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# Recycling Class

## The Contradictions of Inclusion in Urban Sustainability

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# Notes

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## Introduction

1. The tech-industrial park was a SEZ, or special economic zone. A special economic zone is a geographical region designated by the central and state government wherein laws and regulations pertaining to taxes, labor, or export are more liberal than in other parts of the country. Creating SEZs is a strategy to attract investment, encouraged by structural adjustment policies, resulting in land dispossession in many cases (Levien 2011).
2. Yes, you read that right. The Indian Tobacco Corporation, now just known as ITC, is one of India's largest manufacturers of fast-moving consumer goods. It ran this recycling program as a corporate social responsibility initiative.
3. For example, discarded milk packets sell for 35 rupees (0.5 USD)/kg versus 2 rupees (.03 USD)/kg for unsegregated dry waste. Fundamentally, the value of waste goes up with sorting and aggregation.
4. The names of all individuals and civil society organizations whom I engaged in this study have been anonymized with pseudonyms. All interviews were conducted in confidentiality, and the names of interviewees are withheld by mutual agreement.
5. A public interest litigation is a legal tool that enables ordinary citizens to approach the court on any matter of "public interest." Although initially conceived to enable those in socially and economically disadvantaged positions to access justice through

the higher courts, the PIL has since become a key tool through which middle-class individuals and groups seek to influence public policy (Bhan 2009; Rajamani 2007). This PIL was filed in the High Court of Karnataka in June 2012 by two individuals, one of whom was informally associated with a middle-class waste management advocacy group. It petitioned for the implementation of the Municipal Solid Waste Management Rules 2000 (MSW 2000), a central directive that dictates how municipalities are required to manage solid waste. The Municipal Solid Waste Management Rules were issued by the Ministry of Environment and Forest, Government of India (GoI), in the year 2000 in response to a prior public interest litigation filed in the Supreme Court of India. Municipal Solid Waste Rules 2000 stipulated how urban local bodies in Tier I and Tier II cities should handle solid waste. They were framed by a special committee in response to a public interest litigation filed in the Supreme Court by Ms. Almitra Patel in 1996 (Almitra Patel vs. Union of India, WP 888 1996). The MSW 2000 rules promoted door-to-door collection of waste, segregation of waste, scientific landfilling, and increased community involvement in solid waste management.

6. Several newspaper articles and reports documented the conflicts at Mavallipura and Mandur (*Deccan Herald* 2013; Environment Support Group 2010; Ramani 2012; *Times of India* 2014). The Mavallipura site was finally shut in 2015, after years of concerted struggle by the Dalit Sangarsh Samithi and Environment Support Group (ESG). The site is yet to be fully cleaned up (EJOLT n.d.).

7. The garbage crisis was covered in local and global media (Beary 2012; Harris 2012).

8. Directions were issued by the court while hearing the PIL filed by ESG and ors. (WP No. 46523/2012) and other, related PILs. For more on these court proceedings and how they represent a departure from prior examples of judicial activism, see Lutringer (2017) and Lutringer and Randeria (2017).

9. The municipal solid waste management rules were revised and updated in 2016. The current rules place more emphasis on source segregation of waste. The High Court decisions in Bengaluru, as well as involvement of activist groups from the city in the national deliberations, had a significant impact on what was included and excluded (Luthra 2020).

10. A flagship initiative of the Bharatiya Janata Party government, the Swachh Bharat Abhiyan, or “Clean India Mission,” aims to clean up India through various initiatives including ending open defecation and littering, increasing responsible waste disposal, and educating the population on the importance of cleanliness. Swachh Bharath and its local predecessor Swachha Bengaluru largely frame urban filth as a product of bad behavior as opposed to unchecked consumption growth, inadequate infrastructure, or inequities in service provision. Its techniques involve ranking cities by cleanliness, disciplining workers, privatizing municipal services through public-private partnerships, and pushing for large-scale, capital-intensive technologies like waste-to-energy plants.

11. The notion of just sustainabilities requires centering justice at the core of all sustainability struggles. It asserts that domination and oppression are incompatible with sustainability, and thus brings attention to the ways in which actions carried out in the name of sustainability either dismantle or reinforce systems of oppression (Agyeman 2013; Agyeman, Bullard, and Evans 2002; Agyeman and Evans 2003; Castán Broto and Westman 2019).

12. Several books and journal articles have chronicled the economic and sociological characteristics of the new middle classes and the transformations of the city alongside their emergence (H. Gupta 2019; Nisbett 2020; Pani, Radhakrishna, and Bhat 2010; Upadhy 2008; Upadhy and Vasavi 2008).

13. Around the world, ailing and disinvested waste management systems represent state dysfunction and failed promises. While mobilization around garbage often takes the form of strikes and protests targeting the state, and sometimes spiral into broader political demonstrations, as in Lebanon or Tunisia (Ball 2021; Yee and Saad 2019), the everyday nature of garbage, the way it surrounds you and impedes your life, means that it also sparks community mobilization at the neighborhood scale (Fredericks 2018, Stamatopoulou-Robbins 2019).

14. See Ram (2019). While this sounds like a big number, it is significantly less than cities in the United States and Europe. See Vergara and Tchobanoglous (2012). US and European cities simply do a better job of hiding and displacing their municipal solid waste through more extensive infrastructural arrangements. Bengaluru and other Indian cities also have the additional challenge of being very dense (Doron and Jeffrey 2018, 43).

15. See Doron and Jeffrey (2018), OECD (2007).

16. Here I am echoing Rob Nixon's classic text, *Slow Violence and the Environmentalism of the Poor* (Nixon 2011).

17. As analyzed in several recent studies (Cardullo and Kitchin 2019; Das 2020; B. Ghosh and Arora 2022).

18. The International Labour Organization (ILO) estimates that somewhere between 19 to 24 million people worldwide make a living as waste pickers (ILO 2018). In India, rough calculations estimate that its cities support about 4.5 million waste pickers (Doron and Jeffrey 2018, 189). However, reliable numbers on waste pickers are hard to obtain, and numbers fluctuate seasonally. Gleaners are a feature of North American and European cities, too (Bonatti and Gille 2019; Porras Bulla, Rendon, and Espluga Trenc 2021; Wittmer and Parizeau 2016). In many US cities, they are considered to be "stealing" value from the city, which sells its recyclables to subsidize the cost of running curbside recycling programs and generate profit. Curbside recycling programs in the United States emerged in the 1960s and 1970s, actively promoted by plastic producers and brands to circumvent more punitive

regulation. Geographer Max Liboiron names these “rigorous control” practices that contain pollution through “municipal curbside collection, industrial-scale recycling and highlight controlled and technical landfilling” (2021, 75) as emerging from a colonial perspective and colonial land relations in the illuminating and challenging book *Pollution Is Colonialism*.

19. Several studies have attempted to calculate the contributions of waste pickers to cleaning the city. A study by the International Labor Organization in Pune, India, estimated that scrap collectors salvaged 144 tons of recyclable scrap each day, saving the municipality millions of rupees (Chikarmane and Narayan 2005). Another study claims that every ton per day of recyclables collected by the informal sector saves cash-strapped urban local bodies 24,500 rupees per year and avoids the emission of 721 kg of carbon dioxide per year (Annepu 2012).

20. The term environmental privilege has been coined by scholars of critical environmental justice to indicate the flip side of environmental injustice (Park and Pellow 2011; Pulido 2015).

21. Scholars writing about South Asian environmentalisms have emphasized the importance of considering how social position and political-economic power contour the way urban environmental problems are framed and engaged. These approaches combine a Foucauldian lens of governmentality with a focus on social position (Doshi 2019; Rademacher 2011). Such an approach sees environmental subjectivities as context-dependent, in which context is socio-material infrastructure and governing regimes, equally influenced by how people name and make sense of their socio-material contexts, which are in turn influenced by both locally emergent and globally circulated ideas.

22. The apolitical and technocratic framing of sustainability has been analyzed and critiqued in several recent books (Castán Broto and Westman 2019; Hodson and Marvin 2014; Isenhour, McDonogh, and Checker 2014).

23. For feminist geographers Victoria Lawson and Sarah Elwood, contact zones are “mutable sites/moments of interaction in which differences are made explicit and can lead to new negotiations of identity, privilege, political responsibility and alliance.” In other words, they are places of possibility (Lawson and Elwood 2014, 211).

24. Approaching debates on sustainability from a critical environmental justice perspective, Julie Sze and coauthors argue for a “situated sustainabilities” model as a way to explore how sustainability (research, policy, and practice) can avoid the trap of reinforcing the dominant ideologies that produce social injustice and environmental harm. Their framework connects environmental justice research and its commitment to praxis, racial justice, and examination of positionality to questions of sustainable development (Sze 2018).

25. Sociologists and political scientists have studied the illiberal and exclusive expression of civil society activism in India, emphasizing how the state encourages

elite and middle classes to participate in governmental community-participation schemes while making it harder for working-class groups to do so (Coelho and Venkat 2009; Ellis 2012; Ghertner 2011b; Kamath and Vijayabaskar 2014).

26. Sharad Lele and coauthors, in *Rethinking Environmentalism*, call for more collaboration among all academic disciplines in which societal-environmental interfaces are investigated, irrespective of ontological and epistemological stances (Lele et al. 2019).

27. Here I take my cues from the field of comparative environmental politics, which analyses how the differences in political systems contours who participates in policy-making, what types of policies emerge, and their environmental and social outcomes (Kashwan 2022; Steinberg and VanDeveer 2012).

28. As David Schlosberg (Schlosberg and Craven 2019), Francesco Forno (Forno and Graziano 2014), and other environmental politics scholars note, a growing number of environmental groups in the Global North are shifting their focus from political claims targeted at the state to instead engendering more sustainable practices in everyday life. These movements are sometimes branded as “sustainable materialism,” as they often involve substantive, material interventions into everyday life infrastructures. Scholars disagree on whether these material interventions are political or apolitical, new or long-standing, and on whether they have transformative potential in terms of achieving just sustainabilities (M. Anantharaman et al. 2019; MacGregor 2021a).

29. Postpolitical, or more generally, the processes of depoliticization, refer to a situation in which the political, understood as a space of contestation and antagonistic engagement, is increasingly colonized by politics, understood as technocratic mechanisms and consensual procedures that operate within an unquestioned framework of representative democracy, free market economics, and cosmopolitan liberalism (Swyngedouw 2009). In postpolitics, political contradictions are reduced to policy problems to be managed by experts and legitimated through participatory processes in which the scope of possible outcomes is narrowly defined in advance. “The people,” as a potentially disruptive political collective, is replaced by the population, the aggregated object of opinion polls, surveillance, and bio-political optimization. Citizens become consumers, and elections are framed as just another “choice” in which individuals privately select their preferred managers of the conditions of economic necessity (J. Wilson and Swyngedouw 2014, 6).

30. Community participation functions as a tool of “soft-neoliberalism,” repackaging austerity and the absence of an ethical, social contract under feel-good tropes of citizenship and participation. For more, see Peck (2010), Fredericks (2018), and Miraftab (2004a).

31. As discussed in chapter 2, Bengaluru has a long tradition of middle-class civic involvement attributed to the city’s larger middle-class population, self-association with modernity through presence of educational institutions and public-sector enterprises,

large diasporic population, and state schemes promoting middle-class involvement in urban governance (Gopakumar 2020; H. Gupta 2018; Upadhyaya 2017).

32. This reflects what Raka Ray and Seemin Qayuum describe as “cultures of servitude,” characteristic of middle-class habitus (Ray and Qayuum 2009).

33. The word “communal” itself has this double meaning. Its positive usage refers to sharing, cooperation, and collective ways of provisioning everyday life. However, growing up in India at a time when Hindutva was on the ascent, I associated the word communal with chauvinism, riots, and violence. This double meaning applies to my analysis of communal sustainability as well; it is shared and cooperative but holds deep divisions within it. This analysis recognizes the messy and contradictory nature of community and participatory processes in urban development (Rigon and Castán Broto 2021).

34. “Environmentalism of the poor” was a term developed by Joan Martinez-Allier and others to identify and legitimize the livelihood struggles of agrarian and forest-dwelling communities in the Global South as forms of environmentalism (Martinez-Allier 2016). The term was developed to counter the then-dominant notion that environmentalism was a post-material concern—that people could only become environmentalists when their material needs were satisfied. Rather, Allier and others argued that environmental concerns are always deeply material concerns. In doing so, many more livelihood and land struggles became visible as environmental justice struggles. However, a broader criticism leveled at the framing of “environmentalism of the poor” is that it can lend itself to a form of eco-traditionalist discourse that essentializes those working in or with land as inherently ecological, and sometimes denying them the right to modernization. Further, the urban poor are less able to make ecological claims in this vein because nature is less visible in the city and their occupations look more extractive.

35. Political scientists studying Indian civil society have noted that members of the informal working class are largely excluded from participation in civic organizations. Slum-based collective action is a key mode through which some sections of the poor and working classes are able to make claims on the state (Coelho, Kamath, and Vijayabaskar 2020; Harriss 2006; Kamath and Vijayabaskar 2014).

36. Chapter 3 goes into this in more detail.

37. This tactic has been used by rural environmental struggles as well (Kashwan 2023).

38. This finding resonates with what Anne Rademacher found in Kathmandu, where, when riverbank slums were threatened in river restoration projects, their residents were fashioned as good ecological subjects to make resettlement claims (Rademacher 2011). However, while her Foucauldian analysis focuses on the formation of environmental subjectivities, mine also explores the types of social mobilizations and coalitions that these subjects engage in.

39. Studies of infrastructural citizenship have used water and waste infrastructures as key terrain on which to explore questions of political mobilization and justice (Anand 2017; Fredericks 2018; Moore 2012; Ranganathan 2014).

40. Citizen participation schemes and civil society involvement is almost exclusively restricted to propertied groups in Indian cities (Ellis 2011; Ghertner 2011b; A. Ghosh 2005).

41. Indeed, as I was finalizing this manuscript in 2022, and during my last field visit to Bengaluru, I learned that the BBMP, through the newly created Bengaluru Solid Waste Management Company (a parastatal body tasked with managing waste in the city), was threatening to revert to a policy in which door-to-door collection would be done by a single contractor, who would then drop off dry waste at the DWCC. If implemented, this would be a serious setback to waste pickers operating DWCCs (Menezes 2022b).

42. Waste pickers are more organized and involved in political spaces of negotiations now, and the environment is a key arena for their involvement (Chen, Carré, and Carré 2020; Dias and Samson 2016; Gutberlet 2021; Rosaldo 2019).

43. Political scientists and commons scholars have studied the effect of sociocultural heterogeneity on environmental collective action, finding that the effect of heterogeneity on encumbering or encouraging collective action is mediated by institutions (for a good summary, see Mudliar and Koontz 2018). These studies are an important corrective to the methodological individualism embedded in how Elinor Ostrom (1990) originally conceptualized collective action and community-based environmental management. As Kashwan et al. note, methodological individualism prevents many commons scholars from advancing a more nuanced exploration of how social, cultural, or political inequalities shape community mobilization and collective action for governing the commons (Kashwan et al. 2021). Other intellectual traditions, such as those emerging from Black Marxism or from Foucauldian approaches, offer a different perspective—they argue that identity formation and social difference is itself tied to specific institutional forms and the political ecologies associated with them. Theorists of racial capitalism, for instance, show that capitalism tended to “differentiate—to exaggerate regional, subcultural, and dialectical differences into ‘racial’ ones,” to justify dispossession and colonial appropriation (Kelley 2017; Robinson 2000). Or, from a Foucauldian perspective, social locations are not abstract categories but are deeply enmeshed in and constituted through elite-based governing regimes (Agrawal 2005; Doshi 2019).

44. Critical theorists of environmental justice who incorporate theories of intersectionality (Crenshaw 2017; Kaijser and Kronsell 2014) explain that social location affects not only how different groups experience environments or express environmentalism, but also that how social identities are constructed and maintained to serve a status quo (such as colonial expropriation, capitalist exploitation) contours how



environmental issues are problematized and acted on, and to what ends (Amorim-Maia et al. 2022; Pellow 2016; Rigon and Castán Broto 2021). Recent scholarship has sought to bring these questions of inequality to the center of studies of commons and environmental projects, offering a much-needed corrective to older scholarship on environmental collective action that tended to flatten communities and adopt an overly individualizing perspective (Kashwan et al. 2021). Consideration of sociocultural history and identity is especially crucial in cities, because urban areas tend to house diverse populations and urban spaces meet diverse, parallel uses for heterogeneous populations.

45. Liboiron illustrates this through an incisive critique of a widely cited report, “Plastic Waste Inputs from Land into the Ocean,” published in the journal *Science*. This research aimed to estimate the amount and source of postconsumer plastic waste entering the oceans and expressed the amount of plastic waste generated within a country in per capita figures. Liboiron points out that postconsumer waste accounts for only one area of marine plastics. They state, “Reports like these reproduce the erroneous truism that plastic pollution is a consumer problem rather than an industrial production problem” (2021, 73). The focus on consumers is accomplished through an emphasis on postconsumer or municipal waste in waste management conversations, as well as citing per capita waste measurements that erase both the role of industry in creating disposables and inequities within a region (Lepawsky 2018; Liboiron 2021).

46. Recycling is an energy-intensive industrial process that produces pollution (MacBride 2011). In the United States, where I live and teach, the myth of plastic recycling is finally being blown up by investigative journalists and incisive books like Alice Mah’s *Plastic Unlimited* (Mah 2022).

47. These are two key methods of analysis employed by discard studies scholars to go beyond obvious and partial explanations, which usually tend to reinforce an existing status quo (Liboiron and Lepawsky 2022).

48. The past few years have seen a flurry of work studying questions of citizenship, inequality, race, and coloniality through and with waste infrastructures (Chalfin 2014; Doherty 2021; Fredericks 2018; O’Hare 2022; S. Sharma 2022; Stamatopoulou-Robbins 2014). I add to this body of work through my explicit focus on environmental movements and ethics in waste infrastructure.

49. At this stage, my theoretical framework was built on research in social psychology, environmental sociology, and environmental politics. In retrospect, it was rather uncritical. I was not thinking about inequality, oppression, or justice when I began this journey.

50. Over those two years, I conducted a total of fifty-five interviews with seventy individuals. Some interviews were with couples in their homes. All my interviewees self-identified as middle class.

51. I am grateful for those formative conversations with Dr. Vinay Gidwani, Dr. Solomon Benjamin, Leo Saldanha, Dr. Raka Ray, Dr. Isha Ray, Dr. Amita Baviskar, and Dr. Carol Upadhyia, who pushed me to deepen and expand my inquiry. They introduced me to the scholarship on economic and urban geography, southern urbanism, and labor studies.

## Chapter 1

1. The term “new middle class” is generally used in the Indian context to refer to the social groups, predominantly dominant-caste, English-speaking, and urban, who benefited from the economic liberalization policies pursued in India in the late 1980s, and whose consumption patterns and practices are globalized. In comparison, the older middle classes are thought to be the social group that benefited from state-led developmental projects such as public universities and public-sector units, though there are continuities between the older and the new middle classes. Bengaluru is home to a sizable new middle class whose members live in gated enclaves, drive cars, and indulge in discretionary spending. Further, the new middle classes are significantly more well-off than most of India’s population, in that, in terms of income and consumption, they are closer to what might be described as an elite. Thus, “new middle class” operates as much as a cultural construct as a sociological term; the discourses around middle classness are as important to their self-definition as how much they earn or what they buy. For more, see Baviskar and Ray (2011), Fernandes and Heller (2006), Upadhyia and Vasavi (2008). Geographer Malini Ranganathan uses the term “peripheralized middle classes” to refer to the more numerous members of Bengaluru’s middle classes (compared to the smaller number of English-speaking and securely propertied new middle classes) who are “rooted in regional cultures and languages, educated, and crucially, *property owning* (though not securely so)” (Ranganathan 2014, 5). I use the terms middle class, elite middle class, and elites interchangeably, but always to refer to the well-off, urbanized, English-speaking, and culturally dominant contingent who are the subjects of this study.

2. The arguments in this chapter are based on fifty-five in-depth, semi-structured interviews with individuals who practice and promote bicycling, zero waste, and organic gardening, supplemented with participant observation and online ethnography on listservs and Facebook groups dedicated to green lifestyles in the city.

3. According to geographer Laura Pulido, ecological legitimacy attaches to a group when it is seen as a valid environmental actor, giving group members the power or moral authority to make environmental claims. Environment here is broadly understood as more-than-human life and landscape (Pulido 1996).

4. See, for example, the UK’s behavioral insights team (<https://www.bi.team/>), partially funded by the UK Cabinet’s office.

5. Consumption-based accounting of greenhouse gas emissions has been used to examine the role of individual and household consumption in climate change (Dubois et al. 2019; Mi et al. 2019; UN Environment 2020). Some of these studies demonstrate that many Global North countries and cities have reduced their territorial greenhouse gas emissions (the more traditional way of attributing greenhouse gas emissions) by simply displacing their emission-producing activities to local and global hinterlands. “Cleaning up” carbon emissions in one context is thus accomplished by discarding it elsewhere, a key technique of power as illuminated from a discard studies perspective (Liboiron and Lepawsky 2022).
6. More on this point in chapters 3 and 5, but, for a preview, see Gidwani and Reddy (2011), Schindler and Demaria (2019), M. Yates (2011).
7. The top 10 percent in turn contribute 40 percent of global greenhouse gas emissions, while the bottom half of the world’s population account for only 13 percent of global greenhouse gas emissions (Chancel and Piketty 2015).
8. Emission disparities among different expenditure classes in India vary tremendously. Parikh et al. estimate that, in 2003–2004, the emissions produced by the top 10 percent of urban India (roughly 30 million people) were about fifteen times those of the bottom 10 percent of urban India, and about twenty-four times the emissions of the bottom 10 percent of rural India (Parikh et al. 2009). Using a different methodology that relied on an aggregate measure of class status combining income, occupation, and consumption profile, Michael and Vakulabharanam find that India’s highest emitting class, urban elites, emit almost seven times that of the lowest emitters, rural agricultural workers (Michael and Vakulabharanam 2016). By comparison, the per capita emissions of the richest 10 per cent of US residents is almost twelve times higher than that of the richest Indians (Bhushan 2018).
9. For work on sustainable consumption as prefigurative politics, see Schlosberg and Craven (2019), L. Yates (2015).
10. Ecological citizenship, Andrew Dobson’s normative theory of environmental action, posits that individuals who have historically taken more than their fair share of global resources should voluntarily compensate for this by taking on public and private actions that have beneficial outcomes for the environment (Dobson 2006).
11. This practice-based conception of class, drawn from Bourdieu’s concepts of *habitus* and *field*, theorizes how class structures are reproduced by social groups through everyday practices. In Bourdieu’s formulation, habitus is first shaped in the intimate context of the home, where individuals are socialized into certain ways of being and interacting with the world even as they are acquiring skills and cultural competencies. The social field (such as educational institutions or workplaces) is the setting in which these skills and dispositions are deployed and strengthened. Individuals thus build cultural capital, the combination of values, tastes, cultural goods, and

qualifications that one acquires by being in a particular social class. Cultural capital, along with economic resources and social connections, becomes the structural basis of class power and the means for creating and maintaining social distinction. Bourdieu defines the habitus as a “systems of dispositions, characteristic of the different classes and class fractions” (Bourdieu 1984, 541).

12. Carfagna et al. define eco-habitus as “a reconfiguration of high-status tastes that is part of a re-articulation of the field of high-class consumption, fostered by a more general social valorization of environmental consciousness” (Carfagna et al. 2014, 161).

13. For critical analysis of green lifestyles and sustainable consumption, see Guthman (2003), Johnston (2008), Johnston, Szabo, and Rodney (2011), Maniates (2001).

14. Bourdieu defines social capital as the “aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group which provides each of its members with the backing of the collectively-owned capital” (Bourdieu 2002, 88).

15. Cultural capital, for Bourdieu, is the basis of any strategy of social distinction. He distinguishes three types of cultural capital: the embodied state (long-lasting dispositions of the mind and body), the objectified state (cultural goods), and institutionalized state (obtained through educational qualifications).

16. See also Pathak (2020).

17. Writing about the politics of slum demolition in New Delhi, Asher Ghertner argues that the “rule by aesthetics” has emerged as the primary way authorities decide what land uses are permitted or criminalized (Ghertner 2015, 6).

18. Govind Gopakumar documents a similar pattern in his study of automobility in Bengaluru. He talks about a discourse that diagnoses the rising number of automobiles as a major problem in the city. There is a contradiction here—those complain the most are often also always using automobiles; see Gopakumar (2020).

19. For a careful treatment of how greening projects became central to urban planning’s efforts at creating and managing governable spaces and social improvement in multiple contexts, see Angelo (2021).

20. Gauri Pathak warns this is part of a soft-Hindutva strategy of recasting India from a secular to a Hindu-supremacist nation (Pathak 2021).

21. Gandhian nationalism in particular correlated the ability to regulate the self and public space with the ability of formal political self-rule. Garbage in this sense is a barrier to modernity, development, and progress. See Chakrabarty (1991), Hodges (2013), Kaviraj (1998), Prashad (2001).

22. For instance, just as air quality in US cities improved, it has deteriorated in China, India, and elsewhere in the Global South, as these places have become the USA's industrial heartlands, globalizing the ecological shadows of consumption (Dauvergne 2010).

23. This notion connects to Mary Douglas's framing of dirt as matter out of place. Signaling unhoused people or shelters as dirty is a means of indicating them as unacceptable within a social order, where the act of discarding maintains the order. However, as Max Liboiron and Josh Lepawsky contend, not all garbage/waste should be understood as dirt, and cleanup cannot always be conflated with purification. Sometimes cleanup is necessary to challenge power or oppression. At other moments, it becomes a tool to maintain it. Context and social relations determine when garbage functions as matter out of place (Douglas 2003; Liboiron and Lepawsky 2022).

24. As was the case in Chennai, my hometown, where communities living by the banks of the Adyar River were displaced to create an eco-park called the Adyar Poonga. For more discussion on the displacement of informal settlements and livelihoods to create green spaces, see Coelho (2020), Ellis (2011), Zimmer, Cornea, and Véron (2017).

## Chapter 2

1. The name of the group has been anonymized for confidentiality.
2. The image of a dead cow elicits a particularly strong response from the crowd. Saving cows from plastics has emerged as a key concern for some fractions of dominant-caste Hindus who venerate the cow as sacred. This is likely connected to the rising expressions of Hindutva in urban environmental politics (Pathak 2021).
3. For a small sampling of the many analyses on this topic, see Agyeman et al. (2016), Barr and Devine-Wright (2012), Bulkeley and Fuller (2012), McLaren and Agyeman (2015).
4. Exemplified best by the original work of Elinor Ostrom, this work on environmental collective action explores the factors that determine whether and how communities (variously defined) successfully develop long-standing institutions (rules, codes, accountability mechanisms, and the like) needed to govern a common or shared resource in a sustainable manner (Ostrom 1990).
5. As summarized and argued in these cited studies, amongst many others: Agrawal and Gibson (1999), Blaikie (2006), DeFilippis, Fisher, and Shragge (2006), Joseph (2002).
6. In addition to care work and socially-reproductive work, the term social infrastructure is used by feminist geographers in a more expansive way to refer to all socially reproductive work that sustains life and economic enterprise (Hall 2020).
7. Aman Luthra argues that women working in the home are increasingly being conscripted into the agendas of governmental campaigns like Swachh Bharath,

which emphasizes household segregation as key to resource recovery and clean cities. This is concomitant with the increased push toward the privatization of waste processing through waste to energy plants, which demand clean feedstock of dry waste (Luthra 2020).

8. Some comparable social groups have done so in California and other parts of the United States. See MacBride (2011).

9. Gopakumar describes this agenda of taming “unruly and unsanitary” spaces with urban planning and sanitation systems while chronicling Bengaluru’s landscape histories (Gopakumar 2020).

10. For a discussion of Brahmin, male dominance in urban planning, and infrastructure in the city, see Gopakumar (2020).

11. This is not unique to Bengaluru, but a phenomenon in Indian cities and beyond (Luthra 2020; Melosi 2004). This was also prevalent in Bengaluru in earlier eras, albeit at a smaller, neighborhood scale. For instance, in the 1990s, the Bengaluru Municipal Authority partnered with a civic organization called Swabhimana to recruit middle-class women into coordinating waste segregation programs in some select localities.

12. This focus on consumer action is also more broadly true of anti-plastics and zero-waste discourse more globally, which has focused on consumer plastics rather than the industrial use (and disposal) of plastics (Liboiron 2021; Mah 2022). This is despite the fact that postconsumer or municipal waste is a small part of overall waste produced in most economies, including India (Pathak 2020).

13. As part of my field research, I visited twelve apartment complexes and commercial spaces that had installed zero-waste management infrastructure such as dry waste collection and sorting centers, composting units, and biogas plants. Many of these initiatives were in relatively new gated communities that had been built in the peripheries of Bengaluru in the past decade (like in Uttarahalli, Kengeri, Jakkur, Byatranapura, Kalyan Nagar, and J. P. Nagar), while some were in older, central neighborhoods like Malleswaram, Seshadripuram, and Jayanagar. These areas generally received waste management services either directly from the BBMP or from its contractors. I also visited schemes in two newly created “revenue layouts” (unauthorized neighborhoods built on agricultural lands) that did not receive any BBMP services, and thus had self-organized for their waste management needs. I interviewed representatives from ten waste-engaged civic and nongovernmental organizations. I also monitored and engaged in social media conversations on waste management via Facebook and email listservs.

14. Here I am invoking insights from social practice theory, which has been applied widely to the study of the dynamics of everyday life, particularly in relation to questions of sustainable consumption. Practice theorists see the everyday social as embedded in and reproduced through practices that are, in turn, anchored in material

arrangements, social norms, and teleoaffective structures. Emotions are a key part of teleoaffective structures, which prominent practice theorist Theodore Schatzki describes as the pattern of orientation toward goals (teleo) and motivational engagement through emotions (affect). Emotional states associated with a practice dictate whether a particular practice is seen as right or wrong, sanctioned or transgressive; they vary by context or situatedness of the practice. Pierre Bourdieu, another theorist who put social practices as the center of his analysis of how social structures were reproduced, studied emotions as part of habitus, that is, the systems of embodied dispositions for thought and action that mediate and confront new experiences. For more on practice theory, see Reckwitz (2002), Schatzki (1996), Shove, Pantzar, and Watson (2012), and Warde (2005).

15. The term affective labor is attributed to Michael Hardt and Antonio Negri in *Empire* as a form of “immaterial labor” that they argue is increasingly channeled into productive forces in late capitalism (see Hardt and Negri 2000). However, Hardt and Negri’s conceptualization has been widely challenged by feminist thinkers as lacking a serious consideration of the gendered nature of socially reproductive labor and as re-mystifying reproductive work as producing solely states of being or regimes of feeling (Federici 2008; Schultz 2006). I am deploying Hardt and Negri’s term in its more narrow sense, as labor that targets the emotional states of others.

16. I provide more description of these collectives in prior publications (M. Anantharaman 2014). More generally, “communities of practice” have been critical in changing unsustainable social practices in several contexts (Sahakian and Wilhite 2014).

17. The move away from electoral politics is often justified by people in community-based projects as a more effective and expedient way of making social change (Kennedy, Johnston, and Parkins 2018). Yet in India, middle-class place-based associations have had a long record of engaging local councilors and municipal authorities to advance their goals, and even of employing “political-society” strategies more commonly used by working-class communities (Kamath and Vijayabaskar (2014); referencing Chatterjee’s (2006) distinction between working-class political society and middle-class civil society).

18. For more on this tension, see Bhan (2016), Ghertner (2011a), Roy (2009a).

19. María José Zapata Campos and Patrik Zapata note this potential of citizen-driven initiatives to infiltrate governmental schemes with radical rationales that can become activated in the future, contributing to what they call diachronic change (Zapata Campos and Zapata 2017).

### Chapter 3

1. Formerly the city’s central jail, Freedom Park is Bengaluru’s designated home for protests and *dharnas*.

2. One of the main organizers was also the lead behind the Swachha Bangalore program that had privatized waste management in the city in the early 2000s.

3. This was quoted in a newspaper report (“Bangalore Gets Together for ‘Clean-Up’ Fest” 2013).

4. This “world-class” and corporate-friendly aesthetic was sometimes in tension with TCGF’s messages on behavior change and citizen responsibility. I had a front seat to the debate and conflict that came up in the organizing of this event. A consulting company that worked with City Connect had hired me to document all the panel discussions. I also joined some of the event organization meetings as part of my work supporting TCGF.

5. Indeed, the only times I heard Kannada spoken at the event were when corporators made a point to speak the local language to reassert vernacular voice, or in the training sessions held for *pourakarmikas* (sanitation or conservancy workers) at the event. On the last day, a representative from the *pourakarmikas* labor union was finally invited to speak at the closing panel. When I caught up with him after the event, he was incensed. He could barely get a word in. Waste workers, whether *pourakarmikas* or waste pickers, were sidelined, silenced, patronized, and spoken down to. I wrote in my field notes, “How can a weeklong expo on waste management go with almost no involvement from the people who actually work with waste on a daily basis?” This statement reflects my then naivete of the caste and class politics of urban development in India more than anything else.

6. This is a good example of *metis* or embodied knowledge that waste workers hold. The *pourakarmikas* are right that if they have only two bins, then even if one household fails to segregate waste properly, they can no longer keep the materials separate. These categorizations of dry versus wet waste also ignore other materials like sanitary napkins or diapers that can be neither composted nor recycled. Ultimately, after much discussion and lobbying by groups representing waste workers, the rules included a category for hazardous waste.

7. Much of the high-value waste would be diverted anyway by informal workers. Estimates suggest that India recycles about 60 percent of the 5.6 million metric tons of plastic thrown away every year, compared to about 9 percent in the United States (Doron and Jeffrey 2018, 128). Waste diversion is often used as a tactic to dismiss waste picker’s contributions (Luthra 2020).

8. For discussion on how racialization operates in relation to capitalism and produces particular patterns of land dispossession and environmental injustice, see Ranganathan (2016), Melamed (2015), Reddy (2021), and Pulido (2017a).

9. Srinivas (2002) does an excellent job describing Brahminical ritualistic cleaning and obsession with purity pollution. Her descriptions resonate with my own personal experiences of being reprimanded for serving myself at my grandmothers’ table,



touching the pickle jar while on my period, and touching “purified” clothes (called *madi*, in Tamil) when I had not recently bathed myself.

10. Vinay Gidwani and Anand Maringanti call this work “infrastructural labor,” which they argue is essential for re-creating the conditions of possibility for both urban life and capitalist enterprise (Gidwani and Maringanti 2016). Gidwani further explains that waste pickers produce what Marx called capital’s general and external conditions of production through their infrastructural labor in the infra-economy (2015).

11. It is worth noting that, throughout her work, Spivak is critiquing and trying to resist the ways in which postcolonial scholarship and subaltern studies essentializes third-world subjects. Further, as Max Liboiron and Josh Lepawsky (2022, 112–113) point out, drawing on the work of Eve Tuck (2009), bell hooks (2014), and others, essentializing, when part of justice struggles, often involves using damage-centered narratives to demonstrate to those in power what type of justice or recompense is needed. Consequently, “oppressed” communities are often reduced to just that, the “oppressed.” While I have certainly fallen into this trap myself in this book, my analysis is shaped by my desire not to reproduce only damage-centered narratives about waste pickers (itself an essentialized category!); for more on that see Sneha Sharma’s analysis (2022, 187).

12. My illustration of waste picking, which is a broad term referring to a range of dynamic practices from sorting through mixed waste at the roadside or in transfer stations, to wading through municipal dumps and sanitary landfills to glean valuable materials, is highly abstracted. Other scholars have produced detailed and careful treatment of the general characteristics of waste-picking occupations (Dias 2016; Dias and Samson 2016; Gutberlet 2012; Porras Bulla, Rendon, and Espluga Trenc 2021; Wittmer and Parizeau 2016); its spatiality, negotiability, and social relations, which vary significantly from context to context (H. Anantharaman 2019; Butt 2019; Calleja 2021; Fahmi and Sutton 2006; Gidwani 2013a, 2015; Gidwani and Chaturvedi 2013; Gill 2007; Kornberg 2020; Samson 2010; Schenck and Blaauw 2011); and thoughtful ethnographic portrayals of the work and its communities (Millar 2018; O’Hare 2022; S. Sharma 2022).

13. Personal communication and review of data from Parisara Tanda staff who have been registering and enumerating waste pickers in the city, updated 2022. According to these staff members, Adidraidas are the largest Scheduled Caste group, many of whom are Tamil or Telugu speaking. Among Scheduled Tribes, there are Hakki-Pikki communities, some of whom specialized in specific materials like bones or hair. Published studies of the sociological composition of waste pickers are now dated. A 2010 study by Mythri Sarva Seva Samithi (MSSS) revealed that the majority of Bengaluru’s waste pickers belonged to Scheduled Castes (SC), Other Backward Castes (OBC), or Scheduled Tribes (ST) including nomadic communities (CHF International and Mythri Sarva Seva Samithi 2010). In 2016, the Alliance of Indian Waste Pickers surveyed 1,896 waste pickers across the country, finding that 54 percent of the

sample identified as SC and 28 percent as ST; 68 percent identified as women. Bengaluru also has many Muslim waste pickers who are migrants from East and North-east India (Chandran, Narayanan, and Subramanian 2019).

14. As documented in Mexico City (Guibrunet 2019), Delhi (Luthra 2019), Chennai (H. Anantharaman 2019) and more generally (Guha-Khasnobis and Kanbur 2006; Meagher 2013).

15. These modes of negotiation and practical legitimation are central to how informal work and economies persist even in the face of punitive policies or competition from more well-resourced private players (H. Anantharaman 2019; Butt 2019; Calleja 2021; Kornberg 2020; Luthra 2019).

16. Caste is also locked in through hiring practices. As Pradeep Salve and coauthors show through a study in Mumbai, municipal conservancy and sanitation work has become a hereditary occupation thanks to a policy that promotes preferential hiring for the relatives of current conservancy workers. A conservancy worker can nominate his wife, son, brother, unmarried or widowed daughter or sister, or any other dependent to the post of conservancy worker after retirement, death, or permanent disability. While this policy was created in 1972 to purportedly economically empower this community, some activists have strongly condemned it as a casteist and regressive system. The overall shortage of jobs and high levels of unemployment also push members of oppressed castes into waste occupations (Salve, Bansod, and Kadlak 2017).

17. The term resourcification offered by Hervé Corvellec and coauthors makes clear that resources are not simply already here but are the outcome of social processes that condition what is considered a resource (Corvellec et al. 2021). Indeed, waste pickers were the original pioneers of treating waste as a resource by denaturalizing it, distinguishing materials of value in discard, and, as Melanie Samson suggests, creating a new commodity frontier (Samson 2019).

18. I saw this firsthand when I attended the Rio 2012 Conference on Sustainable Development. EU think tanks and representatives like the European Environmental Agency (EEA) were particularly concerned with the issue of the world running out of vital resources and the urgent need to recover mineral resources from waste. I recall attending the premier of a documentary called *Planet Rethink*, produced by the EEA and the United Nations Environment Program, that drove home these points. In subsequent years, the European Commission has published several reports on resource scarcity and the need to transition to using waste as a resource; see European Commission (2017, 2018).

19. For more discussion on this, see Corwin (2020), Knapp (2016), Reddy (2016), Schindler and Demaria (2019).

20. The analysis is based on conflicts recorded in the Global Atlas of Environmental Injustice (Demaria and Todt 2020).

21. I first heard about the then-nascent Parisara Tanda from one of my interlocutors within the middle-class-dominated zero-waste movement in September 2012. My research at that moment was focused primarily on understanding middle-class environmental subjectivities and community-based environmental activism. I had never intended to dig into the labor question of urban environmentalism, reflecting gaps in my own education and thinking that had hidden from me the ways in which middle-class environmental activism was connected to or disconnected from the concerns of other social groups. However, my interviews with zero-waste enthusiasts and observations of community-waste management efforts had alerted me to two things: first, that ZWM systems were labor-intensive, and figuring out how to train and manage labor was a key preoccupation of zero-waste proponents (as discussed in chapter 2), and second, that ZWM members were beginning to learn about and discuss the role that the “informal sector” should or should not play in the zero-waste infrastructures they were advocating for. Soon, WIEGO hired me to work as a consultant helping the organization develop their website. I also wrote grant applications to find funding for the six staff members who at that point made up the not-yet-officially-registered organization. During that period, organizing and advocacy efforts were intense. We featured case studies of waste-picker integration in an attempt to demonstrate to Bengaluru’s elites that other global cities had integrated waste pickers resulting in good environmental and public cleanliness outcomes. I played a role as an interlocutor among different community actors, writing up short case studies to share with the middle-class ZWM activists they were trying to influence. Since 2012, I have continued to support Parisara Tanda, assisting them in their internal research and external outreach activities. I have proofread reports, commented on research design, and joined the organization on some public-facing events. My positionality as someone who has supported the organization’s efforts and strategies certainly influences my analysis of their work. At the same time, I aim to be critical and have posed questions to staff and leaders. This inside/outside positionality is a common challenge in community-engaged research and one that has a structuring effect on the knowledge claims produced here. Readers would do well to keep this in mind.

22. An analysis of nine informal worker movements in four countries found that the impetus for organizing informal workers largely came from the efforts of middle-class actors belonging to nongovernmental organizations (NGOs) (Chikarmane and Narayan 2005; Dias and Samson 2016). In Delhi, while the middle-class-staffed NGO Chintan trains waste pickers and represents their perspectives in policy fora (Luthra and Montieth 2021), Safai Sena, a registered group of waste pickers and small scrap dealers, has more grassroots presence and coordinates work contracts. In Pune, waste pickers are represented by a trade union called Kagad Kach Patra Kashtakari Panchayat (KKPKP) and access work opportunities through a cooperative called SWacCH, which is operated by a professional staff. More research is needed to understand how the presence of elite and middle class interlocutors in NGOs and social movements impacts modes of organizing, claims-making, and achievements, especially because recent studies have established that many movements assumed to

be mass environmental struggles, such as the famous Chipko movement, were dominated by a class of leaders (Kashwan 2022). For examples of work that examine the role of intermediary organizations and individuals, and the uneven effects of NGOs, see H. Anantharaman (2019), Dhananka (2010), Doshi (2013), McFarlane (2008), Rosaldo (2016), Schuller (2009), M. Sharma (2017a).

23. All India Central Council of Trade Unions (AICCTU) is a central trade union federation in India.

24. Starting and maintaining waste-picker organizations is a difficult project, and waste-picker organizations take many organizational forms based on local complexities. They range from trade unions, like KKPKP in Pune, to cooperatives and self-help groups to microentrepreneurs supported by NGOs. The degree to which waste pickers speak for themselves versus being represented by non-waste pickers also differs significantly (Kain et al. 2022; Rosaldo 2016). In Brazil and Colombia, waste pickers are self-organized into strong trade unions and cooperatives, while in Africa, there are more NGOs or self-help groups convening waste pickers (Kain et al. 2022; Rosaldo 2016; Samson 2016; Zapata Campos et al. 2021).

25. Parisara Tanda tried to register itself as a cooperative to follow in the footsteps of SWaCH Wastepicker Cooperative in Pune. Ultimately, however, they decided against this, because the Karnataka Souhardara Sahakari 1997 Act does not permit or support multipurpose cooperatives. When I asked staff members whether another challenge was that they had not organized enough waste pickers to function as a co-op, they said that organizing was not an issue. One member said, “The overarching climate favors companies, cooperatives are not encouraged or helped. While we are not formally a member-based organization we work like one. We are a hybrid organization that defies current classifications” (December 2018 interview at Parisara Tanda offices).

26. The organization’s original mission statement reads, “Parisara Tanda, started in 2013, is an organization of waste workers that works towards improving the livelihood and quality of life of waste pickers by providing total waste management services through them to bulk generators of waste. It also provides social services and support to the waste picking community. Parisara Tanda therefore impacts both lives and the environment.”

27. Twitter post, June 5, 2019, 12:06 p.m.

28. These savings were calculated based on the “avoided landfilling cost.” At the time of this report, the BBMP was paying 2,219 rupees per ton of garbage dumped at the landfill to the landfill operator. The organization calculated how many tons of recyclables were being diverted by their waste pickers and used that to come up with a “savings” number.

29. Waste picking accrues value beyond what is utilized or accessible to waste pickers for their reproduction. Some of this value is accrued to economic actors higher

up the value chain. Value also accrued in the form of savings to municipality. The final form of value is the environmental value produced.

30. For a more in-depth discussion of rethinking informal work, see Millar (2018), O'Hare (2022), Tucker and Anantharaman (2020).

31. Indeed, Parisara Tanda emphasized the autonomy and independence of waste pickers as a positive attitude, and something that made them capable of puzzling out value in waste. This is akin to the narrative Katherine Millar builds out through her study of Catadores in Rio de Janeiro (Millar 2018).

32. Gidwani explains the push and pull factors bringing people, especially Dalits, to cities. He argues that, in addition to economic factors, people seeking to escape oppressive social hierarchies in villages operating on the basis of caste also migrate to cities (Gidwani 2015). Millar also notes that Catadores in Brazil see the dump where they pick waste as a "refuge," providing one of the few self-employment options that enable individuals to retain some autonomy and control over their lives (Millar 2018).

33. Swetha Dhanaka Rao notes this as well, styling Bengaluru as an entrepreneurial city (Dhananka 2010).

#### Chapter 4

1. For a selection of studies documenting this, see Anguelovski and Connolly (2021), Bulkeley (2013), Bulkeley, Castán Broto, and Maassen (2014), Chini et al. (2017), Rosan and Pearsall (2018), Stehlin (2019). Note that some of these infrastructures are also tied to the broader project of climate adaptation and mitigation, and thus might be better described as climate urbanism.

2. For key articulations of this in the Bengaluru context, see work by Malini Ranganathan and Govind Gopakumar (Ranganathan 2014; Gopakumar 2020).

3. De-risking describes the financial and policy processes through which private investors as well as government authorities attempt to decrease the downside risks of investments. Strategies can include passing off costs onto third parties, changing policies to reduce barriers to technology deployment, or floating new spin-off companies or public-private partnerships to protect the main agency or company from bankruptcy (Schmidt 2014).

4. See, for example, recent work on the link between bicycling infrastructure, urban greening, and gentrification (Checker 2011; Gould and Lewis 2016; Hoffmann and Lugo 2014), and also broader, more systemic critiques (Castán Broto and Westman 2019; Luque-Ayala, Marvin, and Bulkeley 2018; Ramaswami 2020).

5. Slum settlements were forcibly removed under the guise of flood-prevention efforts in Mumbai and public transit networks in Chennai (Doshi 2019; Narayan 2015).

6. Green here refers to “nature in the city . . . in its more verdant, simplistic and realistic form,” while gray refers to “the concept of social, technological urban space as inherently sustainable,” or the promise of technical expertise, efficiency, and ultimately, modernity (Wachsmuth and Angelo 2018, 1040).

7. Key examples of studies of infrastructuring that have influenced my own approach to studying these everyday processes include Gopakumar (2020), Millington and Scheba (2020), Stehlin (2019).

8. A situated urban political ecology approach, articulated initially by Lawhon, Ernston, and Silver (2014), differs from traditional “Marxist” urban political ecology in that it emphasizes exploring how notions of people as infrastructure, embodied experience, and situated knowledge are central to urban political ecologies, as opposed to starting with an abstract Marxist notion of power. It also considers the ways in which socially reproductive work (discussed in chapter 2) functions as social infrastructure that enables capitalist enterprise as well as life in the city.

9. The concept of heterogeneous infrastructural configurations suggests a rethinking of infrastructure from cities of the Global South, enabling a “clearer analysis of infrastructural artefacts not as individual objects but as parts of geographically spread socio-technological configurations: configurations which involve many different technologies, relations, capacities and operations, entailing different risks and power relationships” (Lawhon et al. 2018, 723).

10. See Doherty (2021), Fredericks (2018), Graham and McFarlane (2014), Silver (2014), Stamatopoulou-Robbins (2019).

11. For a selection of infrastructural citizenship studies, see Anand (2017), Fredericks (2018), Moore (2012), Ranganathan (2014).

12. There are no agreed-upon numbers regarding the number of operating DWCCs. The BBMP claims to have commissioned 189 according to its SWM data portal as of 2022.

13. I traced the DWCC in several ways. I visited some of the earliest iterations during fieldwork in 2012–2013. In 2018, I visited an upgraded DWCC operated by waste pickers affiliated with Parisara Tanda. From 2012 to 2019, I created a database of newspaper articles and social media posts about DWCC. I conducted document content analysis on this database to trace both how the material forms and the perception of the DWCC shifted. I also rely on waste-picker- and Parisara-Tanda-produced analyses and reports, alongside information from the BBMP website.

14. For an analysis of the conflicts and politics around incineration in Delhi, see Demaria and Schindler (2016), Kornberg (2019b).

15. The Clean Development Mechanism was a financing tool designed to attract financing for carbon mitigation projects in the developing world while simultaneously

enabling top polluters to meet climate targets without changing domestic industrial or consumption conditions. It is among the many carbon finance tools that apply market principles to explore achieving climate mitigation at least cost (Newell and Paterson 2010). Like many other schemes, its local environmental impacts are considered secondary to overall aggregate outcomes of greenhouse gas reduction (Hesketh 2022).

16. Assa Doron and Robin Jeffrey offer a careful discussion of the challenges of implementing incineration technologies in India in their treatise on waste in India (Doron and Jeffrey 2018, 146–153).

17. Middle-class organizations frequently allude to state/bureaucratic corruption as a reason that Indian cities continue to be plagued by infrastructural and environmental issues. These simplistic narratives are used to sometimes push for greater privatization of infrastructures. A critical analysis of these corruption narratives and their intersections with classed and raced privilege is presented by Sapana Doshi and Malini Ranganathan (Doshi and Ranganathan 2017, 2019).

18. This quote is from a slide deck presented by a ZWM member in September 2012.

19. Though municipal recycling is in many cases just the displacement of burdens of waste processing to faraway places (Gregson et al. 2016; Heiges and O’Neill 2022; MacBride 2011).

20. Decentralization, self-reliance, and localism are common tropes in middle-class civic and sustainability politics, both in India and beyond, a framing that the state propagates via its governmental schemes (Anjaria 2009; Hébert and Mincyte 2014; Roy 2009a). See chapter 3 for more.

21. Numbers have been calculated by the author based on newspaper articles and communication (BBMP 25 lakhs/center \* 200 centers= 50 crore rupees. Three waste-to-energy plants= 600 crore rupees).

22. This explanation for the benefits of coproduction of urban services is aligned with the perspective offered by Elinor Ostrom and her followers, who argue that coproduction can have clear economic benefits (more efficient, less costly), while also reinvigorating greater participation in civic life through communitarian engagement (Moretto et al. 2018; Ostrom 1993, 1996). Durose and Richardson further contend that coproductive approaches might be more effective at solving “wicked problems” (such as garbage), where public policy-led approaches have had limited success (Durose and Richardson 2015).

23. ITC runs a corporate social responsibility scheme then called Wealth out of Waste (WoW), which operates across several Indian cities. Motivated by a legislation that requires all companies to divert 2 percent of their profits to CSR schemes, ITC also saw a win-win in obtaining access to paper for its paper mills (for more information about this scheme, see Doron and Jeffrey 2018, 203–205). In Bengaluru, they

collected dry recyclable waste from large apartment complexes every week, paying households the nominal sum of 2 rupees/kg of mixed dry waste. The company had invested in equipment and had tie-ins with local waste collection contractors and NGOs for labor. In 2017, ITC, in partnership with a diverse collection of NGOs, operated somewhere around sixty dry waste collection centers in Bengaluru, for example, in partnership with the Samarthanam Trust for the Blind.

24. In 2022, thirty-nine DWCCs were operated by waste pickers and scrap dealers. These numbers have fluctuated. The highest number was forty-four just before the pandemic (review of data from Parisara Tanda). In 2022, I met a waste picker who had left her DWCC just as the pandemic hit. She explained that she realized that, with everything shut down, the price of plastics was going to fall with the price of oil. So, she decided to cut her losses and go back to her village in Tamil Nadu for a while. She was now back in Bengaluru and about to start working as a sorter in a new waste processing center commissioned by Parisara Tanda and partners.

25. According to the BBMP dashboard, in 2021, approximately 58.5 percent of the city's waste generation is from households, 49.7 percent from commercial establishments, and 6.8 percent from street-sweeping. The per capita waste generation from regular households in the city is 309g/day, and that from slums is 300g/day. (See <https://apps.bbmpgov.in/swmreports/>. Last accessed 10/11/2022.)

26. Though noting that DWCCs are not required to collect or process waste from bulk generators like hotels, hospitals, or apartment complexes, which, according to the 2012 guidelines, are supposed to have in-house storage and sorting systems. Yet, DWCC operators are often asked to service these spaces too.

27. Liboiron and Lepawsky introduce the term scalar mismatch to discuss how partial knowledge undermines effective, appropriate, and just responses to dysfunction in waste systems. Scalar mismatch, in their words, is "where one instance is taken to be the whole phenomenon or where one perspective is assumed to work in all cases" (Liboiron and Lepawsky 2022, 39). This broader point about the situated nature of knowledge, and the concomitant need to consider how positionality affects research and knowledge claims, is a central contribution of feminist standpoint theory and Black feminist thought (P. H. Collins 2002; Harding 2004). For a connection to critical sustainability and environmental studies, see Stephens (2020) and Castán Broto and Westman (2019, 58–63).

28. The public interest litigation demanded that DWCCs not be added into the general tenders for waste collection and street-sweeping.

29. For a testimony about the challenges posed by COVID-19 from a waste picker who operates a DWCC in Bengaluru see <https://bengaluru.citizenmatters.in/covid-19-lockdown-waste-collectors-masks-gloves-segregation-hazard-dwcc-indira-canteen-44966>.



30. The radio-show interviews are conducted in Tamil or Kannada. I listened to the radio shows, transcribed them, and translated these excerpts from Tamil/Kannada into English. They are shared with the permission of Radio Active.

31. This decision was codified in 2020 in the BBMP By-Laws on Solid Waste Management.

32. This decision was driven by the Karnataka state government, which in contravention of several acts and laws decided to set up a new corporation called the Bengaluru Solid Waste Management Company to handle waste management in the city (Menezes 2022a). This move is undemocratic, as it moves waste management systems further away from the control of local governments and citizen committees to instead increase the power of a small number of technocrats. As its first move, this company proposed scrapping the existing system in which dry and wet wastes are collected separately, and instead moved to appoint a single agency to collect all types of waste. This model emulates Indore, celebrated by the central government as India's cleanest city for four consecutive years. Yet, waste pickers lost out in the Indore model (global\_rec 2018).

33. A 2021 study found that only 15 percent of the city's dry waste is processed in these centers, with a majority still being dumped in peri-urban areas (Sensing Local 2022). With the closure of Mandur and Mavallipura, new dumps were set up in abandoned quarries and in *gommala* lands (Akshatha 2019). Bengaluru has also commissioned waste processing centers in villages outside the city, much to the chagrin of local residents, who complain about smell and leachates from unsegregated waste dumped outside some of these centers (Bhat 2020; Doron and Jeffrey 2018, 194–198; Prasher 2022).

## Chapter 5

1. Nonresident Indians (NRIs) have a large presence in cities like Bengaluru and Hyderabad. The two cities host offices of several multinational IT corporations like Microsoft, Google, and Wipro. Anna Lee Saxenian has brought our attention to the role of NRIs as facilitators of trade with and investment in their countries of origin. Moreover, in the 2010s, there was a trend in NRIs moving back home. They bring with them connections to investors abroad as well as new social and environmental values. Ex-NRIs are also well-represented in the eco-lifestyle communities I studied (M. Anantharaman 2017; E. Chacko 2007; Saxenian 2002, 2005).

2. I find the use of “virgin” to refer to materials in this manner very sexist and antiquated. However, this is the dominant term used in these spaces.

3. For some examples of policy and journal articles pointing to the win-win promises of the circular economy, see Ellen MacArthur Foundation (2016), European Commission (2018), Gower and Schröder (2016), McGinty (2020), Stahel (2016).

For example, the World Bank in its “What a Waste 2.0” report argues that, when waste pickers are properly supported and organized, informal recycling can create employment, improve local industrial competitiveness, reduce poverty, and decrease municipal spending (Kaza et al. 2018). Melanie Samson documents this trend from her vantage point as a key scholar-practitioner affiliated with WIEGO (Women in Informal Employment: Globalizing and Organizing) (Samson 2019). For in-depth, critical review of circular economy discourse and practice, see M. Anantharaman (2021), Corvellec, Stowell, and Johansson (2022).

4. My analytic here sees the local and global as a continuum. This story has always implicated and invoked ideas, people, and places beyond Bengaluru. In this chapter, I show how what is happening in Bengaluru is in turn creating the conditions of possibility for imagined and hoped-for global circular economy transitions. The local is not simply affected by global forces. This, for example, has been posited in the “impact model of development” (Parnell and Robinson 2012), but here I understand the local-global as co-constitutive sites of friction (Tsing 2011).

5. At the 2020 EU-India Summit on Cooperation, the two parties issued a declaration in support of “enhancing resource efficiency and moving towards a more circular economic model that reduces primary resource consumption, striving towards non-toxic material cycles, and enhances the use of secondary raw materials,” as part of a cooperative act to achieve Paris Climate targets and sustainable development goals (Barczak 2022).

6. It is important to note that waste and scrap trade is multidirectional, and, globally, can involve South-South trade as well as trade from South to North (Lepawsky 2018).

7. A similar rationale was offered for the Bo2W approach that UN StEP (Solving the E-Waste Problem) attempted to institute. The Bo2W approach tried to institute a commodity chain between high-income and low-income countries to leverage low-cost labor for manual disassembly in low-income countries and high-technology refineries in the former. According to Lepawsky et al., “Such a commodity chain is, according to Bo2W, a ‘win-win’ scenario since workers at manual disassembly plants would accrue benefits such as higher wages and improved occupational health and safety while high-technology refining facilities would gain access to low-cost but high-quality feedstock that is superior in purity to that derived from automated shredding of discarded electronics” (Lepawsky et al. 2017).

8. Several case studies of integration or inclusion have been analyzed in the literature, with the full range of emotions—from celebratory accounts to ones deeply critical of the whole enterprise to nuanced analysis in between (Gower and Schröder 2016; Gutberlet 2012; Gutberlet and Carezzo 2020; O’Hare 2020; Reddy 2015; Rosaldo 2019; Samson 2019).

9. I take a lot of inspiration here from the fantastic work of Melanie Samson (2015).

10. David Harvey uses the phrase accumulation by dispossession to refer to the continuation and proliferation of so-called primitive accumulation processes in the neoliberal era through privatization, financialization, and the management and manipulation of crisis, as well as through changes to the redistributive mechanisms of the state (Harvey 2010).

11. For a selection of studies on waste-picker activism strategies and wins, see Chintan (2012), Dias (2016), Gutberlet (2021), Kain et al. (2022), Rosaldo and Alegre (2016).

12. For a thorough discussion of the diverse forms of integration efforts, from those seeking to bring waste pickers into waged relationships to those that emphasize contracting with informal recyclers, see Samson (2019). Several other cases of integration have now been studied in the literature, covering diverse cities in Asia, Africa, and Latin America (Fergutz, Dias, and Mitlin 2011; Gutberlet et al. 2016; Manzi, Santana, and Marchi 2022; O'Hare 2020; Rosaldo 2019).

13. Primitive accumulation "freed" agricultural or other self-provisioning populations as proletarians, i.e., waged laborers who then have the surplus value they generate through their labor extracted as profit (Glassman 2016).

14. As EPR 2020 guidelines state, "Secondly, an important factor which is indirectly contributing to the cleanliness of the city are the rag pickers/assemblers/recyclers. They are anyway contributing to the mechanism of EPR without any benefit. This fraction of the stakeholders should be supported for the better management of the waste under the mechanism of EPR." See <http://moef.gov.in/wp-content/uploads/2020/06/Final-Uniform-Framework-on-EPR-June2020-for-comments.pdf>.

15. For a detailed description of the chains of resource recovery and value addition that span formal and informal sectors, see Doron and Jeffrey (2018, 211–231), Gill (2009).

16. See Thompson (2019).

17. The Body Shop, a multinational brand, has long styled itself as more ethical and eco-friendly than its competitors. In 2018, it committed to increasing the use of recycled plastic in its products (Purkayastha and Fernando 2007). On the company's website, we find a spirited invocation to corporate responsibility: "We want to find a use for the plastic that already exists in the world. By using Community Fair Trade recycled plastic from India, where almost a third of waste goes uncollected, we're fighting for people and the planet by supporting plastic 'waste pickers' with access to more sanitary working conditions, a fair price and the respect and recognition they deserve."

18. See Slavin (2019).

19. As described on their website (<https://www.plasticsforchange.org/offset>).

20. As described on their website (<https://foundation.plasticsforchange.org/>).

21. The NGOization of waste-picker struggles has produced conflict and debate, as recapped by Manuel Rosaldo (Rosaldo 2016).

22. It is worth reminding the reader here that the climate for claims-making is very hostile in Bengaluru today, particularly for Muslims and Dalits. In 2019, when the Citizenship Amendment Act was passed by the national government, de facto threatening to deprive many Muslims of their citizenship rights, some migrant waste-picking communities came under scrutiny and pressure. Migrant waste pickers from West Bengal (a state in India) were accused of being Bangladeshi and kicked out of their homes (AICCTU 2021).

23. In a 2013 interview, one member of Parisara Tanda's staff said the following:

But we are looking to build competency within waste pickers themselves because we know that it's a very important source of their livelihood. However, obviously we cannot employ all of them because dry waste collection is 200 of them. Even if you take five employees, it is just a thousand waste pickers that we have employed. So, we are trying to get these arrangements wherever we can actually. In apartments when you go and they said "oh we need housekeeping staff for segregation," we say, "why not employ the waste pickers that are actually supposed to come here and then segregate and then they'll get the money for whatever they do?" So some apartments have been open to that. We are trying to put them into wherever we feel that they can. (Interview with Parisara Tanda staff member, 2013)

24. See MindTree (n.d.), Mindtree Ltd. (2014).

25. Parisara Tanda invited loan officers from banks to visit DWCCs to impress upon them the economic viability of waste-picker-run businesses. Middle-class staff cosign loans with waste pickers. Using these strategies, they were successful in getting one lender to lower their interest rates from a prohibitive 15 percent to a more manageable 8 percent. As one Parisara Tanda activist told me in 2018, "The rich don't have to pay back their loans and will get unlimited lines of credit. The poor are always scrutinized. But our loan repayment rate is 98 percent. Right now, waste pickers have to spend 10 percent of their earnings on paying back loans they took. This needs to change."

26. Personal communication from staff members, 2020.

27. Personal communication and estimate by Parisara Tanda staff, 2022.

28. Melanie Samson terms this "epistemic dispossession" and "epistemic injustice." The epistemic injustice lies in not recognizing informal workers as producers of knowledge. Dispossession occurs when the knowledge is appropriated by private enterprises without compensation or even permission (Samson 2015).

29. I am invoking Raj Patel and Jason Moore's concept of cheapening, which they argue is a core mechanism through which capitalism overcomes its internal and external crises. "Cheap is a strategy, a practice, a violence that mobilizes all kinds of work—human and animal, botanical and geological—with as little compensation as possible" (Patel and Moore 2018, 22).

30. This vignette draws on the ethnographic fieldnotes I compiled while attending the 4th UNEA Assembly in 2019 as a panelist on a side-event. This specific panel that I recount was open to civil society observers such as myself.

31. Doherty here is referencing the findings from a widely cited study (Jambeck et al. 2015). Max Liboiron in *Pollution Is Colonialism* calls into question the quality and coverage of the data used in the study, something that the report authors also acknowledge. A major issue in this study was that it failed to consider import and export of waste and flattens both global flows and intranational differences by citing nation-level statistics. To quote Liboiron, “It is simply impossible math, pure charisma” (2021, 74). This study has been used by countries like the United States to shirk responsibility for plastic pollution, as the UNEA experience demonstrates.

32. “Plastic can be handled if it is segregated and recycled properly,” said Vijay Kumar V, President, Karnataka State Plastic Association (KSPA), in a 2020 interview with the Economic Times (Shekhar 2018). Gauri Pathak and coauthor note how the plastic industry in India took out ads to delay bans (Pathak and Nichter 2021).

33. Investigative journalist Amy Westervelt produced a four-part series on her podcast *Drilled* documenting connections between plastic use and the fracking boom. In an October 21 tweet, she summarizes the findings of the series: “TLDR; demand for fossil fuels in the transport and residential sectors are declining. Oil cos need to make that profit up somewhere and they’ve chosen to do it in petrochemicals . . . so, plastic. It’s a two-fer because they can make it with excess fracking crap.”

34. For the full text of the declaration for the meaningful inclusion and recognition of waste pickers and other informal actors, see the Global Alliance of Wastepickers (global\_rec 2022).

35. This is thoughtfully demonstrated in several studies that adopt a critical perspective on waste and systems of wasting (Arefin 2019; Doherty 2021; Liboiron 2021; Pellow 2004; Stamatopoulou-Robbins 2019).

## Conclusion

1. Deepak is referring to a policy decision by Narendra Modi’s BJP government that overnight rendered most of the currency circulating in the economy worthless. While the policy was purportedly designed to flush out “black money,” it had devastating impacts on the cash-oriented informal and rural economies of India.

2. I was for a long time in my life growing up in a Brahmin, middle-class household and community. I had naturalized these divisions and hierarchies in my life.

3. In October 2021, the BBMP Pourakarmika Sangha organized a citywide rally to protest unpaid and inadequate wages; disrespectful treatment by BBMP managers, contractors, and Bengaluru residents; and inhumane working conditions in what is essentially a caste- and gender-based urban occupation (*The Hindu* 2021b).

4. In the closing chapter of their key text on discard studies, Max Liboiron and Josh Lepawsky assert changing discarding means posing the question, “How can we discard well? And what does ‘well’ mean, and to whom?” Their question proceeds from their analysis that all systems must discard, and that there is no real “away” for waste (Liboiron and Lepawsky 2022, 125–133).

5. I was that child. Between the ages of six and when I left India at age twenty, I contracted malaria six times. Each time I became emaciated. The mosquitoes that grew aplenty in the waste-choked Cooum River next to my house loved me. My mother was asthmatic and allergic to every mosquito-killing chemical out there. My unfortunate nickname in school was Malaria. This formative experience was my first lesson in political ecology—there are no privatized, consumer-centric solutions to shared environmental problems.



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