

# What waste workers want



Lessons from India's circular economy

September 2025



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# **Contents**

## **Executive Summary**

## **Introduction**

## **Acumen's Green Growth Initiative in India**

## **Methodology**

## **What we heard**

## **Recommendations**

## **What Acumen plans to do**

## Executive Summary

India faces a unique, twofold challenge when it comes to plastic waste. It produces more unprocessed plastic waste than any other country: 3.5 million tonnes, a figure that is set to grow.<sup>1</sup> And India has more informal waste workers than any other country: between 1.5 million and 4 million people.<sup>2,3</sup>

Informal waste work is low-wage, unproductive, unsafe, and precarious. One study found that 71% of waste workers earn less than \$4 a day and one in four live in huts or informal shelters.<sup>4</sup> Informal waste workers are disproportionately likely to be women, marginalized minorities, migrant workers, or all three. And they are largely invisible, despite the foundational role that waste management plays in any functioning society.

A group of innovative waste sector enterprises is combating environmental and social degradation. They are seeking to improve plastic waste management while at the same time creating more dignified livelihoods for waste workers. Acumen, through our partnerships with IKEA Foundation and Target Foundation, is invested in creating a waste management sector that values people and the planet. To do that, we needed to understand what workers actually need and how enterprises are delivering on those needs.

With our impact measurement partners at 60 Decibels, we interviewed over 350 waste collectors, facility workers, employees, and executives at two waste management firms: Green Worms and ReCircle. We found that workers consistently prioritize consistency, income growth, respect, and security. Companies are delivering on these priorities by:

- Offering predictable, transparent payment schedules and prioritizing worker payments.

- Upskilling workers and building their management ranks by promoting internally.
- Investing in the symbols of legitimate work, such as uniforms, ID badges, and communal spaces.
- Providing benefits and a safety net through health insurance and a provident fund.
- Developing standards and policies on workplace safety, then building in feedback loops and listening channels for workers.

Much remains to be done:

- Wages need to improve significantly.
- The waste that workers handle is often not segregated, meaning they are exposed to dangerous and unsanitary refuse.
- The informal waste workforce is heavily composed of migrant workers, who are difficult to connect with long-term security and benefits.

The next steps for the industry are daunting but clear:

Much more funding needs to be directed to create dignified jobs in the waste sector. More work is needed to build the business model for formal jobs in plastic waste. The margins are small, and the informal sector is brutally efficient. To compete, waste ventures need to unlock additional value through vertical integration, upcycling, plastic credits, and waste producer payments.

Regulation can ensure that waste producers bear the cost of a transition to decent work. Currently, Extended Producer Responsibility (EPR) rules do not mandate a formal workforce, nor are waste producers required to compensate for that cost. Future EPR guidelines should reflect the full human cost of managing waste.



Corporations must take responsibility for plastic waste management. Rather than treating EPR as a compliance obligation, they should embed social and environmental goals into their core supply chain and sustainability strategies, as well as their budgets.

Waste enterprises must find their voice. At present, the sector is composed of dozens of pioneers. But given the regulatory shifts required at the urban, state, and

central levels, the sector now needs more collaboration and alignment — both in the form of a unified group of waste enterprises and an alliance of funders — to support this group at various stages with long-term, patient investments. Uniting to leverage their experience and authority can help bring about better regulation and more progress for workers, faster.



# Introduction

Anjana works as a Haritha Karma Sena (HKS) waste collector collecting waste door to door in Thamarassery Village, about 40 kilometres east of Kozhikode city. Green Worms is a private waste management company that has been selected as the contractor for the village panchayat. Anjana goes from door to door collecting segregated dry waste, which is then taken to the Material Recovery Facility (MRF) at Thamarassery where the waste is sorted, baled, and sold to Green Worms. Anjana is paid by kilo of waste collected and segregated, and on good months she earns around 12,000 Indian rupees, or roughly \$140.

The 12,000 Indian rupees is (just) enough to meet her household expenses, children's tuition fee, and the bus ride to and from work. Before Anjana joined as an HKS worker, she had no consistent work. Occasionally, she was called for road construction work under the government's 100-day employment guarantee scheme, where she earned far less and only sporadically.

Anjana likes working with the other women as an HKS worker, as she feels a sense of camaraderie and community. Things could still be better. Money is tight at the end of the month, and she gets no pay on days she takes off for sickness. Collecting waste still has dangers. She is sometimes chased by dogs, and on rainy days she treads carefully on the hilly slopes of the Wayanad foothills.

But she has better security of income, and she is treated with dignity. She aspires to send her son to a private engineering college. Anjana feels that her life is better than before, and she is hopeful that it can get even better.

## Waste in India

As nations urbanize, new cities emerge, and big cities get bigger, waste generation is reaching new heights. According to the World Bank, waste generation globally will reach 3.40 billion tonnes in 2050.<sup>5</sup> Of this waste, plastic waste is of deep concern to people and the planet that we live on, given its slow degradation and chemical leakages. We produce 380 million tonnes of plastic every year, 69 million tonnes of which were improperly managed in 2023 alone.<sup>6,7</sup> Moreover, sourced almost entirely from fossil fuels, plastic production and usage resulted in 2.2 gigatons of fossil fuel emissions in 2019 alone – 5% of the world's total.<sup>8</sup>

India, in particular, is a regrettable leader in plastic pollution worldwide. Although its per capita waste is below the global average, India generates 4.1 million tonnes of plastic waste per year, behind the United States and EU.<sup>9,10</sup> In 2021, only 1.1 million tonnes of plastic were processed, with the rest being dumped or incinerated. Due to its high absolute volumes and low recovery rates, India has the highest level of mismanaged plastic waste in the world, and its volumes are on pace to triple by 2035.<sup>11</sup> The waste crisis in India is even more alarming due to its sheer disorganization, the dangerous working conditions, and the blatant apathy toward those sustaining the waste sector.

This report spotlights the millions of informal waste workers who recover, sort, and recycle materials at the ground level. Strengthening support for these workers is not only a matter of equity. It is essential for the long-term resilience of waste management systems.



## Waste workers in India

An estimated 1.5 to 4 million people work in informal waste collection in India.<sup>12,13</sup> This figure includes marginalized waste pickers collecting from streets and landfills, itinerant buyers purchasing scrap, and Materials Recovery Facilities (MRF) workers handling sorting and baling. Others provide housekeeping for corporations or work with Urban Local Bodies (ULBs) in waste collection and street sweeping.

One study found that on average, these waste pickers recover roughly 23% of waste produced. In India's megacities, this amount ranges from 1,600 to 11,000 metric tonnes daily, depending on the population size of the city.<sup>14</sup> This diverted waste is instrumental towards India's carbon footprint. In Delhi for instance, the Chintan Environmental Group estimates that waste pickers have saved over 900,000 CO<sub>2</sub> per annum.<sup>15</sup> Without informal waste pickers, the 3-4% of India's greenhouse gas emissions resulting from inadequate waste management would have been even higher.<sup>16</sup>

For these workers, their livelihoods depend on the resource value of waste. Rigid plastics — such as Polyethylene Terephthalate (PET), Polypropylene (PP), and High Density Polyethylene (HDPE), found in items like soft drinks, shampoo bottles, or cooking oil — command higher resale value. Waste pickers then sell the waste to either formal and informal aggregators or recyclers to be processed and reused.

In contrast, flexible plastics — from the low-density polyethylene (LDPE) grocery bags to the multi-layered plastic (MLP) in chip packets — have virtually no recycling market. Even plants that burn it for heat pay little for it. Thus, most of this waste

is left abandoned in informal landfills or waterways. For waste management companies, there are little profit margins in these flexible plastics and no financial incentive for informal workers to collect it.

## The reality of informal waste work in India

Informal waste work is low-wage, unsafe, and precarious. It is also overlooked and underappreciated. Despite the foundational role that waste management plays in any functioning community, informal workers' contributions largely go unnoticed — or worse, they are often ostracized as “filthy” or “outsiders.” A recent United Nations Development Program (UNDP) survey found that these informal waste workers in India endure the following challenges:

- They largely belong to marginalized religious, caste, or ethnic minorities.
- The majority of workers operate alone without the benefits of collectivization.
- They endure unsafe conditions with a high risk of infection and minimal access to protective equipment or adequate healthcare.
- They receive meager wages at infrequent intervals. Seventy-one percent of waste workers report earning less than 10,000 Indian rupees (\$118) per month.<sup>17</sup>
- Three in 10 are migrant laborers who are often recruited by informal contractors.
- Workers often live without access to proper housing, water, or electricity. One in four report living in huts or informal shelters.

Women constitute a significant portion of the waste workforce and tend to occupy the lowest positions in the waste value chain. A study in Pune (a city in Maharashtra) revealed that 90% of

street pickers were women and 25% were widows.<sup>18</sup> Meanwhile, men in the industry often hold somewhat better positions with relatively more stability and transactional opportunities in the waste hierarchy.

Despite legislation aiming to bring informal workers into the statutory welfare system, unorganized sectors remain excluded from the formal safety net in India, meaning that informal waste workers cannot access workplace compensation, state insurance, provident funds, or other instruments of social protection.

Moreover, while recent frameworks have taken important steps towards holding producers accountable for the environmental costs of plastic waste, such as the EPR, it is largely silent on the integration of waste workers. Even the Solid Waste Management Rules of 2016, along with the new draft rules of 2024, pay mere lip service to the inclusion of informal waste pickers, with implementation remaining weak. As of 2021, only 13% of ULBs had taken any steps in this direction, leaving informal waste workers largely on their own.<sup>19</sup>

Transitioning to a greener economy requires sustaining the very people who make waste management possible. The International Labour Organization (ILO) classifies these roles as green jobs, yet truly supporting waste workers demands holistic solutions that address not only their labor conditions but their broader well-being. The pressing question remains: Who is stepping up to do this?

## Waste management enterprises

A confluence of factors is creating a new wave of innovation in waste management in India: growing awareness of the environmental damage and social exploitation of the status quo, more enabling regulation, and the opportunity to use technology to disrupt antiquated modes of operation.

Waste enterprises, both for profit companies and nonprofits, are emerging to combat waste challenges with technological, organizational, and business model innovations. The goals of these companies vary. Some exist purely to manage waste more efficiently, while others seek to create more dignified livelihoods for waste workers.

Some emerging for profit organizations aim to achieve both social impact and financial returns. These companies are disrupting highly efficient, albeit informal value chains that operate on narrow margins by tapping into a multitude of revenue streams.



Table 1:

**Five waste sector revenue streams**

Revenue stream type	Method
<b>Service fees and municipal contracts</b>	Collecting and managing waste on behalf of an ULB, in exchange for a service fee.
<b>Collection and material recovery</b>	Collecting or buying mixed solid waste (paper, metals, glass, different types of plastic), then segregating that waste and re-selling it to aggregators or recyclers.
<b>Recycling and upcycling</b>	Segregated plastic converted into granules, pellets, construction boards, and other products with various upstream applications depending on the quality of recycling, whether through mechanical or more advanced chemical processes. Easier with rigid plastics, but harder with flexibles and MLP.
<b>EPR and voluntary plastic credits</b>	Charging plastics producers under domestic EPR laws or via voluntary plastic credits sold to socially conscious brands, in exchange for verified waste management and recycling services.
<b>Technology systems</b>	Technology for waste sorting and automation, traceability platforms, high-quality mechanical or chemical recycling, and even data from waste are in demand to improve efficiency, unlock value, and optimize costs.

Over \$740 million was invested into the Indian waste sector between 2019 and 2021, with the majority of that coming from private equity.<sup>20</sup> In the last several years, over \$90 million of venture capital has flowed to new waste enterprises.<sup>21</sup> Climate funders include a broad range of actors: investors focused on reversing environmental degradation such as climate-focused

equity funds and development finance institutions; corporate sustainability initiatives aiming to improve supply chains; foundations and corporate social responsibility (CSR) programs working to strengthen value chains; and impact investors like Acumen who seek to reduce environmental harm while improving job quality in the waste sector.

## Acumen's Green Growth Initiative in India

Acumen has invested in the future of India's workforce since 2012. We saw the huge potential of the subcontinent's workforce and the value that could be created by bringing more skills and opportunities to underserved groups.

Through a series of investments in upskilling, placement, and enabler companies (financial services and access to benefits), we achieved significant impact and began to understand where our capital could be the most catalytic. By investing in high-potential companies operating in traditionally informal, extractive sectors (such as waste management), we could be instrumental in transforming those sectors into dignified, formal sources of livelihoods.

In January 2022, Acumen launched the Green Growth Initiative with the support of Target Foundation, focusing on creating dignified job opportunities in green and climate-positive sectors. The waste sector emerged as an exciting opportunity. India is projected to generate 35 million green jobs by 2047 across traditional and emerging sectors, including waste management, with

the electronic waste sector alone projected to create around 500,000 direct jobs by 2025.<sup>22,23</sup> Acumen made a decision to focus our efforts on waste management due to its potential for dignified livelihoods and environmental impact.

Through our pipeline-building efforts, we discovered emerging enterprises revamping the sector with innovative models. With support from the IKEA Foundation, Acumen is now investing in some of these models, not only to create better jobs but also to improve existing ones. Our theory of change centers on empowering innovative social enterprises to:

- Enhance income levels by ensuring fair and consistent wages.
- Promote formalization through contracts, job security, social security, and non-cash transfers.
- Improve working conditions by using technology to reduce drudgery, create cleaner spaces, provide protective gear, and ensure access to basic amenities, fixed schedules, and appropriate breaks.
- Uphold fair treatment, respect, and dignity for waste workers.

### Understanding what workers want

As we began making investments in the waste sector, we wanted to learn if and how companies were bringing dignified livelihoods to workers:

- What do workers want? What are their priorities when it comes to a "good job"?
- Are companies raising impact capital actually creating better jobs?

- What are companies doing to create better jobs and workplaces?

To answer these questions, we reached out to two companies that are actively working to improve the lives of these informal workers: Green Worms and ReCircle.

# Green Worms



## Founded in 2014 by Jabir Karat

**Aim:** addressing India's waste crisis while simultaneously empowering marginalized communities, particularly women.

**Area of operation:** Kerala, Rural; 170+ remote/coastal villages.

### Source of insight

Survey by 60 Decibels

In-person observations & conversations

### Type of workers covered

80 facility workers, 85 full-time Haritha Karma Sena (HKS) workers, and 120 HKS disposal workers

Founders, executives, line managers, HKS workers, MRF facility workers, and disposal facility workers

Green Worms collaborates with local governments and engages women from self-help groups in rural areas to collect waste door-to-door for recovery and disposal. Green Worms also runs their own MRFs, where workers are engaged in sorting the mixed dry waste and segregation into different categories, which are then baled and shipped to different receiving facilities. Green Worms provides dignified jobs, safe working conditions, and opportunities for 420 employees and 6,200 HKS workers, 90% of whom are women.

By diverting ocean-bound plastic waste and providing traceability on its appropriate end-of-life disposal,

Green Worms is able to help brands and importers meet their EPR compliance requirements. The company also sells plastic credits to international brands, which allow them to offset their plastic use by funding recovery and recycling projects. These plastic credit collaborations support brand sustainability goals while enhancing the financial viability of Green Worms to provide better livelihoods. Green Worms is trying to unlock more value through diversification into plastic recycling, which will improve margins and cover costs of providing dignified livelihoods.

# ReCircle



**Founded in 2016 by Rahul Nainani and Gurashish Sahni**

**Aim:** creating a sustainable circular economy in India.

**Area of operation:** Mumbai, Urban.

## Source of insight

Survey by 60 Decibels

In-person observations & conversations

## Type of workers covered

32 current and 7 former job holders at ReCircle

Founders, executives, line managers, MRF facility workers, and disposal facility workers

ReCircle began as a platform to connect and upgrade scrap dealers but pivoted to managing waste collection for Mumbai's Dahisar ward and operating an MRF. They also collaborate on CSR initiatives and events to handle waste management. Additionally, they developed a platform to enhance traceability in the plastics value chain, though monetization proved challenging. The company focuses on diverting waste from landfills and oceans, formalizing the waste sector in India, and enabling a circular economy where waste is transformed into valuable resources.

At the time of research, ReCircle directly employed 56 Safai Sathis (both women and men) working at their facility. They also partner with over 400 waste collection partners and 45 waste processing partners across India.



## Methodology

To better understand what workers want, we conducted telephone surveys of 324 workers and focus groups and interviews with 55 waste workers at Green Worms and ReCircle. The workers we spoke to fell into three main groups:

1. **Waste collectors who go door-to-door collecting household waste**
2. **Segregators (primarily women) at MRFs who sort waste into different plastic types**
3. **Drivers and balers who move and transport waste**

These workers had a range of contractual relationships with companies, from village-level contracts for waste collection to handshake agreements for regular wages (primarily for migrant workers) to formal contracts.

We also spoke with founders of waste enterprises around India, including ReCity, Saahas, WeVOIS, Waste Ventures, and EcoSattva. Once these consultations were complete, we analyzed the data. This report summarizes what we heard and what we think can be done to deliver better livelihoods to more people soon.



# What we heard

## Waste workers want consistency, growth, respect, and security

Given the deep levels of poverty that many waste workers face, it would be easy to assume that what waste workers want in a good job is plain and simple: more money. With more money, they could afford better, safer housing, better education for their children, more food, and more efficient means of transportation, thus solving many of the problems that perpetuate the cycle of poverty.

But time and again, the waste workers we spoke with told us that making more money was not their only priority. Often, it wasn't their top priority. Instead, when it comes to quality jobs, waste workers offer four main desires: consistency, growth in income, respect, and security, both physical and occupational (*see chart 1 and 2*).

Chart 1:  
Waste employees' top 3 priorities

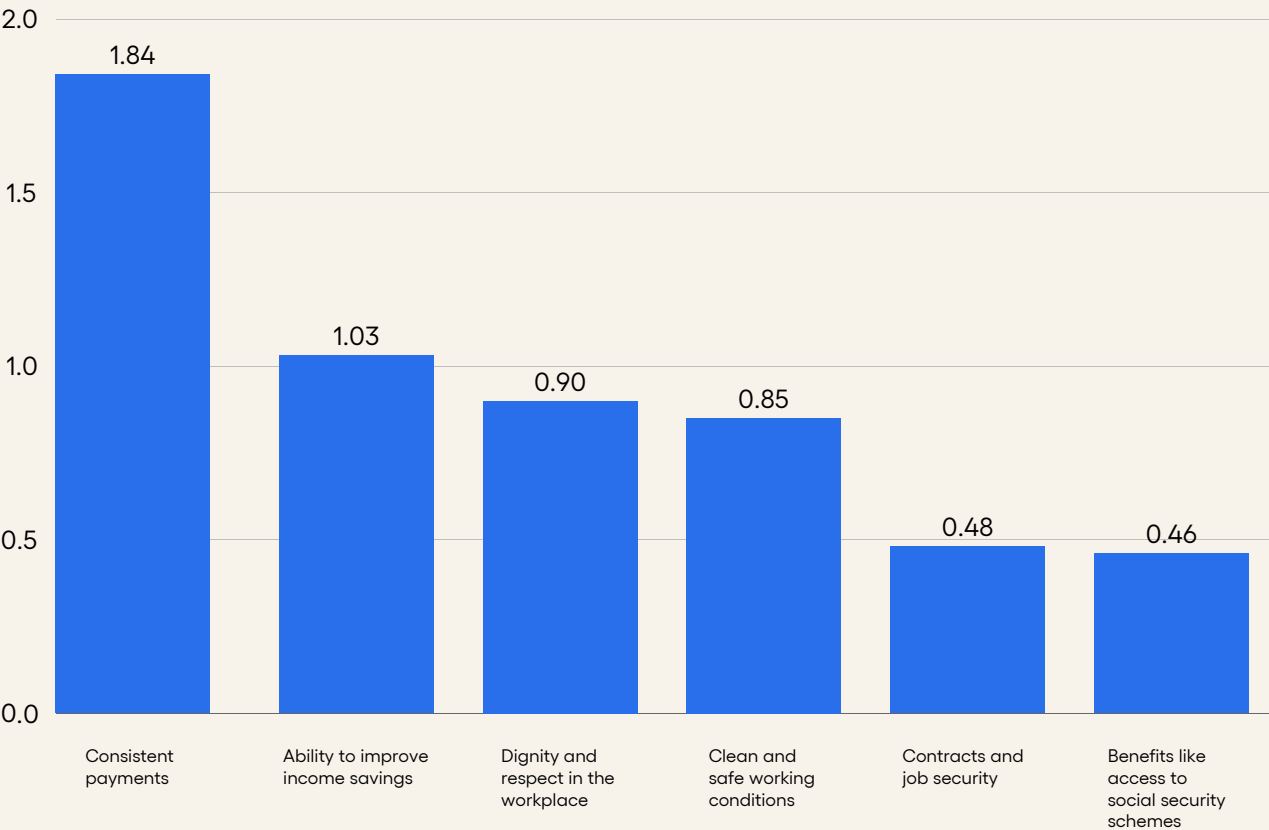
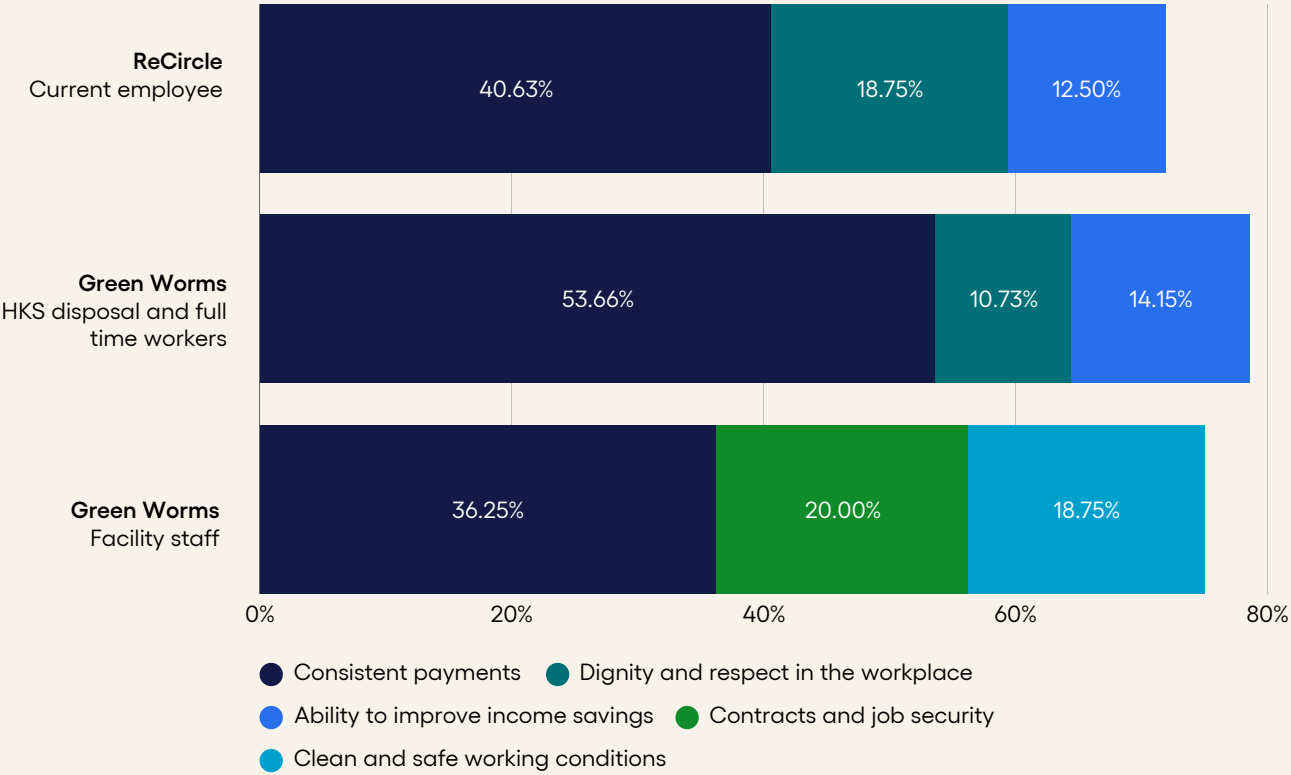




Chart 2:  
Percentage of waste employees selecting the top option.



## 1. Consistency enables financial security and upward mobility

Workers, especially women, overwhelmingly told us that consistency of income was their top priority, even more than the amount of income they were making. **Eighty-six percent of waste workers listed consistent payments in their top three job priorities;** 48% ranked it number one, by far the highest choice.

**“It feels good to have a steady income, knowing that I can count on getting paid regularly. This job has brought stability to my life, and that is an improvement for me.”** Female HKS worker, Green Worms

Regular work at a steady wage that is paid on time enables financial security and upward mobility. But it is difficult to find in lower-income India.

**“With consistent income, I am able to pay off my earlier debts and as a sole earning member I can run the house and education of my kid. I am glad that I can clear the debts and start saving soon.”** Female facility worker, Green Worms

In the case of Green Worms, 32% of collectors surveyed, and most of our focus groups, had previously been employed in the Mahatma Gandhi National Rural Employment Guarantee Act 2005 (MNREGA), a federal workfare program that offers part-time community work. Eighty-seven percent reported they would be unable to find similar quality work elsewhere.

**“Alternate sources of employment for me would be in construction or as a saleswoman in a small shop. In both cases payments are not consistent and I don’t get any emergency leave, and I could get fired very easily.”** Female facility worker, Green Worms

**“Before, I used to work as a laborer. Sometimes there was work, sometimes not. Here, there is consistent work and I get paid regularly.”** Female facility worker, ReCircle

## 2. Respect is fundamental to workers’ sense of dignity

Workers in India’s informal sectors are accustomed to being disrespected at work. We heard experiences of domestic laborers being yelled at by employers and waste workers being treated like garbage rather than members of the community. Workers told us their families and communities initially referred to their jobs as working with ‘कचरा’, or kachara, which carries a connotation of filth.

**“In the beginning people used to mock and ridicule us. That has changed. Now they give us food and water. They prepare the waste to be taken away prior to us reaching their homes, as if they’ve been waiting for us. Waste disposal is a huge trouble for common people. Us doing our job regularly is a big help for them.”** Female HKS worker, Green Worms



**“Respect and recognition have increased both in the market and at home. Everyone now asks and values what I say; my words carry weight.”**  
**Female facility worker, ReCircle**

Dignity and respect — in the workplace, community, and at home — is a top priority for workers. Multiple women told us they had chosen to leave decent-wage jobs as domestic helpers because they were not treated with dignity. As one woman put it, “We can make money anywhere, but we can’t get respect everywhere.”

**“For women to work, safety and respect are paramount. Even if the salary is lower, a positive experience is important.”** Female manager, ReCircle.

**“I am motivated to come to work. I am treated with respect, which makes me even more excited to do my work properly.”** Female facility worker, Green Worms

### 3. Without safe working conditions, there is no dignified work

Waste workers want to be safe at work, but their occupation poses unique threats to physical safety; without adequate sorting of waste, they can be exposed to dangers from syringes, broken glass, dirty diapers, and worse. Waste produces dust and odor, is flammable, and attracts insects and pests.

One supervisor told us: “In manufacturing, you have specifications and standards. In waste, anything can happen.” Without household standards for waste segregation, clear policies on workplace conduct, and adequate equipment and facilities, there can be no dignified jobs in the waste sector.

**“We have access to safety equipment, and this has helped us to work everywhere. For example, we can wear gloves and sort out the wastes, because there are sometimes broken glasses in these wastes.”**  
**Female HKS worker, Green Worms**

Security goes beyond physical safety. All of us have lives beyond work. But for informal workers, life events such as weddings, funerals, or festivals can jeopardize livelihoods, if they force time away from work. An employer who offers flexibility and understanding can help workers live full lives, earning loyalty along the way.

**“It was my son’s wedding and my employer gave me three months’ salary as an advance. I was able to throw such a big party for him. I was also allowed to take a month’s leave and came back to the same job. I’m lucky to have such employers.”**  
**Female facility worker, Green Worms**

# Emerging waste enterprises are meeting worker demands

Waste workers are unequivocal about what they want at work. The question becomes: Can waste enterprises deliver and are some of them already doing so? The waste workers we interviewed answered with a nearly unanimous and resounding “Yes.” As emerging enterprises like Green Worms, ReCircle, ReCity, Saahas, WeVOIS, Waste Ventures, and EcoSattva revamp the waste sector with innovative models, they’re also, in the process, creating more consistent, respectful, and secure jobs.

## 1. Transparency builds trust between workers and management

Workers highlighted specific actions or initiatives that the companies we surveyed are taking to make their jobs more consistent:

- Offering predictable schedules: Knowing that they will get 26 to 28 days of work in a month, at a certain wage, has outsized effects on financial planning.
- Prioritizing worker payments: Green Worms has set up its payments so that line workers at the factory are paid first, followed by drivers and then managers. One Material Recovery Facility (MRF) worker said with pride: “We get paid first, even before our managers or the owners of the company.”
- Paying transparently: Workers appreciate getting paid to their bank account without any hassle or unplanned deductions. For workers who are paid by volume of waste, they have visibility of the amount of waste weighed and their rate, which determines their wages at the end of the month.
- Paying more: Increased consistency is leading to increased incomes for

workers. Nearly 90% of those surveyed said that their incomes had increased since hiring.

**“Before Green Worms there was no fixed timing for the work schedule, but Green Worms established a fixed and regular work schedule. Work will begin at 9am and end at 5pm.”**  
Female HKS worker, Green Worms

**“In my previous company, the work was seasonal, but the work at Green Worms is regular. The salary is fixed, and I am able to save and have benefits like provident fund and employment insurance.”** Female facility worker, Green Worms

## 2. Legitimacy fosters respect in waste work

Workers took pride and security from working in a “real job,” a phrase that was repeatedly used. The symbols of legitimate work, however basic, mattered deeply to employees. Uniforms, ID badges, lockers, a well-kept workplace; these are visible and confer a sense of stability that informal alternatives lack. Companies were deliberate in creating and reinforcing these feelings. One manager told us that their goal was to “make working at the facility [feel] like working at a factory.” One hundred percent of employees agreed (76% strongly agreed) with the statement, “At work, I am treated with respect.”

**“The same neighbors who felt I was working in a filthy job now want to work here with Green Worms. They see the benefits of a good employer who pays salaries on time and treats us with respect.” Female facility worker, Green Worms**

This is especially important in a profession that is ignored or derided. Multiple people described their initial apprehension to working with waste before realizing that, as one manager put it, “Someone has to do this work.” Others talked about taking pride in creating a cleaner community and greater good for the planet.

One of the biggest shifts was in the community’s perception of their jobs. Five out of six employees (83%) felt that the way their community views their job has improved since they started working with the company.

**“People did not respect me much initially. But now, when I say I am with Haritha Karma Sena, it is much better. People now understand the importance of my work. They greet me politely and sometimes even offer me water or tea. This change in attitude shows that the community respects me more now.” Female HKS worker, Green Worms**

### 3. Listening to workers leads to better outcomes

Companies are developing channels for feedback and making changes as required, whether it is the design of the facility, complaints, or simply their needs. One facility worker proudly showed us the

change in loading and unloading areas that he had been able to bring about in the facility that helped reduce drudgery and improve his efficiency level.

Founders of these companies make it a point to visit the facilities and hear from the workers directly, ensuring regular interaction between corporate staff and facility workers. When a founder and his management team eat lunch together with workers on the facility floor, it transcends expectations and sends a message that the new waste sector can be different from the old.

**“If we have any complaints or issues, they tell us to give it to them in writing and they will find solutions for everything. If we have any problems in the field, we can directly call the office and they will help us out immediately.” Female HKS worker, Green Worms**

One key example came when Green Worms conducted an employee survey and found that its line employees were severely in debt; the average employee had 2.5 lakhs worth of debt. In response, Green Worms began piloting a zero-interest loan product for workers in good standing, which would help them refinance their debts. ReCircle has offered similar salary advances for trusted employees. These kinds of financial tools empower workers and build loyalty.

**“The most important thing about Green Worms is the trust they have been able to build with us. They listen to everything we have to say.” Female HKS worker, Green Worms**







## Despite gains, waste workers still want better conditions

Waste workers were grateful for the improvements they've experienced since joining their new companies. At the same time, they made it clear that there is still room to make waste work more dignified by improving wages, increasing the quality of waste, and creating better conditions for migrant workers.

### 1. Wages are still relatively low and need to be improved

The amount of income was the second priority across the workers we surveyed and the first for many of the men, especially migrant laborers. Despite 89% of workers saying their wages had improved, only 15% said they had increased significantly. This varied by job: over a third of collection workers (37%) said their income was not enough to meet expenses, compared to just 5% of facility workers.

**“Even though I have daily work now, it is still tough to cover all these expenses with my current income. I hope for a salary increase to better support my household needs.” Female HKS worker, Green Worms**

Green Worms, ReCircle, and other innovative enterprises in the waste sector are complying with minimum wage requirements and providing additional benefits, but raising wages above the legal minimum remains a challenge. Low wages are a factor of low material margins in what is still a brutally efficient value chain, as well as a huge supply of low-wage labor. But this is a serious problem to overcome in order to create more dignified work.

Companies are tackling this through skilling and training, promoting within, and rewarding work:

- **Tech and training:** 87% of workers felt their way of working had improved (33% significantly improved) since joining their company. Employees developed new skills, received training to operate machinery, and learned to manage projects. This has improved efficiency and offered transferable skills.
- **Promoting from within:** Multiple companies told us they had built strong management by promoting line workers and drivers, people who had on-ground experience of the business and could relate to workers. Those promotions also send a clear signal that hard work and excellence will be rewarded.

### 2. Creating a safe waste management environment starts at the source

The workers we interviewed are all operating in the plastic value chain but talked about the discomfort and disrespect they felt when dealing with dangerous and dirty waste.

**“The waste sometimes is so filthy that workers in the facility vomit. I find it hard to motivate them...I don't have a choice but to get involved myself in disposing (of) the dirty waste. I wish households knew what exactly happens to their waste so they segregate better.” Facility manager, Anonymous**

Companies provide workers with the personal protective equipment they require. But in order to create a safe work environment, the waste needs to be safe. Controlling the quality of waste is a difficult problem for the private sector to solve;

that responsibility ultimately comes down to the household. Only companies with direct links to households or businesses can influence what they throw away, and those companies are serious about cutting this problem off at the source, using three main tools:

- **Behavior change:** Together with local governments, companies run education campaigns for households. Community members are invited into facilities to see how they work and why proper segregation is important. Building a connection with the downstream effects of their actions and the people who are affected has been a positive tool for behavior change.
- **Positive incentives:** At least one company we spoke with is paying households for the waste they produce. The company monetizes that waste by selling the SKU data (which products the household has used) to fast-moving consumer goods (FMCG) companies. Passing some of that value back to the household creates a strong incentive for better sorting and a virtuous cycle of higher-quality waste.
- **Negative incentives:** Waste removal is a contract between collectors (the workers) and providers (the households that generate the waste). If households break that contract by repeatedly failing to segregate waste, some companies discontinue service after multiple warnings. Other companies can report households to governments, which may levy fines against serial violators.

### 3. Companies must retain and create a safe space for migrant workers

Anywhere from 15 to 100 million Indians are living in a different location from their home because of work.<sup>24</sup>

The geographical disparity in wages within India makes migrating for work an attractive option for people from poorer states with fewer jobs. This large supply of low-wage labor means that migrant workers are often engaged in the most heavy, drudgery-prone occupations, such as construction or waste.

**“I still feel like I am an outsider. The locals don’t treat me the same way. Their language is different. Their eating habits are different. My family doesn’t exactly know what work I do. They are grateful that I can send money back every month. I don’t think I could tell the neighbors in my village that I work with waste.” Facility worker, Anonymous**

Even for companies that want to create better jobs for migrants, it’s difficult to invest in workers who are transient by nature. Many travel home for months at a time and may not return. Attrition estimates were high, over 50% in some cases.

Employers are trying a number of approaches. Companies are investing in housing for migrant laborers, either sharing the cost of room and board or providing shelter without a deposit. Employers try to make year-long commitments, though not all of these may be enforceable.

One company leaned into the reality of its workforce. When one group of hires performed well, the company asked them for referrals. Soon a sizable share of staff were all from a single small region in Uttar Pradesh, referred by one enterprising employee. This created some risks (for example, when they all wanted to return for a wedding at one time), but the connection with that community created more stability.





## Recommendations

### Building the business model for decent work in waste

We are still working to understand the models that can deliver formal, quality jobs at scale in the waste sector. There are promising signs: a range of new revenue models are emerging, several companies have reached over 500 million rupees in revenue, and ULBs are beginning to show willingness to pay a premium to work with more well-organized, socially and environmentally conscious firms. Yet, we are in the very early days of a major shift in how waste is managed, and much remains uncertain. That said, there are at least three major obstacles that need to be overcome for the waste sector to improve people and the planet.

#### 1. Regulators can ensure that waste producers bear the cost of a transition to a formal workforce

The existing plastic waste sector is both highly efficient and utterly unsustainable, relying on human and environmental extraction. Creating dignified jobs in the waste sector will require both increased investment and policies that force waste producers to pay the full end-of-life costs of their products. While some companies are financing the shift to a formal workforce with grants, philanthropy, or CSR initiatives, this is not likely to be sustainable in the long-term.

Other companies are finding ways to make polluters pay: voluntary plastic credits; EPR mechanisms; or environmental, social, and governance (ESG)-aligned partnerships with corporations willing to incorporate ethically and sustainably recycled plastic into their

value chain. Other enterprises are working to unlock more value from their waste, from establishing their own recycling facilities to monetizing data on household waste.

A company like Green Worms shows what is possible when there is both (a) a local mandate for formalized waste collection, and (b) producers willing to pay for the formal collection, segregation, and disposal/recycling of plastics. The model works by internalizing the full social and environmental costs of waste.

Such conditions are rare in India (or elsewhere). Few geographies have mandated collection like Kerala's, and voluntary schemes are not commensurate with the size of the problem. Current EPR guidelines and certificate fees do not reflect the full human cost of managing waste. A sector-wide shift requires policy that enforces producer responsibility and channels revenue towards building a dignified workforce.

**“Without a local policy, it is very difficult to profitably run a household waste collection model. We have to find ways to diversify incomes from that waste collected.”**

**Founder, Anonymous**

#### 2. Companies can automate waste within a human-centred framework

One company was proud to tell us about deploying automated baling machines that each replaced two workers. Another told us how hard it was to bring new conveyor belts online; workers were uncomfortable with a new way of sorting. The future will bring more automation:



bag-opening machines, automated quality control, even AI-powered sensing to read Universal Product Codes off plastic waste.

**“I don’t want to automate everything even if I can afford to scale. My aim is to automate any activity that requires direct body contact with waste or is physically straining, such as baling and loading/unloading. There are companies who have tried to automate many processes like segregation as well, but then how will I be able to generate livelihoods for so many people?” Founder, Anonymous**

There will always be a need for humans in waste management, particularly in more idiosyncratic areas such as household

collection. Even workers displaced by auto-balers found more productive tasks within the same company. And the huge supply of low-wage labor in India, combined with the drudgery necessary to sort unsegregated waste, will make the transition to machinery slower. But a formal waste workforce will hopefully be made up of fewer, more productive, and better-compensated workers.

However, technology and formalization are value-neutral; we must work to ensure that waste workers receive a fair share of the value generated from that waste and that their compensation rises in line with their productivity. And this does not obviate anyone of the responsibility to invest in the education, infrastructure, and social safety net needed to underpin a transition.



### 3. Funders can incentivize impact and foster collaboration to address the waste crisis

While the waste management market is estimated to grow from \$15.82 billion in 2025 to \$27.90 billion in 2034, investments in informal workers remain minimal and often overlooked.<sup>25</sup> For us at Acumen and for other funders in the ecosystem, the call to action is clear: We must mobilize much more funding to support enterprises explicitly creating better jobs for informal waste workers.

#### **Form collaborative alliances to both support enterprises at various stages and advocates for regulatory changes**

Climate-focused investors and funders have the opportunity to create investment vehicles that support enterprises prioritizing not only innovative technologies but also the well-being of waste workers. By forming collaborative alliances, funders can support impactful enterprises at various stages with long-term, patient investments — including grants, equity, project debt, and working capital — that meet the diverse needs of waste enterprises, enabling them to scale and drive meaningful change. Additionally, exploring innovative blended models that incentivize social and environmental progress while maintaining business viability, would provide significant value.

#### **Strengthen collective action to advocate for cohesive policies and regulatory changes**

While the waste entrepreneurship sector in India is small and evolving, many enterprises operate in isolation. Given the magnitude of the waste crisis and the shared challenges faced by many enterprises, collaboration is essential. Forming a unified group that collectively demonstrates the sector's value to public and private stakeholders could be instrumental in advocating for cohesive federal and state-level policies and regulatory changes that address real-world challenges. Holding authorities accountable for the intended outcomes of laws and policies is crucial for progress.

#### **Prioritize academic and action research: reporting, narrative building, and developing standardized metrics**

Waste enterprises and funders must prioritize key activities such as academic and action research, reporting, narrative-building, and developing standardized impact metrics. These efforts will not only attract investment but also foster partnerships within the sector. By embracing new ways of organizing production and communication, the industry has the potential to shift from serving narrow elite interests to laying the foundation for widespread prosperity.

# What Acumen plans to do

## 1. Support diverse business models creating better jobs

In our pipeline, we see various models working with different types of workers — directly, indirectly, upstream, and downstream — all seeking to innovate and create better jobs. Our aim is to invest, accompany, and learn from these diverse approaches, to understand the many ways better jobs can be created and scaled. We intend to showcase these as role models for the broader sector to follow.

## 2. Build a decent jobs impact framework

This research helped us define the core elements of decent jobs for early-stage innovators in waste management:

- Consistent, higher, and more accessible incomes
- Safe and secure working environments
- Job stability and predictability
- Opportunities for skill development and advancement
- A sense of dignity and pride in work

We recognize that early-stage enterprises often struggle to meet all these criteria at once, highlighting the need for a stage-appropriate impact management framework. Such a framework can create value at multiple levels:

- For our portfolio companies and the broader waste management sector: A practical tool to measure, track, communicate, and continuously improve job quality outcomes over time.

- For companies funded through this initiative: A way to identify key gaps and opportunities to add value around decent work commitments, through strategic guidance and technical assistance.
- For Acumen's wider portfolio: A resource to shape our workforce development strategy and impact across diverse enterprises and geographies.

## 3. Monitor the balance between job intensity and dignity

Our conversations highlight a real tension: While automation is needed to eliminate unsafe and degrading jobs, it will inevitably reduce traditional roles, many of which persist today because affordable mechanization is lacking. As innovation advances, some of these jobs will be replaced. Our challenge and our goal is to ensure this transition drives efficiency *and* enables worker upskilling, reflecting positive outcomes from past industrial transitions. What we know for certain is that workers are integral to these businesses. Building a stronger, more resilient waste sector demands scaling solutions that keep dignity at the core.



#### 4. Advocate for more patient, worker-centered investment approaches

Creating better jobs remains challenging for companies for a number of reasons:

- Relying on grant funding is typically short-term and unsustainable.
- Investors tend to emphasize technology and environmental outcomes, overlooking human impact.
- Policy frameworks are still inadequate and do not integrate informal waste workers.

- Corporates often pass costs down the chain, leaving workers underpaid and unsupported.

We are advocating for a more holistic, patient investment approach in waste management and circularity, one that values not only environmental gains but also tangible improvements in workers' lives. We call for a more humane investment philosophy, one that integrates, upskills, and uplifts workers as the sector scales. Only by doing this can we drive sustained, systemic change.





## Endnotes

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