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Recycling Class

The Contradictions of Inclusion in Urban Sustainability

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5 The Win-Win Fallacy

I always knew going into business school that I wanted to solve real world problems plaguing developing economies. During one of my travels in India, the filth and squalor deeply disturbed me. However, I realized that something amazing was happening underneath. India was recovering and recycling nearly double that of any developing or developed economy in the world. But the benefits of such a system were not being felt. I wanted to solve all this and I wanted to build an organization that would fundamentally transform the way India saw recycling and plastics. This is how my journey from Silicon Valley to the back alleys of Hyderabad began.

—Banyan Nation investment video made by Impact Investment Exchange

“Informal, Illegal, and Largely Invisible”

Banyan Nation’s investment video was made by Impact Investment Exchange (IIX), a Singapore-based organization that connects Asia-based social enterprises with impact investors. Banyan Nation, funded and supported by IIX, is one of many recent start-ups that have emerged in India’s waste management landscape. The 2018 revamp of India’s Solid Waste Management Rules to emphasize resource recovery and recycling, the launch of the Swachh Bharat Abhiyan, or the Clean India Mission, and a global push toward the circular economy has prompted young, educated, often foreign-returned Indians, like the ones featured in this video, to become waste social entrepreneurs. In keeping with a neoliberal ethos, these new enterprises deftly combine a narrative of doing good with a technologically driven approach to profit making.

If India already recycles more than other developed or developing economies, what problem is Banyan Nation solving? As one of the founders of Banyan Nation explains, “recycling activities in India are driven by market forces that are informal, illegal, and largely invisible. Millions of rag

pickers today scavenge street corner bins and landfills . . . who then sell to the *kabadiwallahs*, who then sell to the back-end aggregators, who then finally sell to the recyclers. The goal of such an industry, really, is to recover the materials at the lowest possible cost, and at any cost.” The images that accompany his words show industrious “rag pickers” going through municipal bins, working in the shadows of the night. Men quickly sort through and categorize materials by hand in dark and dingy rooms. He continues, “We started off by first tackling plastics. If you think about it, plastics is perhaps the most versatile invention of our time, but the single use nature of plastic means it has become an ecological and environmental poison. A lot of the plastics ends up in landfills. Whatever plastics is recycled is recycled in a very rudimentary manner. The back-end recyclers bite, bend, and burn plastic in order to identify the resin and grade of the plastic, forcing producers at the end of the value chain to depend on hundreds of such recyclers for consistent, quality recycling.”

Invoking words such as filth and squalor and describing how workers “bite, bend, and burn,” the video’s narrative presents informal work as low-tech, polluting, and labor-intensive—the same narrative is used to advance formalization and privatization (Corwin 2020; Tucker and Anantharaman 2020). It argues that the dispersed, small-scale nature of informal recycling firms makes it hard for brands to source adequate amounts of recyclate, impeding an environmentally beneficial transition to a circular economy. The narrative also frames plastic as a necessary evil, and the cause of plastic pollution as poor management and inefficient recycling as opposed to overproduction. The video presents Banyan Nation’s technological fix as it cues the dramatic music:

The need of the hour right now is a formal recycling system, which ensures a superior quality and the ability to recycle the material that has entered the system more than once. To do that we have started off by building a very simple app in Hyderabad where we map over 1,500 stationary recyclers. This data gives us a bird’s-eye view of the city of Hyderabad, data such as the amount of waste coming out of your house and data on the local efficiencies of the collection and transportation of waste. At Banyan, we have used mechanical and thermal testing techniques to produce a high quality recyclate that rivals virgin plastic. When the product reenters the waste value chain, its ability to be recycled increases by a factor of three. . . . Today we have established a proof of concept, we have integrated the supply chain, we are producing some world-class granules that

brands could use. We can scale not only across cities, but I also think we have the potential to scale across vertical.

Alongside this declamation, the viewer sees the Banyan Nation facility: two women wearing gloves, masks, and hairnets are sorting mixed plastics on a conveyor belt, while another feeds plastic pellets into a machine that then spits out a bright green resin. They work inside a large warehouse surrounded by orderly piles of discards. These workers are clearly not of the same social class as the founders, who, we are told, are engineers, MBAs, and former nonresident Indians (NRIs).¹ While the workers are silent, toiling figures in the background, the investment video lauds the commitment of Banyan Nation's founders. One suited investor suggests to the audience, "If you look at what [they] are doing, having given up what could have been otherwise extremely, I am sure, profitable careers, is to have built a technologically driven, technologically innovative organization." Another suited guy with an American accent chimes in: "Now you have a group of smart guys who are engineers or business guys, coming from Silicon Valley, getting advice from investors, trying to build a sustainable, scalable business." But the sacrifice is not in vain. Banyan Nation has gained a reputation after winning the Dell Circular Economy People's Choice Award at the World Economic Forum in Davos in 2018. L'Oréal, one of the world's largest cosmetics companies, and Tata Motors, India's biggest automaker, source recycled plastic from Banyan Nation.

Underemphasized in the video is an aspect critical to Banyan Nation's business model—its continued reliance on informal waste collectors. Banyan Nation argues that the need of the hour is a formalized recycling system, but it has integrated informal waste collectors into a mobile, digital, and Internet-of-things platform, through which it tracks waste flows in the city. It provides this tracked data to municipalities to help deliver data-driven waste management services. It employs waste sorters in its facility because manual sorting achieves a higher quality recycle. In turn, it offers safe and sanitary working conditions, fair wages, retirement benefits, and health insurance for its workers. And, to informal waste pickers, it promises greater market access and better prices for reclaimed materials.

Start-ups like Banyan Nation claim to be vanguards of a transition to an inclusive circular economy. The circular economy is a global sustainability paradigm promising both environmental protection and continued

economic growth through “closing loops.” Supporters of this paradigm, from think tanks like the Ellen MacArthur Foundation to intergovernmental organizations like the World Bank to investment firms like Circulate Capital, are looking to partner with informal waste workers by offering what is described as a sustainable development triple “win-win-win”: local and global environmental benefits (better waste management, less pollution, and reduced reliance on “virgin”² materials), social benefits (such as higher and more stable incomes for informal waste workers), and economic wins for corporations looking to secure access to material resources and adhere to increasingly stringent environmental regulations.³ Is the circular economy finally a point of convergence for the interests of multinational corporations, municipal governments, middle-class performative environmentalists, and waste pickers demanding better livelihoods?

While infrastructural inclusion is often the hard-won victory of long years of struggle by waste-picker organizations, in this chapter, I warn that inclusion could be a double-edged sword. The win-win narrative of circular economies obscures a tension between profit accumulation and material improvements to the lives of informal workers. Because dominant sustainability discourse is replete with neoliberal common sense that promotes economic efficiency and market-based solutions to environmental and social problems, the outcomes for informal waste workers are differentiated and uneven. When initiatives privilege economic growth over social priorities, and waste pickers are patronized as “poor others” needing self-improvement, management, and supervision, *accumulation by inclusion* is the outcome. It subjects waste pickers to new regimes of discipline that can reproduce a dehumanizing caste-based division of labor. Thus, although transnational partnerships can help some entrepreneurial waste pickers enhance skills, improve livelihoods, and imagine social and career mobility for themselves and their children, these benefits are not available to most actors in the informal waste economy, who continue to be relegated to the role of silent, abject figures at the margins of global resource flows. In the coming years, as the circular economy policy agenda grows in prominence at both climate summits and in the negotiation of the global plastics treaty, Bengaluru’s story issues a warning—economic inclusion in the absence of a clear commitment to social reform and reparation will reproduce racialized oppression.

The Waste-Less Frontier of Neoliberal Sustainability

Urban struggles over the environment and livelihood articulate with transnational sets of questions around how to restructure global capitalism in a time of overlapping crises.⁴ Accelerating fears of resource shortages, the search for new productive frontiers of economic growth, combined with heightened awareness of how waste and plastic pollution contribute to climate change and biodiversity loss have coalesced around the circular economy. This term is applied to diverse grassroots practices, policy initiatives, industrial processes, and business models that try to move the economy beyond a linear “take-make-waste” model to one that “closes loops” by keeping materials in circulation as long as possible. Circular economy plans and programs have intensified the resourcification and commodification of waste at multiple scales, with more coordinated attempts to reclaim, repurpose, and recycle waste back into inputs for production (Kama 2015; O’Neill 2019; Savini 2019). Municipal solid waste is no longer simply a local externality to be managed, but a global resource and profit frontier to be mined.

The circular economy is an attractive proposition for corporations and national governments looking to “future-proof” capitalism by reconciling growth with environmental protection (Mah 2021). When China’s National Sword initiative banned the import of plastic waste into what was until recently the world’s plastics graveyard, consumers in the United States and Europe woke up to the stunning realization that their carefully sorted plastics were not being reborned locally but rather jettisoned off to faraway lands (Heiges and O’Neill 2022). The flow of “disposables-as-recyclables” (Liboiron and Lepawsky 2022, 71), which buttresses the status quo of throwaway cultures, was interrupted. As the alchemy of curbside recycling is demystified, concerned actors are paying more attention to where plastics end up. At the 2022 UNEA meeting in Nairobi, Kenya, member states of the United Nations committed to a legally binding treaty to address the plastic problem from production to disposal. Plastic waste producers are now under increasing pressure to demonstrate that they are making efforts to reduce the quantum of plastic pollution that enters our rivers and oceans. Curbside recycling schemes are no longer convincing performances of environmentalism. New props and actors must enter the stage.

Looking to assuage environmental anxieties and avoid binding regulations, corporations are turning to circular economy solutions. Some are

promising to shift to reusable packaging materials, others to take back used packaging, and many more, like Coca-Cola and Pepsi, are committing to the easiest shift in their production processes: replacing “virgin” with recycled plastics. The move to use more recycled plastic is also an economic strategy to preempt legislation that could ban some plastics altogether (Liboiron 2013; Mah 2022). In their search for plastic and textile feedstock, big brands and circular economy proponents are turning to waste pickers, waste aggregators, and small-scale recyclers working in the informal economy in the Global South.⁵

It is in the informal settlements and back alleys of cities like Bengaluru that most global resource recovery work takes place. The informal recycling sector in Asia, Africa, and South America is estimated to be responsible for 58 percent of all the plastic waste collected and recycled globally (Lau et al. 2020). While the EU and UK might propose closing loops within their territories, their plastics are in reality often shipped off to poorer countries—in an expression of waste colonialism (Gregson et al. 2015; Liboiron 2021; Michaelson 2021).⁶

Informal recycling work has long been derided as polluting activity. But as geographer Melanie Samson reminds us, “It was reclaimers’ knowledge and labor that first denaturalized waste, differentiated between waste and value, and expanded the waste-based commodity frontier” (2019, 68). Geographer Julia Corwin (2020) observes that environmental concerns about the hazards of e-waste have been used to secure corporate e-waste markets through devaluing informal labor. To date, most state and corporate-led recycling efforts have ignored or appropriated informal economies, sometimes instituting parallel resource recovery systems from scratch (just like Bengaluru’s ZWM also tried to, until Parisara Tanda got involved). Many of these have failed because of successful protests by worker organizations. But they are also failing because it is hard to recover recyclables and make money from waste without waste pickers and sorters. Why?

Recovering recyclables from mixed waste is time-intensive, and it is not an easy industry in which to make a profit (Millington, Stokes, and Lawhon 2022). The informal economy can reclaim, divert, and recycle significantly larger quantities of material than the formal economy, particularly when it comes to reclaiming value in postconsumer waste (Gutberlet 2021). Informal economies have endured, despite persistent efforts to eliminate or formalize them, because of their “relative opacity, labor intensity and dependence on

embodied knowledge (*metis*)” (Gidwani 2015), as well as through strategies of practical legitimation (Kornberg 2020). Informal actors are able to stay viable without much capital by charging marginal service fees for pickup services, relying on their embodied expertise and community resilience, as well as the capacity for self-exploitation enabled by socially reproductive relationships of care and coercion (Gill 2009). Manual sorting can deliver cost and material efficiencies that go beyond what centralized, mechanized sorting can provide.⁷ In cities where formalization projects have been launched, informal work still subsidizes formalized recycling systems, resulting in what Patrick O’Hare describes as a state of quasi-formality (O’Hare 2020). This is why even technology-focused start-ups with ambitions of scaling up need waste pickers and waste sorters to build a viable business worthy of investment.

Accumulation by Inclusion

In the past few years, the governmental and corporate narrative on waste picking has shifted from looking to replace waste pickers, or “save” the poor from waste work, to instead looking to “include” or “integrate” waste pickers into new infrastructures and supply chains as a win-win proposition.⁸ To understand this shift, I turn to Marxist economic geographers and what they tell us about how capitalism renews its conditions of possibility. Marxist theories of capital accumulation lay bare the inequities of the twinned processes of dispossession and inclusion that waste pickers are subject to in neoliberal cities.⁹ Drawing on David Harvey’s concept of accumulation by dispossession,¹⁰ Vinay Gidwani argues that waste is a key frontier in capital’s search for productive sites for its renewal (Gidwani 2013a). The (sometimes violent) enclosure of waste from an urban commons that sustained thousands to a tightly regulated resource controlled by private companies seeking profit and a municipality looking to cut costs has dispossessed waste pickers from their sources of livelihood (O’Hare 2022; Samson 2009; Schindler and Demaria 2019). The circular economy’s focus on reclaiming the value in waste to future-proof capitalism puts these dynamics into overdrive, as impact investors flood the coffers of start-ups and set up parallel systems of resource recovery.

Responding to these waves of dispossession, organizations representing waste pickers in Bengaluru, Delhi, Bogota, Soweto, Belo-Horizonte, and many

other places pushed for recognition of waste pickers' contributions to maintaining urban environments and cleaning the city.¹¹ This advocacy resulted in the integration of waste pickers into municipal schemes, alongside other modes of community participation.¹² Exploring how the state responds to infrastructural claims-making, geographer and discard studies scholar Rosalind Fredericks (2018) develops the concept of "governing through disposability" to describe how the neoliberal state takes advantage of people functioning as infrastructure, making ordinary residents responsible for functions that would have been in the ambit of public responsibility. Thus, while residents come to infrastructure to stake claims for citizenship and to renegotiate questions of dignity and justice, the state uses infrastructure to divert dissenting and activist capacities.

The state includes excluded groups, but in subordinated positions. The terms of integration are structured around individualizing, ahistorical, and depoliticized ideas about the poor and about poverty, alongside coloniality and casteism. As sociologist Manuel Rosaldo (2019) describes in studies of waste-picker integration in Bogota, waste pickers navigate and sometimes have to choose between dispossession and exploitation. Geographer Melanie Samson (2019) argues that many of Johannesburg's waste pickers reject or refuse integration on these terms.

Beyond a focus on urban infrastructure or urban livelihood struggles, I offer the term *accumulation by inclusion* to show how waste-picker inclusion efforts in Global South cities are becoming central to how consumer capitalism renews its conditions of possibility at a time of ecological crisis, environmental mobilization, and enduring poverty. Under capitalist social relations, accumulation by inclusion is usually thought of as occurring under the wage relation through the process of proletarianization.¹³ But in a world where work outside the wage is as much the norm as the exception, and where social expenditure in maintaining a productive labor force has dwindled under neoliberal regimes, new forms of accumulation are proliferating. Glassman (2016) uses the term "accumulation by extra economic means" to name the enclosures and forms of accumulation enabled by the uncompensated but essential (gendered and racialized) work of social reproduction, internal to capitalism but outside the wage relation. Immanuel Wallerstein and other neo-Marxists like Nancy Fraser have pointed out that capitalism has always maintained a non-proletarian or semi-proletarian labor force to subsidize accumulation, just as in some cases workers have

resisted their conversion into waged labor to maintain autonomy or avoid exploitative work conditions (Fraser 2021).

The social reproduction of the poor and of racialized others is not recognized as a resource until it becomes recognized as a resource for capital. Waste pickers have both resisted and been kept out of proletarianization. They have simultaneously subsidized capital accumulation through infrastructural labor while suffering abuse, violence, and humiliation. Social reproduction undergirds production and profit-making. Conscripting eco-activism and informal work into governmental programs through recognition and then devolving public responsibilities onto these recognized actors makes socially reproductive work available for capture—as we saw in chapter 4 with the case of DIY infrastructures. The state, start-ups, and multinational companies can obtain free or poorly compensated labor by creating inclusion schemes that play to the middle-class sense of self-importance as well as waste pickers' fear of dispossession.

Accumulation by inclusion is a strategy that keeps waste pickers performing infrastructural labor but with less autonomy than they had before. Policy and market interventions are designed to eliminate aspects of the informal economy that are seen as most problematic—the unprofessional and suboptimal nature of informal waste work through behavior change and self-disciplining. Such a deficit framing, when combined with caste as a force of humiliation, oppression, and control, renders waste pickers always subordinate in relationships. Thus the “extra-economic” means of accumulation operating here include the decriminalization of waste picking, the recognition of waste pickers as a useful governmental category invoked in policy documents, and the reconstruction of waste picking as visible, legible, and legitimate through surveillance and app-based tracking, as well as the reproduction of modes of discipline that are embedded in initiatives to include waste pickers into municipal infrastructures and global value chains. Through these extra-economic means, waste pickers become available as a flexible, cheap, globalized labor force for globalized resource recovery in the circular economy.

Following calls from relational poverty studies to “study up,” instead of focusing my attention on waste pickers or the “poor others” targeted for reform and upgradation by global development actors and the state, I choose to critically examine ideologies and relationships of power and privilege that undergird efforts at waste picker inclusion. Global sustainability

practice is emerging as a key arena wherein poverty and the poor are acted on. Circular economy initiatives linking global brands with informal workers function as “contact zones” in which poverty and the poor are problematized, and class difference is made and unmade. Examining the logics, ideologies, and imaginaries that animate inclusion efforts within the circular economy and other sustainability paradigms will help us understand why sustainability can reproduce injustice despite good intentions.

Most importantly, I bring attention to how the win-win narrative and the (a)politics of conviviality, which are endemic to most sustainable development interventions, obscure the enduring injustices experienced by informal waste pickers in inclusion arrangements. Indeed, that is the key point here. Waste pickers have long subsidized the conditions of accumulation by working with, alongside, and in place of formal waste management systems. The qualitatively distinctive aspect of this latest phase of integration is that it is presented as a win-win proposition that downplays the unavoidable trade-offs among economic growth, social equity, and environmental protection (see Liboiron and Lepawsky 2022, 138–144, on incommensurability). By recognizing and including waste pickers, exploitative and dehumanizing relations are repackaged in a manner that is more palatable to those working toward inclusive global circular economy transitions and sustainable cities.

I explore how accumulation by inclusion works through three modes: (1) through extended producer responsibility guidelines that recognize waste pickers but ignore the rest of the informal waste economy, retaining manual labor while replacing informal enterprises higher up the recycling chain; (2) through transnational initiatives connecting ethical consumers, brands, and waste pickers demanding legibility and transparency of waste-value chains and creating central roles for powerful legibility brokers; and (3) through app-based recycling programs linking waste generators and “worthy” waste pickers, which require the performance of self-discipline and self-improvement to access jobs and investment. Each of these examples reveal contradictions of inclusion in the context of the disciplining logics of profit-driven and market-oriented neoliberal sustainability.

Marketizing Waste, Governmentalizing Waste Pickers

Circular economy proponents promote the creation of new markets for waste materials, advocate technical retrofitting to improve efficiency, and

propose new pricing models to internalize externalized costs—classic neoliberal sustainability (Stahel 2016). This necessitates policy changes to waste management rules. In the 2010s, under pressure from environmental organizations, India's Ministry of Environment and Forests issued rules for plastic, e-waste, and municipal waste management that emphasized recycling and extended producer responsibility. These regulations recognize some sections of the informal economy as legitimate workers but deny recognition to others, which serves to retain manual work in last-mile collection and waste sorting while dispossessing informal enterprises higher up the recycling chain, thus making room for new private-sector entrants.

Rendering waste pickers governable through enumeration and registration is a precondition to integration into municipal systems or global value chains. In the 2016 Municipal Solid Waste Management Rules, Rule 11(1) (c) explicitly acknowledges the primary role played by waste pickers in reducing waste in India, while Rule 11(1) (m) mandates registration schemes for waste pickers. Rule 15 requires local bodies to formulate guidelines and create systems to facilitate the integration of waste pickers into municipal infrastructures.¹⁴ The Swachh Survekshan urban cleanliness program that ranks major Indian cities on their visual cleanliness also awards points for informal sector integration efforts. Similar gains have been witnessed in South Africa, Brazil, and Argentina, with several cities issuing occupational identity cards and contracting with informal worker organizations for municipal waste management and recycling services. However, although waste pickers are now being recognized, India's policies, particularly the Swachh Bharat Mission, make no mention of scrap dealers, aggregators, and recyclers higher up in the waste-value chain. In India, elaborate and well-developed value chains exist for everything from hair and bones to toothpaste tubes.¹⁵ But the state struggles to recoup tax revenues from informal transactions, preferring digitally facilitated commerce as well as GIS-based tracking and tracing, and therefore advocates the formalization of informal waste economies.

Marketization and formalization of informal waste recovery is promoted in the 2016 Plastic Waste Management Rules and the 2020 Guidelines on Extended Producer Responsibility. Extended producer responsibility (EPR), a concept originally introduced by environmental economists to hold brands and producers accountable for product end-of-life, is the bedrock of recycling and circular economy policymaking in Europe. EPR is supposed

to incentivize producers to change their product design and manufacturing processes by forcing them to internalize the costs of recycling and disposal. In Europe, EPR implementation has taken the form of “take-back” schemes as well as legislation that imposes recycling fees on some products. The EPR guidelines in India clearly stipulate that the government will not fund or build public infrastructure for repair and recycling work. In keeping with neoliberal rollback of state responsibility for environmental protection, the government has restricted its role to simply facilitating market mechanisms.

Taking a cue from policy frameworks in Europe, the EPR Guidelines issued by the Ministry of Environment and Forestry in 2021 notified a class of “producer responsibility organizations” (PROs), intended to relieve industrial producers and commercial brands of their individual obligation to take back used products. Instead, the PRO fulfills these obligations on behalf of the companies it represents. Plastic producers and brand owners can contract with PROs to have them handle the collection and recycling of their own waste materials—for example, a beverage company paying a PRO to collect bottles postconsumption, which are then recycled in-house. Or brands can purchase “recycling credits” from PROs, wherein a particular percentage of the materials recovered and recycled by the PRO will now count for the brand having fulfilled its EPR obligation. This latter option is a plastics-offset credit system that is meant to work like carbon-offset credits—take no notice of the fact that carbon-offsets have been plagued by a range of technical and ethical issues (Hyams and Fawcett 2013).

Since the publication of these rules, a new generation of waste management companies are registering themselves as producer responsibility organizations with the central and state-level pollution control boards. PROs compete with informal value-chains by setting up parallel systems of collection and recycling. The national regulatory framework is more favorable to new entrants than to long-standing informal enterprises or collectives because the rules defining a PRO explicitly require the registrant to be a professional organization. Start-ups also often have an easier time accessing credit, as they are seen as worthy of investment by impact investors and venture capitalists. Importantly, national policy does not explicitly designate informal aggregators, traders, or recyclers (who are often denigrated as “middlemen”), leaving them open to dispossession. Consequently, waste pickers who previously sold their reclaimed materials to scrap dealers, aggregators, and recyclers in the

informal sector must now interact with this new class of organizations led by elite, foreign-returned, or foreign individuals and funded by venture capital and impact investors. Market-based EPR mechanisms have thus empowered a new class of start-ups and social enterprises to replace or subsume informal operations.

Start-Ups and Social Entrepreneurs as Legibility Brokers

In August 2019, the UK fashion magazine *Marie Claire* carried a glossy feature, “The Body Shop Initiative That’s Changing the Lives of Waste Pickers in Bengaluru.”¹⁶ A lead photo of five smiling women—whose lives we presume have been changed for the better—accompanied the celebratory headline. In subsequent months, more news articles appeared on this initiative, which sourced Fair Trade recycled plastic from informal waste pickers in Bengaluru.¹⁷ A photo-essay in *Ethical Corporation* summarized the transformation of these waste pickers in one phrase: “From untouchables to plastic waste entrepreneurs.”¹⁸ In one photograph, you see a young Muslim woman sorting piles of plastics. In another, an old grandmother is laughing with Pixie Geldof, an English model and singer, hailed in the report as an “oceans’ campaigner.” Several photos featured waste pickers meeting Westerners, including representatives of Plastics for Change, “a technology platform that connects waste workers in developing regions with global companies.”

Today, an increasingly crowded playing field of social enterprises, start-ups, and established companies claims to deploy digital technology and mobile apps to innovate waste recovery and recycling work in collaboration with informal waste pickers and scrap dealers. As waste becomes more widely recognized as a source of value and profit, new entrepreneurs as well as established companies are turning to this long-ignored sector (Doron and Jeffrey 2018). Companies like Kabadiwallah Connect, Recykal, Banyan Nation, and Plastics for Change function as *legibility brokers*. They mediate cross-scalar transnational relationships between informal waste pickers and global brands looking to demonstrate EPR compliance, and de-risk investments for venture capital firms. While these companies sometimes compete with informal economy “middlemen” such as large scrap dealers, aggregators, and recyclers, they simultaneously integrate small scrap dealers, informal waste pickers, and itinerant buyers into their platforms for last-mile waste collection, manual sorting, and other labor-intensive,

low-margin activities that resist automation. Although modes of integration vary, included waste pickers are subjected to new governing logics and relationships as they navigate a new set of actors.

Legibility brokers espouse a dominant logic in the sustainable development literature in which informal recycling is labor-intensive and therefore has much potential for increased “productivity” through technological upgrading and innovation (Schroeder, Anggraeni, and Weber 2019). However, while many start-ups claim to be upgrading technology, I find their primary interventions are not always in the form of better machinery (though there are some examples of this), but rather in the form of information as technology. Start-ups seek to ease transaction costs by connecting waste producers, waste pickers, plastic granule producers, and brands through mobile apps or digital platforms. While some provide waste pickers with space to store and segregate plastics in exchange for a franchisee fee (basically landlords collecting rent), and others have innovated washing technologies that deliver a higher-quality recyclate, the main value proposition start-ups offer to the global circular economy is assurance of compliance, traceability, and transparency.

Circular economy proponents argue that upstream and downstream visibility is key to both encouraging and demonstrating circularity (*Wired* 2022). If consumers and companies know what materials are in their products and where their waste is going more responsible practices will emerge, goes the facile logic. Brands looking to demonstrate EPR compliance to regulators also demand transparency and trackability from their suppliers. To help brands demonstrate headway on their CSR goals, some start-ups also offer cause-marketing support and customized impact measurements of CO₂ savings, livelihood creation, and progress toward sustainable development goals. Others have obtained certifications, such as fair-trade certification from the World Fair Trade Organization. Companies like Plastics for Change also sell plastic offsets, promising to interrupt the flow of waste into oceans on behalf of businesses and consumers that buy their offsets.¹⁹ Producing these metrics and enacting these market-based arrangements requires a lot of monitoring.

To make informal waste recovery legible and legitimate to global brands, start-ups often have in-house sourcing teams that recruit and monitor informal waste collectors. Monitoring is achieved through GPS tracking and digital banking, as well as on-the-ground support using behavior-change

incentive models wherein waste pickers get better rates for better segregation practices. Start-ups ask their waste picker partners to supply them with a steady stream of segregated, clean, high-quality plastics like PET and HDPE (they usually do not want the low-value materials, which waste pickers must dispose through other means), collected under “dignified work conditions.” This means plastics should be collected directly from source (as opposed to picked from a dump), a location should be designated for the sorting of plastic (so, not in homes or on the street), and there should not be any children in the vicinity of the work site.

Community care work and household reproductive work subsidizes this new frontier of corporate greening. Community-advocacy by middle-class environmentalists and waste pickers improved source segregation, making it possible for start-ups and waste pickers to source plastics directly from households. Start-ups often rely on donor-funded programs to provide the social services that sustain dignified labor conditions. For instance, a Community Library network operated by Parisara Tanda cares for the children of waste pickers while their parents sort waste at aggregation centers. Plastics for Change has an eponymous foundation that provides emergency support and community development services to some waste-picking communities.²⁰

Self-Improvement in Place of System Change

The global circular economy agenda promotes market-based mechanisms to reduce pollution and increase resource recovery. In this model, polluters are asked to pay to upgrade recycling infrastructures—either directly as impact investors or indirectly through the purchase of EPR credits. To gain access to these flows of money that they need to improve their livelihoods, particularly in the absence of support or investment from the state, informal waste pickers and recyclers are forced to compete or collaborate with start-ups and pursue partnerships with global brands like Coca-Cola. To present waste pickers as worthy of inclusion into regulatory frameworks and global partnerships that favor formal enterprises, organizations working with waste pickers focus on professionalizing waste picking. If waste pickers and scrap dealers demonstrate business and technology skills, they will be taken more seriously by policymakers, brands, and investors, and be better placed to take advantage of the new economic opportunities of the circular economy, goes the logic.

Calls for professionalization emphasize the vulnerability of waste pickers alongside perceived inefficiencies in the system. As the director of a charity working with child waste pickers explained in a 2012 interview,

The context of India where we have got a very strong robust presence of informal sector both in terms of collection and in terms of, you know, the skillset. But at the same time, we also feel that whatever is happening in the informal sector right now, we feel that it's not adequate, it's not visible, it's also not functioning at its optimal level, ensuring that the people who are involved are protected from the vagaries of this waste management. What I mean is that any fluctuation in the market price of the recyclables can affect the lives of these people. Any policy changes, any new technology comes, for all these things these people are vulnerable. So therefore having a kind of structure or any kind of mechanism within the waste management, which is formally recognized and financed for as well as given the legitimacy of operating, we felt it was very important.

But while most actors identify systemic issues around lack of financing and regulations, waste pickers themselves remain the primary targets of intervention for professionalization. The NGOization of the waste-picker social struggle,²¹ as well as an increasingly hostile political climate for Dalits and Muslims in India, means that more radical critiques are deemphasized in place of a self-improvement ethos.²² Partially this is also due to the donor-funded context of work with urban poor, which tends to favor projects that make populations, as opposed to systems or social structures, the targets of intervention. Anthropologist Tania Li (2007), who studies social development schemes, names this as a quintessentially neoliberal approach that focuses on encouraging people to take responsibility for their own improvement by gaining skills and making the right choices to engage in competitive marketplaces. National regulations and municipal bylaws also favor private companies over cooperatives as service providers. Parisara Tanda founders cite this as the reason they started a social enterprise, which is authorized by the BBMP to provide waste management services in Bengaluru. This company enacts the entrepreneur logic: individual waste picker-entrepreneurs can become franchisees of this social enterprise and then contract directly with apartment complexes, gated communities, businesses, and commercial operations to provide waste management services. Waste pickers who become franchisees (usually men) in turn hire other waste pickers as sorters (often women or migrants) and drivers (mostly men) to work for them. These labor arrangements are often ad hoc and informal.

To make themselves includable in municipal infrastructures and global value chains, waste pickers are advised to change their appearance and behavior and to build their competencies (Luthra and Monteith 2021).²³ A promotional video for the now-defunct I Got Garbage platform run by Mindtree, a large multinational technology company, captures this invocation quite explicitly. Through the I Got Garbage web platform, bulk generators of dry waste such as apartment complexes can request waste pickup from informal waste pickers. The waste generator can either sell the waste to the waste picker at a fixed rate negotiated by the Mindtree platform or choose to donate it. The platform also required digital payments and invoicing, which brings previously untaxed cash flows into the realm of regulatory and tax oversight.²⁴

The video starts by showing us a disheveled and unshaven man picking in a landfill and living on the streets, feeding scraps to his child and a stray dog. He happens to go on a computer and clicks on the IGG website. Like magic, he is transformed into a smiling, clean-cut worker. He now has a truck to collect segregated waste door-to-door. He goes to the bank to get his earnings and can buy his daughter (who is now seen carrying a school bag) ice cream from a vendor. He is now accepted, even well regarded, in society. But what the video, and more broadly this simplistic narrative of change, leaves out is that the truck is likely obtained through a bank loan at a high interest rate.²⁵ And what if payments from the government or the company he works with are delayed—as they often are? Also, where does this newly included waste picker live now? At a time when informal settlements have been targeted for removal in Bengaluru, has the waste picker escaped the slum or has their shanty been wiped away by floods? Parisara Tanda staff recount several instances in 2019 when waste-picker communities living in slums were targeted for expulsion. They were accused of burning garbage by the very middle-class actors who celebrated the inclusion of “worthy” waste pickers.²⁶

Even integrated waste pickers who have demonstrated professionalism face moments of discipline and humiliation. Geographers Aman Luthra and Will Monteith write about how waste pickers and street vendors in Delhi use uniforms and codes of conduct, alongside identity cards, to legitimize themselves in the eyes of the state and capital (Luthra and Monteith 2021). ID cards and uniforms offer a degree of dignity and protection from

abuse, but this legitimacy is fragile and can be retracted at any point, as this vignette shared with me by a Parisara Tanda staff member illustrates:

While skimpily clad cheerleaders gyrate in support of the city's football club, waste pickers like Sagaya and Hari work the event, going through the crowd to pick up and separate plastic, paper, and glass. They work quickly and discreetly. The event organizers appreciate their speed, efficiency, and unobtrusiveness. However, they were less pleased when Sagaya hitched up her *sari* to keep it clean. While cheerleaders, many of them white women, flashed their midribs and thighs, the sight of a waste picker's calves was deemed inappropriate for the venue. The organizers complained to Sagaya's employer. The hitching up of her *sari* meant that she was no longer invisible or in the background. No longer a uniformed worker in her place, carrying out her jobs.

Undercutting Solidarity and Collective Power

Neoliberal inclusion models support individual success for some entrepreneurial waste pickers at the expense of collective benefit for broader populations. These arrangements are extended to receptive individuals with the right dispositions for business. Indeed, some waste pickers have made it, achieving higher incomes, better work conditions, and more security through participation in these new value chains. One example is Deepak, who has started his own company that provides waste management services to several households and commercial enterprises in southeast Bengaluru. Deepak was a child waste picker who has emerged as a leading voice for waste-picker rights in the city. He also runs a dry waste collection center, is featured on a global brand's website, and speaks on national waste management panels. Similarly, Imran, another entrepreneur, conducts zero-waste trainings for middle-class communities, holding his own in elite-dominated spaces. Periamma has operated a DWCC for more than eight years and has built her own home. But as Deepak reminds us frequently in his public speaking, there are thousands more waste pickers like him, whose lives are yet to improve. All while private corporate actors enter the waste recovery and circular economy space, out-muscling waste pickers with swanky investment videos, English-language skills, and their economic and cultural power.

Entrepreneurial opportunities and acumen might allow a select number of waste pickers to escape stigma, but it leaves the stigma, humiliation, and precarity associated with both poverty and caste generally intact. Akin to what Patrick O'Hare (2022) observes in Uruguay, a cleavage is emerging

between organized, included waste pickers and waste pickers who still operate outside these inclusion initiatives. In Bengaluru, only about 1,500–2,000 of the city's 15,000-odd waste pickers have participated in livelihood inclusion programs such as working at DWCCs or providing waste management services to apartment complexes.²⁷ For waste pickers operating outside these inclusion initiatives, the enclosure of waste materials has reduced their access to recyclables on the street. Although identity cards offer a degree of protection and dignity, they remain at risk of facing the quotidian harassment and casteist stigma that was once the fate of all waste pickers in Bengaluru.

These new integration arrangements can also undercut preexisting relationships of mutual tolerance, solidarity, and dependence that buffered informal workers from the vagaries of the market and elite opinions. A community journalist and waste researcher who has studied inclusion arrangements across the country explained in a 2021 interview that inclusion arrangements can undercut waste-picker agency:

In waste-picker colonies in Bengaluru where dry waste is aggregated, the waste pickers have some agency on whom to sell the waste to and can sell it to the secondary aggregator or recycler who offers the best price. In these new relationships, especially when the Urban Local Body or waste contractors are involved, waste pickers are forced to sell to them at a much lower rate than they could get on the open market. Further, in some of these new companies where waste pickers are getting jobs, they do not have freedom of association, collective bargaining, or fair remuneration. There is limited oversight, and therefore a lot of exploitation behind the scenes. Moreover, a lot of these new companies or even the state are coming in to get rid of the middleman, the scrap dealers, and aggregators. However, in many cases, these informal recyclers and aggregators are also the actors who provide a buffer to waste pickers during times when the price of plastic comes down, by either providing credit or space to store waste. They serve as the safety net for the waste pickers. Finally, there is a limitation of how many waste pickers can even get jobs in this new, parallel waste economy.

The integration of waste pickers into corporate-controlled recycled value chains can also instrumentalize their labor and knowledge.²⁸ Urban recycling work has been resistant to capture because of the unique expertise and embodied knowledge (*metis*) held in these networks and communities. But the emphasis on transparency seeks to leverage and control where and how *metis* for value extraction is deployed, without adequately compensating it. The tacit knowledge of waste pickers regarding where to collect and how to sort is available for capture through GPS tracking devices that

monitor their movements, and by forcing them to commit to supervision. But the knowledge of technology entrepreneurs innovating in the circular economy is protected as proprietary via patents. And indeed, that is the other danger here—that, as Melanie Samson describes, the commodity frontier first created by waste pickers is now ripe for capture by more powerful and well-resourced private actors in act of epistemic injustice. Dispossession might be the outcome of inclusion after all. Thus, when the Ellen MacArthur Foundation asserts that states and businesses should be “tapping activities of the informal economy” (2016, 28), to hasten a transition to a circular economy, it remains to be seen whether they will be tapped dry.

Accumulation by inclusion is a strategy by which capital devolves infrastructural labor onto poorly compensated laboring bodies in exchange for removing the threat of more severe dispossession. By rebranding self-exploitation as entrepreneurship, this strategy effectively silences dissenting voices questioning this form of integration. Integration is not a new thing. Private contractors or the state in several parts of the country subcontract with waste pickers who, in exchange for access to waste, do the demanding work of door-to-door collection and waste sorting. Some of these arrangements are formally negotiated (such as in Pune or Delhi), while in other cities the arrangements are unofficial and sometimes more exploitative. What is qualitatively distinctive about this latest phase of integration is that it is presented as a win-win proposition under a broader global sustainability paradigm. There are enough success stories to write about in glossy magazine pages. Yet, these images distract from the enduring suffering and exploitation of many waste pickers. This model does not need everybody to succeed.

Reducing Costs Will Reproduce Caste

To make waste recovery more efficient and less dangerous, waste picker organizations and entrepreneurs seek space, equipment, social security, and guaranteed payments, both from the state and from private corporations. But corporate and state collaboration with the informal economy is largely motivated by a desire to secure the conditions of growth and profit. They consequently do the bare minimum to capture value from informal work—as also seen in chapter 4.

Cheapening is an economic and cultural strategy employed to exploit waste pickers.²⁹ The economic strategy involves undercutting the collective power of waste pickers through subcontracting and casualized labor arrangements, which forces them to take on risk, keeps them out of the wage relation, and denies them labor protections. The sociocultural strategy is focused on maintaining caste as an unspoken but ever-present force of humiliation and stigma to silence, coerce, and discipline waste pickers. Caste twins the essential and disposable in Indian cities, reproducing certain spaces and categories of people as sinks, buffers, and shock absorbers. Structures of humiliation keep waste pickers, as mostly Dalit women and men, migrants, and religious minorities, locked in positions of abjection (Reddy 2015). This unequal power relation in turn makes it harder for waste pickers to demand higher wages, more decision-making power, or more investment in their own reproduction through education, training, and housing support.

Because waste-picker organizing in Bengaluru is filtered through the elite and dominant-caste zero-waste movement and constrained by a market-based regulatory regime, an emphasis on efficiency, managerialism, and self-improvement triumphs over attempts at social reform to abolish caste. The participatory decision-making forums that many waste-picker advocates globally have argued should be at the core of all efforts at integrating informal sector actors have not been set up, and no plans to do so are appearing in the short term (Carré, Horn, and Bonner 2018; Dias 2016). Decisions are still made by “expert committees” and technical bodies in lieu of democratic fora. A longtime environmental justice activist in Bengaluru, captures this sentiment trenchantly:

Caste has replayed everywhere, even now if you see the situation, the waste pickers are obviously the poorest of the poor. And even if you integrate them really, there's really no social reform, is there? . . . That's because if you get the people who run the organization, they're largely a product of middle-class education and upbringing. So unless you train yourself and school yourself, you are stuck within that. You are still within the efficiency management paradigm.

A zero-subsidy, profit-oriented model cannot help us “discard well.” It will only make waste management seem more modern while retaining its most backward parts. To be clear, the intentions in most of these partnerships are often benign: to improve conditions of work, reduce or eliminate toxic exposure, or increase efficiency of resource-recovery using technology.

These interventions are also necessary. It is important to emphasize that some waste management tasks, especially those involving wet and mixed waste, can and should be mechanized, and technology plays a key role in that. Casteist municipal infrastructures condemn manual scavengers, conservancy workers, and waste pickers to bodily toxicity and social humiliation to keep spaces clean—demanding human contact with refuse reduces costs (Sreenath 2019). Mechanization and deployment of technology are necessary to break this relation, in addition to sociocultural change. But for now, technology development and deployment is done with the goal of sustaining growth and extracting profit rather than ending casteist oppression in waste systems. Indeed, manual labor is retained when it supports profit-making.

Casteist ideas of intellectual and moral worth also mean that, once waste pickers are included in the waste management system, they must go to great lengths to demonstrate that they are hardworking, efficient, and reliable. On the other hand, foreign-returned, English-speaking, and dominant-caste techies are already seen as saviors making great sacrifices by descending into this dirty business. This dynamic has caste written all over it. But casteism is constantly denied. A BBC study conducted in 2021 revealed “55% of the study respondents felt that informal waste pickers were dirty in appearance. A substantial 56% even believed that they should not be allowed in building complexes and societies. The strong negative perception was attributed to the physical appearance of waste pickers, impacting their interaction and acceptance in society” (Kappan 2021). Casteism is not acknowledged, and the waste picker is blamed for their poor appearance.

Accumulation by inclusion is a strategy pursued by state and corporate capital and enshrined in national and global policies of the circular economy. It emerges out of the realization that waste pickers are the cheapest available option for waste collection and sorting, essential tasks for materials recovery that are hard to automate. Treating waste pickers as a globalized resource for the circular economy enables municipal governments to cut costs and national governments to meet climate commitments and secure resource access. It gives new entrepreneurs a cheap labor force and multinational brands a CSR talking point. Along the way, it also salves the green guilt of consumers discarding plastics who also want to do their bit. But the bodies of people who are locally stigmatized, othered, and humiliated are the fulcrum of this emerging transnational flow of discourse, money, and material.

Moving from Economic Inclusion to Social Reform

I am at the 4th United Nations Environment Assembly (UNEA) in Nairobi, held in March 2019.³⁰ These assemblies were created after the Rio 2012 Earth Summit to ensure regular deliberation and progress on global environmental challenges. I am attending as an invited speaker at a Future Earth event on “Enablers of Sustainable Lifestyles.” I have a credential that gives me access to all the events. One of the focal themes for the 2019 event is marine plastic pollution. Consequently, there are several sessions dedicated to waste management, plastics governance, and the circular economy. I decide to attend a session on finding alternatives to plastics. The panelists include a representative from Coca-Cola, one of the world’s largest producers of marine plastics pollution, and another from BASF, a petrochemical company that manufactures plastics. Also in the mix, a government representative from the Ministry of Environment in Kenya, which had just enacted a pioneering single-use plastics ban in the country. Kenya, along with India and the EU, were pushing for UNEA to adopt a commitment to phase-out most problematic single-use plastic products by 2025.

The government representative, who speaks first, says the plastic ban was the only way to get the attention of industry and get them to cooperate. His comments firmly place the onus for further action upon the industry representatives, who speak next. Coca-Cola and BASF predictably point to the charters they have signed and their ad campaigns as evidence of their commitment to ending plastic pollution. They promise to use more recycled plastics, develop biodegradable alternatives, and increase efficiency. They simultaneously deflect attention and responsibility onto the consumer and onto public infrastructure. “Consumers need to do more to recycle, and local governments need to set up better collection systems, the informal sector needs to be formalized” says the BASF representative, deftly taking attention away from their role as a major plastic producer. Coca-Cola absolves itself of responsibility for the plastic pollution crisis by instead blaming “the current plastic collection and reuse system [which] is broken.” (Coca-Cola Company n.d.)

In the Q&A session, an 8-year-old is introduced to the audience as a young environmental champion. This young Kenyan directs a question to the Coca-Cola and BASF representatives. “My parents say that when they were young, they used glass. Now there is plastic everywhere. Why can’t we go back to a system where we use glass bottles that are more easy to recycle? Do we really need plastics as you seem to say we do?” The panelists look somewhat stunned by the clarity of the question. Finally, the BASF representative speaks up in a patronizing tone “Plastics are better than glass, more durable and easy to transport. Glass can break which is dangerous. Right now we don’t have biodegradable plastic that can hold water, so until then we have to use plastics, if not, you will not be able to get the Coca-Cola, and that would be bad, right?” Coca-Cola is rendered an essential need in her response.

A few days later, the text for the first global commitment on “Curbing Single-Use Plastics” is released. Lobbying by the US, Saudi Arabia and other countries with ties to fossil fuel and big petrochemical companies weakened the resolution (Bhalla and Ndiso 2019). They watered down the language from “phasing-out” to “significantly-reducing” single-use plastics. Brian Doherty, a member of the U.S. delegation at the UNEA, convinced other delegates that rather than focusing on phasing out single use plastics, the emphasis should be on fixing waste management in countries that are major sources of marine plastic pollution. “We support reducing the environmental impacts from the discharge of plastics, but we further note that the majority of marine plastic discharges comes from only six countries in Asia where improved waste management could radically decrease these discharges” he said.³¹ Once again, the focus is successfully deflected from corporations that push over-consumption to brown bodies laboring over waste.

Plastics are on track to contribute more greenhouse gas emissions than coal plants by 2030 (Valette 2021). Even though plastics are implicated in a range of environmental problems from toxic pollution to marine biodiversity loss, the global plastics industry has managed to avoid stringent regulation for decades now. From the United States to Bengaluru, companies pose plastics as a necessary evil that can be made less evil by changing consumer behavior, instituting recycling programs, and, now, through the market-based solutions of the circular economy.³² This dissimulation is becoming more pervasive because plastics is the fossil fuel industry’s ticket out of redundancy.³³ Petrochemical companies are looking to circular economy “solutions” to both contain environmental crises and create new frontiers of accumulation (Mah 2021).

At the Fourth UNEA, I witnessed firsthand one strategy the plastics and petrochemical industry uses to evade regulation—deflecting blame onto consumers and informal workers. This is an act of dissimulation, backed by PR campaigns and advertising agencies. It is meant to make consumers blame themselves for a problem they have had little part in creating. By pointing the finger at “only six countries in Asia,” blame for this global environmental problem is placed on informal workers and waste management systems in the Global South. Today, these very companies invoke the circular economy as a “win-win” solution, downplaying the trade-offs between economic growth, social equity, and environmental protection that are inevitable in any intervention. If the circular economy policy agenda is to be recovered from the techno-managerial shackles placed on it by powerful corporations and their allies, questions of environmental justice must be centered, as must the political voices of informal workers.

Three years later, at the Fifth UNEA in 2022, member nations have finally agreed to create an international, legally binding treaty on plastic pollution by 2025. For this new plastics treaty to be effective and cohere with the Sustainable Development Goals, waste pickers and other informal waste actors insist that they must have a seat at the negotiating table and a role to play in tackling plastic pollution (GRID_Arendal 2022). Waste pickers were present at the summit, and thanks to their activism, the summit's resolution included language "recognizing the significant contribution made by workers under informal and cooperative settings to collecting, sorting and recycling plastics in many countries." The first battle for recognition has been won, but now the longer struggle for just remuneration, full participation in national and global policymaking, and a just transition begins.³⁴

On the other hand, a top-down inclusion agenda tends to see informal workers as an untapped resource, an opportunity to meet recycling goals at least cost, simply because this is what corporations always do—cut costs. These agendas are not readily reconcilable. When companies claim to balance economics, environment, and equity, it is usually the last "e" that loses out. To prevent inclusion from becoming repackaged oppression, treaty negotiations must begin with the acknowledgment that current systems of disposal and recycling represent waste colonialism and environmental racism/casteism.³⁵ This is expressed not just through the forceful appropriation of land as environmental sinks, but also through the systematic subjugation of bodies through racialized regimes of labor for recycling. It must also recognize that relying on market mechanisms such as plastic offsets or EPR mechanisms will reproduce this racialized division of recycling labor, especially if workers have limited ways of holding companies accountable for unfair inclusion terms. There is no level-playing field here. Even a well-meaning inclusion agenda can reproduce oppression if it fails to consider the deeply cultural and embedded social hierarchies that sustain current systems of discard. In the concluding chapter of this book, I articulate an alternative agenda of "reparation by inclusion," which requires the circular economy and other sustainability paradigms to go beyond a narrow economic rationality to reemphasize mutual vulnerability through transformative coalitions.

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