

Responsible Sourcing in the Plastic Waste and Recycling Sector: Examples of Inclusive Practices in India



The
Circulate
Initiative

OCTOBER 2022



Introduction

As global and regional brands set growing targets to increase recycled plastic content in their packaging, there is increasing scrutiny of not only the quality of the material procured, but also the fair and ethical treatment of informal waste workers.

The collection of municipal solid waste and plastic for recycling in South and Southeast Asia is dominated by the presence of informal waste workers. There are an estimated 15 million informal waste workers globally,¹ who are responsible for 58% of plastics collected for recycling.² According to recent estimates, there are approximately 2.2 million informal waste workers in India (2017-2018),³ and 3.7 million employed in a similar role in Indonesia's informal sector.⁴ In a recent study of nine Asian cities, the contribution of informal waste workers accounted for over 95% of polyethylene terephthalate (PET) recovered for recycling.⁵

Brands have an obligation to both manage their supply chains and improve the livelihoods of the informal sector working within them. Failing to do so can present tremendous risks to their businesses from a social and regulatory point of view, and result in missed opportunities to build a resilient and vibrant supply chain. As investment continues to flow into waste management and recycling, brands and investors should capitalize on the momentum to improve existing value chains and ensure that they are socially responsible. To do so, they need a comprehensive overview of the social and human elements linked to recycled plastics' procurement to better understand the risks associated with existing practices, as well as where opportunities for change lie.

The Realities of Informal Waste Workers

Plastic waste recovery in emerging markets is increasingly dependent on the work of informal waste workers, who make a living by collecting and selling recyclable waste materials, thereby reintroducing the material into value chains. Besides creating a cleaner living environment for the cities they work in, informal waste workers also contribute to the economy by subsidizing the cost of waste management.

Often unrecognized in the formal economy, these informal waste workers, especially women, are frequently the most marginalized and unsupported members of society, living in poverty while facing routine exploitation. Waste picking is an unsafe job that poses health risks, such as exposure to contaminants and hazardous materials. The risks could potentially be aggravated by a lack of protective equipment and access to healthcare. In the pursuit of a circular economy for plastics, it is essential to consider how their experiences – which are fraught with human rights abuses and low incomes – can be improved.

The Emergence of Responsible Sourcing Practices

Driven by economic and population growth, plastic consumption in South and Southeast Asia is expected to double over the next decade. However, due diligence processes are lacking in the plastics industry, and ensuring that recycled plastics are sourced from a fully transparent and responsible supply chain can be complex, difficult, and time-consuming. Improving waste management and developing effective recycling systems are now pressing concerns for the region, especially as it is already experiencing many of the environmental and social impacts of plastic leakage and pollution.

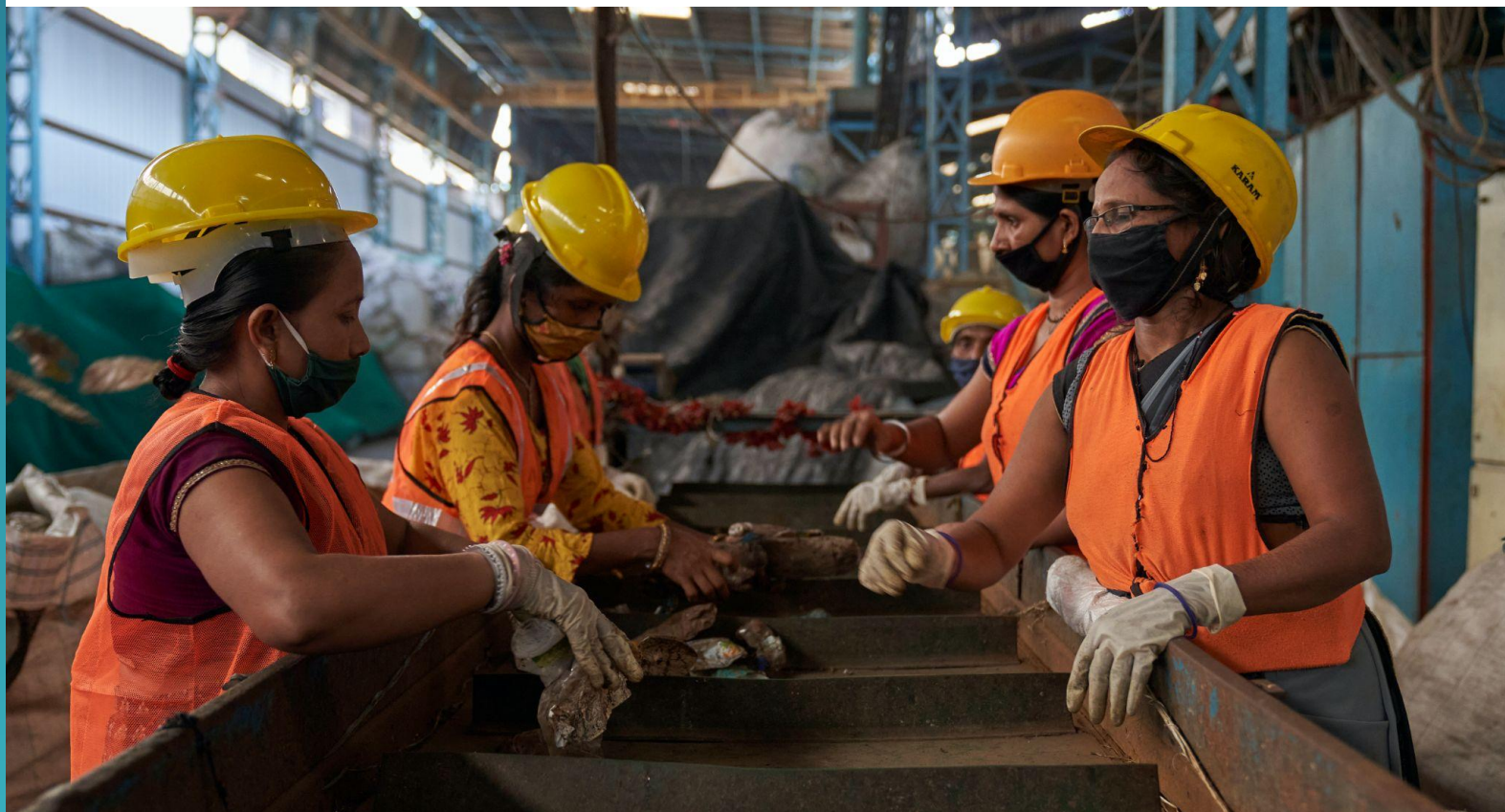
As new regulations around human rights emerge, and with growing public scrutiny, a rising number of multinational corporations have recently committed to improving social responsibility in their supply chains by only engaging with suppliers who comply with standards set for responsible procurement. Increased attention to transparency and the protection of human rights is signaling to recyclers that socially responsible supply chains are the “new normal” of doing business, and procurement contracts will be contingent on compliance. In doing so, corporations are also realizing that their efforts can have a broader positive impact, creating shared value for workers, the environment and their business.

While there is still a long way to go before responsible sourcing practices become the norm in the plastics industry, corporations are trying to take meaningful steps in this direction, and more sustainable models will be needed to keep up with the anticipated growth in demand for recycled plastics. Ultimately, in order to prevent plastic leakage, all stakeholders must address the need to develop systems and approaches that ensure the safety of waste workers and their livelihoods.

Learning from Responsible Sourcing Initiatives

The Circulate Initiative conducted a series of interviews with India-based portfolio companies of our mission-aligned investment partner, Circulate Capital, to further understand the local responsible sourcing landscape.[†] The companies shared the initiatives that they currently have in place and how they benefit informal waste workers in plastic recycling activities. This assessment included understanding the relationship between informal waste workers and recyclers, identifying areas within the supply chain where compliance is required, and determining the impact of the informal sector on the cities’ waste management systems. Insights shared in this paper can be used to support decision-making on policies and strategic initiatives that can be implemented in order to advance equitable livelihoods for informal waste workers.

[†] The Circulate Initiative was established with the support of Circulate Capital to bridge market gaps in waste management and plastic recycling across emerging economies. The two organizations work closely to improve the quality and quantity of investable opportunities and foster the conditions entrepreneurs in the circular ecosystem need to succeed.



The Six India-based Companies Covered in this Study

Dalmia Polypro Industries Private Limited

Dalmia is a plastic recycling company founded in 2006. It uses post-consumer PET and polyolefin waste to produce high-quality recycled materials to be used in fashion, consumer packaging, material handling, and industrial packaging applications. The company is currently processing recycled materials for food-grade applications.

Lucro Plastecycle Private Limited

Lucro is an Indian enterprise founded in 2012 that specializes in recycling difficult-to-manage post-consumer flexible plastic packaging and converting it into granules and high-value end products. Lucro focuses on films and flexible plastic that many others ignore, and through its Plast-E-Cycle™ process, it buys back and recycles flexible plastic from manufacturers, retailers, distributors, scrap aggregators, and informal waste workers, thereby closing the loop in plastic usage.

NEPRA Resource Management Private Limited

NEPRA, founded in 2011, is a dry waste management company specializing in the collection, segregation, processing, and recycling of municipal dry waste, including plastic. It offers an integrated, efficient, and scalable waste management solution that connects all stakeholders along the value chain. As the largest collector and processor of dry waste in India, NEPRA supplies high-quality sorted recyclables recovered from waste to recyclers and manufacturers for reuse in the circular economy.

Ricron Panels Private Limited

Ricron, which began operations in 2013, converts multilayered plastic waste into high-quality materials for furniture, building, and construction applications. Ricron offers an alternative to common building materials, such as plywood, by using an innovative proprietary process that provides quality recycled materials that are high-performing, cost-effective, and provide long-term utility to the building and construction industry.

Rapidue Technologies Private Limited (Recykal)

Recykal, founded in 2015, is a waste-commerce company. It provides end-to-end digital solutions that connect waste generators, processors, recyclers, and brand owners, as well as facilitate material flows and transactions across the waste management and recycling value chain. Its suite of services includes a digital Marketplace, Smart Center Solutions, and an Extended Producer Responsibility (EPR) management solution, EPR Loop.

Recykal Foundation aims to redefine the portrayal of waste workers in the ecosystem by dignifying their contribution to society. The Foundation's goal is to enable a circular tomorrow by bridging the gaps through stakeholder-centric initiatives such as raising awareness, setting-up centers for waste management, uplifting Safai Mitras (rag pickers) and policy advocacy.

Srichakra Polyplast (India) Private Limited

Srichakra is a technology-driven plastic recycling company that began operations in 2010, and provides end-to-end services in recycling and plastic waste management. It has pioneered a recycling process in India to create high-quality recycled PET and polyolefin flakes and granules, including bottle-to-bottle solutions, helping brand owners reduce their use of virgin plastic. Srichakra established India's first and only food-grade plastic recycling facility that is approved by the Indian and European Food Safety Authorities.



Identifying and Analyzing Responsible Sourcing Practices

While the following sections present the current responsible sourcing actions being implemented, they are by no means exhaustive and should serve as a starting guide for companies that are looking to adopt their own practices.

During interviews conducted by The Circulate Initiative, companies were asked to share their responsible sourcing practices and corresponding motivations. Based on their responses, the practices were grouped into four broad categories:

	Social and Financial Support
	Access to Government Services
	Digitization, Traceability, and Transparency
	Compliance Needs

Social and Financial Support

Companies have initiated practices that provide informal waste workers with social and financial support. This includes providing equipment to ensure the health and safety of workers as they go about their waste-picking activities, or engaging these workers as formal employees, thereby enabling greater financial security. These initiatives serve to advance workers' welfare and their livelihoods.

Waste Workers' Welfare

Many informal waste workers are daily wage earners or piece workers, who are compensated based on short-term work arrangements or the weight of material collected and sold. During the Covid-19 pandemic, in particular during lockdown periods, informal waste workers experienced a loss in income owing to limited availability of material to collect and sell, or restricted movements to collect recyclables. To help these affected workers, companies donated personal protective equipment (PPE), such as gloves and masks, to minimize their exposure to the virus, and also provided daily essentials, including food, during the lockdown period. Awareness sessions were also organized for the informal waste workers to educate them on topics such as different types of waste and their recyclability, health and hygiene, and issues with child labor.

Financial Stability

The companies have created policies and practices that have allowed for the engagement of informal waste workers as contractual labor or formal employees, often resulting in a longer period of engagement with the company. The informal waste workers benefit from the fixed hours and having a predictable source of income, in addition to upskilling. When workers are formalized, they are also eligible for benefits provided under the Employees' State Insurance Scheme of India (ESIC), which offers basic socio-economic protection in the event of sickness, disability, or death due to employment injuries. Other features of formal employment include leave and post-retirement benefits, such as supporting the education of workers' grandchildren or any medical needs. The companies may also provide employees with a salary advance if required, which represents a form of financial support.

“NEPRA has formalized the informal sector at Materials Recovery Facilities (MRFs). Some informal waste workers choose not to join the plant because they are happy with free hours of working. We identified the informal waste workers who want to work and seek employment. This involves fixed hours, salary, and different benefits that come with formal jobs. Since engaging with NEPRA, some of the women have become more financially responsible. Previously, they were dependent on their husbands, and used to borrow lump sums from moneylenders/middlemen. With their association with the company, this has given them a rise in dignity and there's a lot of psychological improvement.”

Social Impact - Lead, NEPRA

Social and Financial Support Case Studies

Project Ghar (Ricron)

Ricron, one of the partners involved in Project Ghar, collected and converted non-recyclable plastic waste, such as multilayered plastics, into sheets that were used to build houses for on-the-ground waste workers in India. Project Ghar is an initiative launched by Kimberly-Clark India, in partnership with the Plastics for Change India Foundation, to deliver sustainable housing to waste workers in India. The project concluded in April 2022, diverting 22,500 kg of multilayered plastics and low-density polyethylene (LDPE) from the environment. Besides improving sanitation and providing safe living conditions, the project has generated employment opportunities for informal waste workers by engaging them in the collection of plastic waste.

Education Center (NEPRA)

The Education Center is a social initiative by NEPRA that aims to support the children of informal waste workers. Due to school closures and lack of access to the Internet for online schooling, many children experienced a disruption to their education during the Covid-19 pandemic. By initiating an Education Center, which operates from 2pm to 4pm, informal waste workers were able to drop off their children while they work.

By providing these children with a safe space away from the waste-picking sites, the center has been effective in avoiding the risk of child labor in the sector. It also supports marginalized populations, as informal waste workers can engage in their work without worrying about their children. Currently, there are 96 children attending the Education Center at Ahmedabad, and NEPRA is working to establish two to three more centers in the city.



Access to Government Services

In India, the government has several beneficiary schemes in place for its citizens. However, many informal waste workers are not registered under these schemes, due to a lack of the necessary documents for the application process and/or a lack of awareness of the benefits available to them. Access to these services could go a long way in improving the lives of informal waste workers.

“Currently, there are a plethora of government benefits that are available for underserved communities. Project Adhikaar helps ascertain eligibility and unlock access to these benefits by helping them (informal waste workers) navigate the registration process. As a next step, we will be launching a helpline to assist them in availing the benefit should the need arise once they have been enrolled.”

Managing Director, Dalmia

Identity and Health Cards

Accessing benefits such as health insurance or subsidized finance opportunities requires legal documentation, such as identity cards. However, many informal waste workers do not have these personal identification documents, which prevents them from being able to obtain these benefits that could go a long way in alleviating some of their financial burdens. As companies directly engage with informal waste workers, they are able to facilitate the process of issuing identity cards. Some have also helped informal waste workers to access health cards, which show the status of their vaccinations.

Bank Accounts

With the movement towards a “Digital India” and the increasing prevalence of digital payments, assisting informal waste workers to set up bank accounts is a crucial first step towards financial inclusion that can help workers access other banking services. Digital payments also facilitate payment processing, on-time payments, and digital payment records.



Government Support Schemes

Many informal waste workers are unaware of the government support schemes available to them and do not know how to access public benefits. As part of companies' responsible sourcing practices, informal waste workers are informed about these schemes and receive assistance to guide them through the application process.

For example, the Pradhan Mantri Jan Dhan Yojana (PMJDY) scheme ensures universal access to banking services, such as a basic savings account and pension. Some schemes, such as the Pradhan Mantri Jan Arogya Yojana (PMJAY), which offers insurance to families from the underprivileged section of society, are only available to those from lower-income backgrounds. Aside from these schemes, the government also offers direct cash transfers to provide financial support to citizens who require assistance.

Access to Government Services Case Study

Project Adhikaar (Dalmia)

Through Project Adhikaar, Dalmia hopes to help waste workers in their supply chain by facilitating the process of obtaining identity cards and applying for insurance policies and beneficiary schemes from the government. An initial pilot with 500 people that was carried out in 2022 has concluded, and an expansion of the project will be considered.

As part of Dalmia's corporate social responsibility, and in line with helping informal waste workers access government aid, the company also intends to set up a hotline, with the hope that it will increase the convenience of getting information on support schemes and provide them with the necessary guidance on administrative processes, as well as any other work-related questions that they might have.



Digitization, Traceability, and Transparency

Digitization in waste management is becoming increasingly widespread, enabled by the rapid advancement of technologies and the transformation of India into a digital economy, as well as recent EPR regulations. Digitization can enhance traceability and improve the efficiency of operations, and promotes transparent practices across the supply chain.

"All our collection centers clearly display the value of the material, so that people know the prices they will receive for the waste, and it ensures transparency of prices. In a lot of other cases, waste workers only know the value of the material they would like to sell when they bring it to the collection centers."

Chief Sustainability Officer, Lucro

Mapping Waste Flows

To increase traceability, companies are exploring waste flow mapping from collection to end markets, for example through QR-coded material, to ensure that it is sourced ethically. Data points could include the types of materials traded and the prices they are traded for at each point of the supply chain.

Mobile applications are one way that companies can track material flows. They can facilitate the transition from manual to digital documentation, which the Indian government is moving towards as well. Dalmia is developing an app to track material flows using IBM's Hyperledger Fabric (blockchain technology), which is intended for use by all stakeholders along the supply chain, up to the consumer. Data points that can be tracked include the origin of the material, as well as the amount of recycled material in the product. Aggregators can register on the app and will be able to upload photographs and documents.

Digitization, Traceability, and Transparency Case Study

Software at Collection Center (Lucro)

At Lucro, all materials received through their collection centers are recorded using tracking software developed by Lucro to capture data, such as the type, origin, and amount. Every bale of material has a QR code linked to it for ease of tracking.

As part of the development of the software, Lucro partnered with ICICI Bank to create a way for waste workers to easily set up bank accounts and facilitate payments. At the collection center, prices of the materials are displayed, and all payments are made to waste workers as digital transactions to registered individuals, improving the transparency of the supply chain. Pre-segregated waste has a higher value, and informal waste workers are sometimes brought into the segregation facility for training so that they understand how waste is segregated and to what specifications.



Compliance Needs

Legal requirements present a fundamental need for businesses to conduct their operations according to a set of established standards. While abiding by these regulations is not necessarily a responsible sourcing initiative driven by companies, many global procurement standards and responsible investment principles require compliance within their supply chains. These are crucial when local regulations may not be sufficiently enforced.

“Informal waste workers’ livelihoods are still not part of the consideration for EPR mandates. The exception is ... [a few] brand owners who are trying to audit the payment receipts. When collection centers buy material from informal waste workers, there’s more scrutiny around the transactions.”

Chief Impact Officer, Recykal Foundation

“There is a certification that is required by brands as well when you’re selling material. There is a certain level of authentication they need from third parties to make sure they are purchasing waste material. It’s definitely compulsory – the final GRI (Global Reporting Initiative Standards) that goes into the invoice is something that every brand requires. (...) Every certification we’ve gotten has come out of some requirement we have seen.”

Chief Sustainability Officer, Lucro

Supplier Agreements

Aside from directly working with informal waste workers, companies are also actively seeking to ensure their supply chains comply with ethical practices through contract terms in supplier agreements. Some of the contract terms relate to enforcing a minimum wage requirement, ensuring no child labor is involved, and providing safe and healthy working conditions for workers. Suppliers who are found to be non-compliant will not be engaged, and the companies may also alert other recyclers to avoid contracting the particular supplier(s).

Third-Party Certifications and Audits

Third-party certifiers carry out a series of checks and audits against a predefined set of standards. The procurement of these third-party certifications serves as a form of assurance to customers by validating that a company is compliant with mandatory standards and specifications. The ISO 9001 certification, the world’s most recognised Quality Management System (QMS) standard, is used to certify that companies’ products and services are of high standards and aims to help companies effectively meet the requirements of customers and other stakeholders. There are also other certifications that are based on a company’s ethical practices, such as the Supplier Ethical Data Exchange (SEDEX) certification, while others may certify products that are obtained from recycled materials, such as the Global Recycle Standard (GRS). Audits can also facilitate EPR, providing recommendations on the best practices that a company can undertake.

Looking Ahead

Corporations today are put under growing pressure from multiple stakeholders – governments, shareholders, investors, employees, and consumers – and face increasingly stringent requirements to protect the safety and dignity of workers across their supply chains. Failing to do so poses immense risk to businesses and the need to integrate socially responsible sourcing practices and policies within existing models has never been more critical. In the context of the recycling sector, companies have significant opportunities to ensure ethical practices and measures are taken in their supply chains through regular engagements with the informal waste workers.

The practices described in this report provide a brief snapshot of those employed by a select few companies in India's plastic waste and recycling sector. While they may not yet address the systemic challenges of informal work in the supply chain, these activities represent emerging practices that address the more pressing issues of protecting human rights and meeting the expectations of global supply chain standards. Companies can choose which practices are most meaningful to them and can drive the greatest impact in their markets, not just to capitalize on the growing demand for sustainable businesses, but because they believe in being a part of the solution to drive responsible sourcing.

Responsible sourcing practices will increasingly be required in the industry. The challenges and complexities of plastics supply chains mean that responsible sourcing must be a joint effort by several stakeholders within the ecosystem. Moving forward, it is imperative that companies place human rights and social responsibility at the center of their business operations. In addition to implementing these practices in their own businesses, they also need to work with other upstream suppliers to adopt sustainable practices that treat informal waste workers fairly and ethically, as well as supply reliable material to downstream companies. This will create a cascade of sustainable practices that flows throughout the entire supply chain.

By adopting responsible sourcing practices, companies can build their reputations as champions of ethical business behavior, which will in turn foster greater public trust and meet the expectations of governments, consumers and shareholders alike. The success of these efforts will depend on the level of commitment from companies to make significant and sustainable changes to their business practices. It is time for a paradigm shift in the industry where companies start making decisions that are better for both their bottom lines and the livelihoods of those who are at the core of their operations – the informal waste workers.



Acknowledgements

Authors



Ellen Martin
Director of Impact and Insights
The Circulate Initiative



Juline Lew
Research Analyst
The Circulate Initiative

Supported by

Shamina Mohamed
Communications Manager
The Circulate Initiative

Umesh Madhavan
Research Director
The Circulate Initiative

Interviewees

Aditya Dalmia
Managing Director
Dalmia Polypro Industries Private Limited

Rahul Chaudhary
Director
Ricron Panels Private Limited

Pratibha Dewett
Chief Sustainability Officer
Lucro Plastecycle Private Limited

Sonali Beeraka
Social Impact - Lead
NEPRA Resource Management Private Limited

Anirudha Jalan
Co-Founder and Chief Sustainability Officer
Recykal

Viiveck Verma
Chief Impact Officer
Recykal Foundation

Vijaya Raghava Swaroop Kongara
Head – Waste Management, Sustainability, EPR
Srichakra Polyplast (India) Private Limited

APPENDIX

Organizations Interviewed

[Dalmia Polypro Industries Private Limited](#)

[Ricron Panels Private Limited](#)

[Lucro Plastecycle Private Limited](#)

[NEPRA Resource Management Private Limited](#)

[Rapidue Technologies Private Limited](#) (Recykal)

[Recykal Foundation](#)

[Srichakra Polyplast \(India\) Private Limited](#)

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