definition of a material recovery facility (MRF), which is described as a facility where non-compostable solid waste is temporarily stored by the local authority, or any entity specified under Rule 2, or any person or agency authorised by them to enable the segregation, sorting, and recovery of recyclables. This process is to be carried out with the involvement of the authorised informal sector, including waste pickers, informal recyclers, or any other workforce engaged by the local authority.

While outlining the duties of the Secretary in charge of the Urban Development Department (UDD), the Solid Waste Management Rules, 2016 emphasise that state policies and strategies must recognise the primary role of the informal sector (specifically waste pickers, waste collectors, and the recycling industry) in reducing waste. The Rules call for the development of broad guidelines to facilitate the integration of waste pickers and informal waste collectors into the formal waste management system.

Local authorities and village panchayats are mandated to establish mechanisms to recognise organisations of waste pickers and informal waste collectors, and to promote and institutionalise systems for their integration into solid waste management activities, including door-to-door waste collection. They are also instructed to facilitate the formation of SHGs, issue identity cards to waste pickers and informal collectors, and subsequently encourage their participation in various aspects of solid waste management, particularly in door-to-door collection services.

The Solid Waste Management Rules, 2016 also recommend the inclusion of a representative from a reputed NGO or civil society organisation (CSO) working with waste pickers, informal recyclers, or in the field of solid waste management, in the State Level Advisory Board, thereby aiming to ensure the participation of informal waste workers in policy-making processes.

However, these recommendations are advisory rather than mandatory. For instance, the Rules state that local bodies "should" form Self-Help Groups (SHGs) and "should" provide identity cards, instead of mandating direct issuance of identity cards to waste pickers. As a result, the implementation of these recommendations has been inconsistent across the country. Wherever some degree of integration of informal waste workers has occurred, it has largely been due to the independent initiatives of waste pickers' organisations or cooperatives. No significant state-led initiatives for the integration or implementation of dedicated schemes for informal waste workers have been observed.

Expectations from upcoming Solid Waste Management (SWM) Rules

The upcoming **Solid Waste Management Rules, 2025** are anticipated to build upon the foundation laid by the Draft SWM Rules, 2024. If strengthened and adopted with clarity and accountability, these rules could mark a critical step forward in the systemic integration of informal waste workers into municipal solid waste systems.

One of the key expectations is a ULBs to identify, register, and integrate waste pickers into collection and recovery systems. The draft 2024 version assigned the Ministry of Housing and Urban Affairs (MoHUA) the responsibility of supporting states and UTs in this integration, and we expect the final rules to reinforce this through defined targets, timelines, and monitoring mechanisms.

It is also anticipated that the role of state departments, particularly Urban Development Departments (UDDs) and Rural Development Departments (RDDs), will be clarified and aligned. In the draft, RDDs were explicitly tasked with preparing integration strategies, while a similar clarity was missing for UDDs. The 2025 Rules should address this imbalance to ensure uniform implementation across both urban and rural areas.

Another crucial expectation is the restoration of waste picker representation in key decision-making platforms, such as the State Level Advisory Body—an element removed in the 2024 draft. Their participation is essential for inclusive governance and to ensure that policies reflect on-ground realities.

The centralised online portal proposed for registration and monitoring offers an opportunity for transparency, but its success will depend on parallel investments in capacity building, data collection, and digital literacy among ULBs and waste picker organisations.

Finally, the upcoming rules must go beyond intent and embed clear guidelines for integration including identification, enumeration, ID issuance, access to social welfare, and recognition of diverse models. Financial mechanisms such as subsidies, gap funding, and incentives must be realigned to support decentralised and inclusive waste systems, shifting away from the current over-emphasis on large-scale, centralised infrastructure like waste-to-energy plants.

In essence, the SWM Rules, 2025 present an opportunity to move from fragmented efforts to a comprehensive and rights-based policy framework; one that recognises the full spectrum of informal waste actors and enables a just, inclusive, and sustainable transition.

National policy mandating the integration would impact the informal waste sector even in the remotest parts of the country

Image credit: CSE

4.5 NAMASTE scheme as an opportunity

The National Action for Mechanized Sanitation Ecosystem scheme (NAMASTE) aims to formally recognise, empower, and integrate waste pickers into the solid waste management (SWM) system. It seeks to improve their livelihoods, ensure occupational safety, link them to social welfare schemes, and create dignified, sustainable working conditions. The scheme has emerged as an opportunity to formalise and strengthen the livelihoods of waste pickers, offering them greater security, dignity, and inclusion. At the same time, it enables ULBs to leverage the vital role of waste pickers in waste segregation, recycling, and resource recovery. By integrating waste pickers into formal waste management systems, ULBs can more effectively fulfil the mandates of the SWM Rules, 2016, promoting sustainable and inclusive urban and rural waste management practices. NAMASTE, thus, serves as a win-win model, fostering social inclusion and sustainable solid waste management.

The NAMASTE scheme, jointly launched by the Ministry of Social Justice and Empowerment (MoSJE) and the Ministry of Housing and Urban Affairs (MoHUA) in 2023, aims to ensure dignity, safety, and livelihood security for sanitation workers in India. It is built upon the earlier Self Employment Scheme for Rehabilitation of Manual Scavengers, ensuring the safety and dignity of sanitation workers, and promoting their rehabilitation into safer livelihoods. Approved by the Standing Finance Committee (SFC) in June 2024 in its landmark move, NAMASTE expanded to include waste pickers as a third component, recognising their crucial role in India's waste management ecosystem. It opens a critical opportunity for integrating waste pickers into formal waste management systems by equipping them with new skills, recognising their contribution, and linking them to sustainable and mechanised waste services.

The National Safai Karamcharis Finance and Development Corporation (NSKFDC), functioning under the Ministry of Social Justice and Empowerment (MoSJE), has been designated as the implementing agency for the NAMASTE scheme. To ensure effective and efficient execution, NSKFDC will be supported by a dedicated technical support unit (TSU), also known as the project implementing unit (PIU).

The scheme focuses on enumeration and issuance of occupational ID cards to waste pickers, providing them with occupational safety training, PPE kits, health insurance under Ayushman Bharat, skill enhancement, and organising them into cooperatives and SHGs. It also supports the establishment of dry waste collection centres (DWCCs), managed by waste picker collectives, and promotes linkages

with social security benefits, and financial inclusion. It aims to profile 2.5 lakh waste pickers by 2026, ensuring their access to social welfare, skill upgradation, and occupational safety, while promoting collective representation through cooperatives and SHGs. By empowering waste pickers to manage decentralised waste operations and linking them to protection schemes, NAMASTE offers an unprecedented opportunity to formalise, uplift, and integrate marginalised workers into sustainable and dignified waste management systems.

1. Enumeration and ID cards

- Waste pickers will be identified by ULBs/Gram Panchayats (GPs).
- Each will be issued a unique occupational photo ID to formalise their work.

2. Occupational safety and skill upgradation

- Occupational health and safety (OHS) and skill training sessions for waste pickers.
- Awareness sessions for ULB/GP officials about the challenges faced by waste pickers.

3. Integration into solid waste management

- 750 dry waste collection centres (DWCCs) will be supported in partnership with ULBs/GPs and resource organisations.

4. Linkages with social security schemes

Waste pickers will be linked to government schemes such as:

- AB-PMAY (Affordable housing)
- Pre-Matric scholarships
- e-Shram (National Database for Unorganised Workers)

5. IEC campaigns

Information, education, and communication (IEC) activities will be conducted to:

- Raise public awareness.
- Educate waste pickers about their rights

The successful implementation of the NAMASTE scheme involves a coordinated effort among multiple ministries and departments. Each plays a defined role:

- **Ministry of Social Justice and Empowerment** (**MoSJE**)**:** Lead Ministry; responsible for financing, social security linkages, capital subsidies, and overall scheme management.

Figure 15: Proposed Integration model through NAMASTE

Source: CSE

- **Ministry of Housing and Urban Affairs (MoHUA):** Key partner for urban waste picker integration, issuing advisories to urban local bodies (ULBs).

- **Ministry of Panchayati Raj (MoPR):** Responsible for integration in rural areas through Gram Panchayats.
- **Department of Drinking Water and Sanitation (DoDWS):** Supports rural integration and sanitation linkages.

- **Ministry of Labour and Employment (MoLE):** For registration under the e-Shram portal.

- **Ministry of Health and Family Welfare** (**MoHFW**) / **National Health Authority** (**NHA**)**:** For providing health insurance under Ayushman Bharat (AB-PMJAY).

- **Ministry of Skill Development and Entrepreneurship** (**MSDE**)**:** Supports training and skill-building activities.

Integration will be achieved by systematic enumeration, issuing ID cards, capacity building, skill enhancement, distribution of PPE kits, financial support for waste collection vehicles, setting up DWCCs managed by waste pickers, forming strong SHGs and cooperatives, ensuring access to social security schemes, and developing strong information, education, and communication (IEC) /behaviour change communication (BCC) campaigns to change perceptions and practices.

Waste pickers at the registration camp under NAMASTE scheme, organised by Pune Municipal Corporation and SWaCH Cooperative

Image credit: SWaCH

Resource Organisations (ROs) will provide ongoing hand-holding, and ULBs/rural bodies will work closely with waste picker groups to ensure smooth operations and sustainability. The NAMASTE scheme promotes financial empowerment through cooperatives, SHGs, and DWCCs, and strengthens linkages with formal systems in both urban and rural areas.

On March 26, 2025, Pune became the first city in India to officially roll out the NAMASTE scheme, marking a historic step in recognising and uplifting waste pickers. The launch, in presence of key city officials and representatives from the waste picker cooperative, SWaCH, set an inspiring precedent for other cities. With the target to register 10,000 waste pickers by the first half of 2025, this initiative stands as a beacon of empowerment for waste pickers across India. It validates their decades-long struggle for dignity, rights, and formal inclusion in waste management systems.

5 THE PATH AHEAD

This chapter highlights the structural inequities and livelihood disparities faced by waste pickers across different cities.

A comparative overview of income components is presented from various case studies to understand earning patterns.

Key steps are outlined which the urban local bodies (ULBs) need to adopt for meaningful and sustained integration.

This chapter reinforces that integration is an ongoing process, not a fixed endpoint, requiring continuous commitment and adaptation.

5.1 Structural inequities and livelihood disparities among waste pickers

The income table below reveals more than just earnings; it uncovers the structural constraints faced by waste workers across different ULBs. A major concern is that in majority of the cases, workers typically operate under fixed working hours, with little flexibility or control over their schedules. At the same time, they are either restricted or have no access to high-value waste, which is a potential source of supplementary income. This further limits their agency in improving their own livelihoods.

Table 9: Income table of waste workers across different ULBs

ULB	Number of workers	Daily working hours	Minimum ensured wage	Income from the sale of recyclables	Income from user fee	Income from other sources	Sum total (excluding no regular pay)
Ambikapur	480	8–10	7,200	2,000 (fixed) + 1,000 (variable)		500–1,000 (festival bonus: not regular)	Rs 10,200
Aurangabad	54	8	16,250 (cumulative wage based on work days)				Rs 16,250
Bhubaneswar	642	8–10	13,500			1,350 (hardship allowance: 10 %)	Rs. 14,850
Chandigarh (two distinct models)	940	6–8	16,000–20,000				Rs 16,000–20,000
Shillong	200	6–10		10,000			Rs 10,000
Trivandrum	1,163	7	10,000	5,000–10,000 (variable but regular)			Rs 15,000
Bengaluru	600	8		10,000			Rs 10,000
Pimpri-Chinchwad	300	8–10	20,300				Rs 20,300
Karad	21	8	16,800				Rs 16,800
Pune	4,000	5		3000–5000 (variable but regular)	17,000	500 (user fee from composting and sale of MLPs; not regular)	Rs 22,000

Source: Collected from field study

These structural constraints are compounded by the wide variation in minimum wages across states, despite somewhat similar job roles and workloads. This uneven wage structure, shaped by state-level policies, places workers in lower-paying regions at a clear disadvantage and increases their economic vulnerability, especially in the absence of regular bonuses or reliable income from recyclables or user fees. Together, these factors highlight a critical need for more equitable wage frameworks and greater worker autonomy across cities.

5.2 Summary of key insights

The integration of informal waste pickers into city-wide solid waste management (SWM) systems is a multidimensional process that transcends simple employment generation. It requires thoughtful structuring, sustained political commitment, and a deep understanding of the socio-economic realities of waste pickers. Following insights have emerged from the diverse case studies documented in Chapter 3 of this report:

• One-size-fits-all models do not work

Different cities have adopted diverse models ranging from decentralised, low-cost SHG-led systems like Ambikapur's SLRM model, to cooperative-led systems like Pune's SWaCH, and NGO-driven entrepreneurial hubs like Bengaluru's DWCCs. Successful integration of waste pickers must be adapted to local conditions considering city size, waste composition, socio-economic context, and the capacity of local institutions. Uniform models often fail to meet diverse, ground-level needs.

• Enumeration is the first and most critical step

Enumeration serves as a foundation for recognition, access to welfare, and structured inclusion in waste management systems. In cities like Pune and Bengaluru, enumeration led by the civil society enabled waste pickers to access identity cards, social benefits, and integration opportunities. Similarly, in cities like Aurangabad and Bhubaneswar, scaling up systematic enumeration holds strong potential to prioritise experienced waste pickers and facilitate their meaningful participation in formal waste systems.

• Access to waste is central to integration

Waste pickers rely on access to recyclables for their livelihood. Protecting their ability to collect, sort, and sell waste is crucial to any integration strategy and must be safeguarded against privatisation or exclusive contracts.

• Strong institutional support and collective action are essential

Integration has succeeded when it has been anchored by strong institutions, whether it be a trade union (Pimpri Chinchwad); civil society organisations (Bengaluru, Aurangabad); or ULBs themselves (Ambikapur, Chandigarh). These intermediaries have played a critical role in enabling identification, negotiation, and protection of waste pickers' rights.

• Integration reduces overall burden on cities

Properly designed integration reduces the operational and financial strain on ULBs, resulting in more efficient service delivery, reduced costs, and improved environmental outcomes. In Ambikapur, the integration of SHG members into door-to-door waste collection and decentralised processing helped the municipal corporation significantly cut down on collection costs. With over 85 per cent user fee recovery and revenue from dry waste sales managed by the federation, the city has created a nearly self-sustaining system. The need for a dumpsite has been eliminated and the financial burden on the ULB is reduced as well.

• Decentralisation improves efficiency and equity

Ward-level and community-managed waste systems such as DWCCs, MCCs, and SLRMs enable better segregation, create local jobs, and ensure more inclusive participation than centralised waste systems. While centralised high-capacity MRFs may support mechanised processing, decentralised systems operated by waste pickers offer greater potential for both higher material recovery and inclusive livelihood generation.

• Economic viability of DWCCs or MRFs requires ULB and multi-stakeholder support

Case studies from Bengaluru and Aurangabad reveal that DWCCs and MRFs operated by waste pickers struggle to cover operational costs due to the low market value of recyclables and high expenses for labour, logistics, and infrastructure. In both cases, sustainability was only possible through external support. In Bengaluru, municipal subsidies were critical, while in Aurangabad, CSR funding and plastic credit mechanisms played a key role. These case studies highlight that without consistent ULB support and strategic partnerships, such models are not economically viable.

• Worker-led organisations strengthen outcomes

When waste pickers are organised into cooperatives, unions, or self-help groups, they gain collective bargaining power. This leads to improved working conditions, and a greater role in decision-making and service delivery. For example, In PCMC,

strong negotiations by the waste pickers' trade union led to their formal inclusion as salaried workers with social security benefits, ensuring continuity of work within the municipal system.

In contrast, in Shillong, waste pickers remain unorganised and lack collective representation; their integration remains limited. This highlights the importance of forming associations or unions to advocate for rights, secure an enabling working environment, social and health benefits, as well as influence policy decisions.

• Dedicated policies and mandates for ULB are vital

Integration requires formal backing. Policies must clearly assign responsibility to ULBs to include and support waste pickers through structured programmes, budgets, and performance benchmarks. The Solid Waste Management (SWM) Rules, 2016 did acknowledge informal waste pickers and mandated their inclusion in the waste management value chain. However, they lacked enforceable obligations for ULBs.

• Municipal will and leadership matter

Experiences from cities like Pune and Chandigarh demonstrate that committed municipal leadership is critical for driving an inclusive waste management approach.

• Welfare must accompany work

Inclusion must go beyond employment. Waste pickers should have access to health insurance, safety gear, childcare, housing, and education to ensure their long-term well-being and dignity. For instance, in Bengaluru, Hasiru Dala not only facilitated integration into DWCC operations but also linked waste pickers to welfare schemes—providing access to housing programmes, health insurance, medical camps, and scholarships for children, and nutritional support—demonstrating a holistic model that safeguards both livelihood and dignity. By embedding welfare into waste management operations, ULBs must adapt this approach to ensure a dignified work environment for the workers.

• Privatisation undermines just transition

Privatised waste systems often exclude informal workers and reduce their access to livelihoods. In Delhi, the shift toward privatised waste operations and city beautification efforts led to the closure of informal sorting spaces and restricted access to waste sites. It forced many waste pickers to work at night or pay bribes to access recyclables, effectively pushing them out of the system without rehabilitation. A just transition requires inclusive planning that protects and integrates waste pickers rather than displacing them.

• EPR and CSR can enable integration

Extended Producer Responsibility (EPR) and Corporate Social Responsibility (CSR) funds can be vital sources of support for infrastructure, wages, training, and capacity-building initiatives that include waste pickers.

• Integration should not dilute autonomy or displace existing workers

Many waste pickers value their independence and resist full formalisation, especially when it comes with fixed hours and no access to recyclables. Models must respect the diversity in preference, capacity, and aspiration. While some waste pickers aspire for secure jobs like those in Chandigarh's Pink MRF, others prefer the flexibility and income potential of models like SWaCH.

• Integration is a process, not an endpoint

Inclusion of waste pickers must be seen as a phased, continuous effort starting with identification, building trust, improving working conditions, and gradually creating formal roles within the waste management system.

Waste pickers sustaining the material recycling industry

Image credit: CSE

5.3 Steps of integration to be adopted by the ULBs and the way forward

Despite policy constraints, institutional challenges, and limitations in political and administrative intent, ULBs can take specific steps to integrate informal waste workers, particularly waste pickers, into the formal waste management system. Leveraging this existing resource pool can enhance solid waste management efficiency and sustainability.

The initial steps toward integrating informal waste pickers into a city's solid waste management system begin with their proper identification and enumeration, followed by their inclusion in waste collection and sorting activities. The next phase depends on the nature of their engagement whether they are hired as formal workers or integrated through models like SWaCH, or other hybrid approaches. If formally employed, they may gain access to employment-linked benefits such as provident fund (PF) and dearness allowance (DA). However, for those working in informal or semi-formal arrangements, ensuring access to a broader range of social security measures becomes critical. These include accidental and life insurance, healthcare benefits, educational support for their children, and pensions providing much-needed social protection and enhancing their long-term well-being.

Notwithstanding the significant contributions of informal waste workers to both environmental and economic aspects, fewer than 50 per cent of cities in India have taken concrete steps to integrate them into the mainstream waste management value chain. According to a recent study by CSE on the effectiveness of municipal bye-laws in India, only 43 per cent of cities include provisions for integrating the informal sector in their regulations. Among these, 64 per cent of cities claim to have implemented integration measures, but only 41 per cent of citizens agree with this assertion.[29]

Currently, there are no established guidelines or strict mandates in India for this integration process. Field studies reveal that except a few, cities have adopted a fragmented and inconsistent approach that does not fully address the needs and priorities of waste workers. Therefore, there is a clear need to propose steps for integration. These steps are not universally applicable and may overlap or vary based on the specific geographic, demographic, and other characteristics of each city. They are listed as below:

I) Unionising and organising

Apparently, every individual waste picker is competing with the other in the free market economy, where they all are working on the same dumpsite or same

landfill, so, the immediate benefit of collective bargaining is not realised by them. Therefore, unionising and organising the informal waste workers happens to be the most crucial aspect for them to feel the cohesiveness and make collective demands.

While there is no universal methodology for integrating informal waste pickers into the mainstream waste management value chain, the first step for any city is organising them. Existing workers' unions, such as those for street vendors, domestic workers, construction labourers, or rickshaw pullers, can play a pivotal role in this process. Identifying these unions and leveraging the leadership of organically emerged community leaders can help unite waste pickers, set shared goals, and negotiate with city authorities. Field stories show that cities with strong union presence and collective aspirations achieve faster progress in organising waste pickers, securing their rights, and ensuring a sustainable livelihood. For example, in PCMC, the union successfully secured jobs for waste pickers in a privatised system and ensured they received financial compensation for previously denied wages.

Allocating resources to streamline their inclusion costs far less than privatised systems, and ensures long-term environmental and economic benefits. Organising waste pickers is, therefore, the first and most critical step a city must take towards their integration.

II) Identification, universal enumeration, mapping, and preparing inventory

The integration of informal waste pickers into mainstream solid waste management begins with their identification and enumeration, a challenging process which requires careful scrutiny and contextual considerations. A city genuinely aiming to integrate waste pickers must define "waste pickers" clearly and address potential challenges, such as an influx of non-waste pickers claiming benefits, once integration and social welfare coverage are announced.

Since waste picking is an informal occupation without formal credentials, proof often relies on recyclable sales. For instance, Pune's KKPKP union requires waste pickers to produce the last three receipts of sales to scrap dealers ("bhangarwalas"). However, this method can also be unreliable as receipts are rare and easily fabricated. The union, as an alternative, verifies by directly going to the houses or shops these waste pickers collect waste from, to eliminate the chances of false representation. This highlights the dual challenge of proving or disproving someone's status as a waste picker and underscores the importance of having waste

pickers' organisations. Where such organisations are absent, national networks like the Alliance of Indian Waste Pickers can play a crucial role in auditing or gatekeeping.

Demographics can also aid identification. For example, over 80 per cent of Pune's waste pickers are women, while cities like Bengaluru, Delhi, and Gurugram have significant numbers of migrant Bengali workers. By examining demographic trends, cities can develop context-specific solutions to address the challenges of identifying and enumerating waste pickers. Enumeration includes not only identifying, but also registering—taking down at least some amount of details without invading their privacy, but enough to identify them and to be able to contact them. For example, giving a card endorsed by the municipality. This becomes the basis for the next two steps, access to livelihood and access to social welfare.

Mapping informal waste collectors is a crucial step in understanding their presence, activities, and contribution to waste management. The process of mapping can help identify the locations where informal waste collectors operate, the types of waste they handle, and their collection routes.

Creating a comprehensive inventory with all relevant information about waste pickers and maintaining it in a dedicated database is a critical first step toward their integration. With the launch of the NAMASTE scheme, ministries are now encouraging the registration of waste pickers on a centralised portal. Furthermore, the Draft Solid Waste Management Rules, 2024 mandate that all ULBs and Panchayati Raj institutions (PRIs) register waste pickers operating within their jurisdictions.

III) Unbiased registration

All waste pickers should be registered without discrimination, as having a comprehensive understanding of everyone working in the municipality is essential. Waste pickers themselves are best positioned to identify what would encourage others to come forward for registration. Since they are more likely to trust their peers, it is crucial to involve waste pickers directly, in both the planning and the implementation of the registration process. Their participation ensures not only better outreach, but also builds trust and legitimacy within the community.

IV) Working identity cards

After the enumeration and registration of the informal waste picker, ULB should issue an occupational identity card duly signed by the Commissioner or any other

relevant authority equivalent to the head of the department (such as the SBM in-charge from the city administration). The job card should contain the waste picker's name, ward number, address or the place of her/his work, approximate age in absence of exact date of birth, and gender. The card should have a unique number mentioning the validity. The back side of the card should mention the department and purpose like integration of informal waste pickers, and it should also be mentioned that the holder is registered with the ULB, and she/he is not an employee of the local body. There should be the name and contact number of the concerned authority in the local body in case the card is found lost. Most importantly, the card should be made with a rigid durable material like PVC, similar to the way an Aadhar card is made.

Issuing an occupational identity card serves multiple important purposes. It protects waste pickers from unnecessary harassment and criminalisation by the police, ground-level ULB officials, and even citizens in certain cases. More importantly, it symbolises official recognition of their work and affirms the dignity of their profession. Notably, Bengaluru was the first Indian city to issue job identity cards to registered waste pickers back in 2011.

V) Exposure visits and capacity building

When the waste pickers are integrated into the regular waste management system by any city, punctuality and consistency are some of the skills they must possess, because if they collect waste from the door step, every citizen wants them to come on time. Other than that, basic financial management is another skill they need to learn to be able to handle the money they would be earning.

Exposure to the sites where the integration process is already existing is very important for them to be able to see, internalise, and learn various operational methods and functionalities. For example, The Alliance of Indian Waste Pickers runs a three-month fellowship programme for the waste picking leadership, in collaboration with The National Safai Karamcharis Finance and Development Corporation (NSKFDC)—a body under the Ministry of Social Justice and Empowerment (MoSJE). Apart from capacity building, they also offer exposure visits to the cities where integration has been successful.

VI) Mainstreaming into the formal waste management value chain, establishing a long-term, consistent agreement/ MoU

As noted earlier, integrating informal waste workers, particularly waste pickers, preserves their livelihoods while improving working conditions and securing their income. Local authorities must ensure a just transition for these workers

by enhancing their working environments and adding value to their earning opportunities. This involves leveraging their existing skills and work patterns to integrate them effectively into the solid waste management value chain through various means.

The Alliance of Indian Waste pickers (AIW) prepared a draft guideline for the local body to take the following measures, not limited but pertinent to a just transition of the informal waste pickers:

- Ensuring integration of waste pickers into SWM or waste-linked livelihoods, such as doorstep collection, composting, biogas management, plant management, and driving. This must be complemented by facilitating access to social welfare and social security, etc.

- Provide personal protective equipment (PPE) and working equipment including push-carts, vehicles, etc.to registered informal waste pickers, integrated or otherwise, of appropriate quantity, quality, and frequency.

- Preserve access to waste for all informal waste pickers, from the point of generation to disposal.

- Consider the potential impact on waste pickers' livelihoods and incomes when implementing recyclable-related initiatives, like take-back or deposit refund schemes, as these may limit their access to valuable waste materials.

- Implement measures to boost registered waste pickers' incomes by buying recyclables at above-market rates, supporting SHGs or cooperatives, and providing access to scrap trading or aggregation facilities.

- Ensure free access for registered waste pickers and their organisations to adequate sorting and temporary storage spaces like sheds, MRFs, DWCCs, and promote similar support from citizens, RWAs, and institutions, to encourage recycling.

- Identify spaces within its jurisdiction for establishment of permanent or temporary second-hand, recyclables, or reuse markets and allocate these on priority, discount, or freely to waste pickers, waste picker organisations, or other informal recycling sector participants.

- Ensure access to adequate sanitation facilities for waste pickers across all SWM sites such as drinking water, washing, toilets, rest areas, and changing rooms and explore linkages to midday meals and community kitchens.

- Undertake ongoing skilling and capacity building of all registered informal waste pickers.

- Provide child care facilities in locations with a large presence of informal waste pickers like processing plants and landfills.

- Undertake free annual medical check-ups of registered waste pickers and provide guidance on free or subsidised health care for any identified health issues.

- Train and sensitise local body's employees, contractors and contracted workers on the contribution of informal waste pickers and the mandate for their identification, up gradation of working conditions, and integration into solid waste management.

- Establish a platform for NGOs and CSR initiatives to collaborate with local bodies and waste picker organisations to enhance waste picker livelihoods, prioritising their integration into SWM systems or, where not feasible, into allied sectors like sanitation, parks, or cleaning through employment or partnerships.

- Integrate registered waste pickers into in-situ organic waste management, especially at bulk waste generator sites, through training and by prioritising their engagement via vendors, RWAs, or citizens supported by incentives. Allocate decentralised organic or dry waste facilities and RRR (Reduce-Reuse-Recycle) centres to them, on a cost-recovery basis, with necessary capacity building.

Another crucial aspect of integration is establishing long-term agreements between the ULB and the waste pickers, including their organisations or cooperatives, where they exist. Such agreements provide a legal foundation and help ensure the sustainability of their livelihoods. For instance, in Chandigarh, over 900 waste pickers have been engaged in door-to-door waste collection alongside ULB vehicles, each under a three-year Memorandum of Understanding (MoU) signed with the ULB.

VII) Occupational and health benefits

Informal waste workers, particularly waste pickers, work in highly vulnerable conditions, handling hazardous waste, facing extreme weather, and exposure to toxic chemicals and greenhouse gases. They also risk injuries while collecting and sorting waste from dumpsites or bins, often suffering from health issues like lung and stomach infections, and skin problems due to lack of proper tools and safety gear.

Integrating waste pickers into a system with safe working conditions and access to essential health and social welfare schemes is critical. This includes insurance coverage, such as Jan Arogya Bima Policy for emergency hospitalisation, PMJJBY (life insurance), and PMSBY (accident insurance). Additionally, benefits like education schemes for their children, housing, and improved living standards are vital. In cities like Pune and Bengaluru, where integration of informal workers has taken place, these benefits are often provided through premium payments or direct enrollment.

A significant advancement is the inclusion of waste pickers in the NAMASTE scheme, which offers them access to the e-SHram portal. This central government initiative provides integrated benefits for unorganised workers, including pension schemes (PM-SYM), skill development, and apprenticeship opportunities through Skill India Digital. So far, 12 central government schemes have been integrated into e-Shram, including PMSBY, PMJJBY, Ayushman Bharat, PM-SVANidhi, PMAY, and MGNREGA. With the right approach, local governments can now more easily link informal waste workers to available health and social welfare benefits.

VIII) Ensuring proper wage and other labour rights

The integration model can either provide waste pickers with a wage, access to waste, or both. In some cases, such as the SWaCH model in Pune, waste pickers are granted the unique right to collect user fees from citizens, in addition to access to recyclables, without receiving a wage. Local bodies often opt for a minimum wage structure similar to formal employment when integrating waste pickers, sometimes excluding access to waste and the right to collect user fees. The main goal across these models is to ensure waste pickers achieve a living income, either through wages mandated by state regulations or through access to waste materials, or both.

The International Labour Organization (ILO) also emphasises the importance of integrating waste pickers into solid waste management systems, ensuring

fair remuneration, access to social protections, participation in urban planning, protection from the impacts of extreme weather, and exclusionary policies. Thus it recognises their vital role in combating climate change, ensuring no one is left behind.

IX) Convergence of government fund, leveraging CSR and other potential sources

States and local authorities, already mandated to address poverty alleviation under the 73rd and 74th Constitutional Amendments, should proactively strategies and guide cities to integrate informal waste workers. They should converge resources from schemes like NULM, SBM, NAMASTE, and other poverty alleviation programmes, and leverage CSR funds to develop waste processing infrastructure, such as MRFs and DWCCs. These funds can also be used for providing safety gear, linking waste workers to social benefit schemes, paying insurance premiums, and offering critical gap funding to sustain integration models.

X) Advocacy, public awareness, and behaviour change

Advocacy plays a crucial role in shifting public perceptions and policies regarding informal waste workers. By raising awareness about their valuable contributions and the challenges they face, support for their integration can be strengthened. Local bodies should take proactive steps to raise awareness and challenge the common negative perceptions and criminalisation of informal waste pickers. Highlighting their environmental and financial contributions is essential for fostering greater acceptance and social inclusion.

XI) Continuous support, monitoring, and evaluation

While the Ministry of Environment, Forest and Climate Change (MoEFCC) is responsible for overall monitoring of the SWM Rules, 2016, and mandated to constitute a Central Monitoring Committee chaired by the Secretary of MoEFCC; the Ministry of Housing and Urban Affairs (MoHUA) has been mandated under the draft SWM Rules, 2024, to assist states in formulating and implementing strategies for the integration of informal waste workers. It is, therefore, imperative that rural and urban local bodies develop robust mechanisms to monitor, oversee, and evaluate the actions and measures undertaken at the local level ensuring the continuity and effectiveness of the integration process.

The integration of informal waste workers into formal solid waste management systems requires a holistic, inclusive, and sustainable approach that addresses both social and structural barriers. By fostering dignity through awareness campaigns, policy reforms, and the provision of social security, cities can ensure equitable

opportunities for waste workers. Creating pathways for safe working conditions, skill development, fair compensation, alongside the active participation of waste worker organisations in decision-making will not only improve the quality of their lives but also enhance the overall efficiency of waste management systems.

A **Just Transition** for waste workers is not only essential for social inclusion, but also for achieving long-term sustainability in waste management.

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Appendix: What are waste pickers called in different parts of the world?

Latin America

- **Argentina:** *Cartoneros* – Derived from *cartón* (cardboard), referring to those who primarily collect and recycle paper and cardboard. Many cartoneros work in cooperatives.

- **Mexico:** *Pepenadores* – Comes from the verb *pepenar*, meaning "to scavenge" or "pick up." Pepenadores sort through waste to collect valuable recyclables.

- **Brazil:** *Catadores de materiais recicláveis* – Means "collectors of recyclable materials." Many catadores are organized into cooperatives and play a key role in Brazil's recycling industry.

- **Colombia:** *Recicladores* – A general term meaning "recyclers," referring to individuals who manually collect, sort, and sell recyclables.

- **Paraguay:** *Gancheros* – Named after the hooks (*ganchos*) they use to sort through waste at landfills.

Europe

- **France:** *Chiffonniers* – Historically used for wastepickers who collected cloth, metal, and other waste materials in Paris. The term is less common today but was widely used in the past.

- **Romania:** *Gunoieri informali* – Refers to informal garbage collectors who gather and sell recyclables.

- **Spain:** *Recicladores informales* – Similar to Latin America, meaning informal recyclers.

Africa

- **Egypt:** *Zabbaleen* (الزبالين) – Meaning "garbage people," the Zabbaleen community in Cairo has developed one of the world's most efficient informal recycling systems.

- **South Africa:** *Waste pickers* (in English), *Abavukuzi bentlupheko* (in isiZulu & isiXhosa) – Waste pickers in South Africa play a major role in recovering recyclables from streets and landfills.

- **Ghana & Nigeria:** *Bola boys* – Young men who scavenge at dumpsites (from the Hausa word *bola*, meaning rubbish).

- **Swahili-speaking countries (Kenya, Tanzania, Uganda):** *Wakusanya taka* – Meaning "waste collectors."

Asia

- **India:**
  - *Kabadiwalas* – Meaning "scrap dealers," they buy recyclables from households and businesses.
  - *Bhangari* (Bengali) – Refers to waste collectors in West Bengal and Bangladesh.
  - *Kuppai Thotti* (Tamil) – Meaning "garbage bin worker."

- **Indonesia:** *Pemulung* – Refers to scavengers who collect recyclables from streets, markets, and landfills.

- **Philippines:** *Mangangalakal* – Meaning "trader," referring to those who collect and sell recyclable materials.

- **China (Mandarin):** 垃圾拾荒者 *(*Lājī shíhuāng zhě*)* – Literally "waste scavenger."

- **Vietnam:** Người nhặt *rác* – Meaning "trash picker."

Middle East

- **Turkey:** Kağıt *toplayıcıları* – Meaning "paper collectors," referring to those who collect paper and other recyclables.

- **Iran:** *Zobaleh Garan (*زباله گران*)* – Informal waste collectors.

Russia & Eastern Europe

- **Russia:** *Мусорщики (Musorshchiki)* – Literally "garbage collectors," though often used for both formal and informal waste workers.

- **Ukraine:** Сміттєзбирачі *(Smittyezbyratchi)* – Meaning "waste gatherers."

This report offers an in-depth exploration of diverse models for the inclusion of informal waste pickers in urban solid waste management systems across Indian cities, capturing a broad spectrum ranging from cooperative-led systems to SHG-operated units and formalised roles within the municipal system.

Key insights reveal that legal mandates under the SWM Rules 2016 have not translated into actionable city-level policies. Identification of waste pickers remains inconsistent, and the most critical aspect for their livelihood—access to waste—continues to be denied.

The study highlights that effective inclusion goes beyond formalisation, emphasising the need to preserve existing livelihoods while providing social security, dignity, and agency. It reveals that successful integration is rooted in an enabling environment that recognises waste pickers' rights, ensures access to waste, and enables income security and social protection.

Drawing on field studies and stakeholder consultations, the report underscores the importance of structured enumeration, recognition, inventorisation, and collective organisation as foundational steps. It presents practical steps and policy insights for urban local bodies to create an equitable, cost-effective, and sustainable waste ecosystem—turning informal waste work into a cornerstone of a just transition aligned with circular economy.

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