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Kathleen Stokes

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Working toward infrastructural citizenship: state-society relations and community waste labor in Cape Town

Kathleen Stokes [ID]

School of History and Geography, Dublin City University, Ireland

ABSTRACT

As a conceptual device, infrastructural citizenship looks to bridge performed and legal interpretations of citizenship, recognizing infrastructure as a space where citizenship is practiced and upon which political identities are based. While emerging discussions surrounding infrastructural citizenship have largely focused on issues of access, this article proposes engaging with infrastructural labor as a way of extending and developing how infrastructural citizenship is understood and leveraged. I begin by bringing infrastructural citizenship into conversation with ongoing geographic discussions surrounding infrastructural labor, and grounding analysis within the particularities of waste geographies and South African community waste schemes. Attending to the labored dimensions of infrastructural citizenship within a state-led community-waste initiative in Cape Town, I outline how community facilitators perceived their labor contributions, and expectations of the state. On this basis, I propose that infrastructural labor merits further consideration within infrastructural citizenship's emergent framework.

Introduction

Citizenship rights and responsibilities surrounding infrastructural access and provision are invariably diverse, negotiated, and intertwined. Recognizing the implicit heterogeneity of infrastructural provision (Smith, 2021), Lemanski asserts that infrastructural development and service provision are important forms of state visibility and a basis for urban inhabitants' political subjectivity and claims-making:

> … the ways in which citizens secure initial and long-term access to infrastructure is a form of citizenship in practice, that is regularly re-negotiated in dialogue with technical (e.g. taps, toilets, wires) and social (e.g. neighbors, engineers, and planning officials) forms of infrastructure. At the same time, infrastructures of citizenship also manifest in the civic *identities* of urban dwellers, whereby the quality of infrastructure that is accessible for an individual, household or community represents a reflection and perpetuation of unequal citizenship status in the city. (Lemanski, 2019, p. 123)

An important contribution to urban geography, infrastructural citizenship speaks to the intricate relationship between performed and legal citizenships. Building on recent scholarly attention to labor within infrastructural geographies, this article contributes to emergent conceptualizations of infrastructural citizenship by focusing on labor underpinning infrastructural forms and services associated with citizenship rights. Paying attention to the positioning and political claims associated with infrastructural labor speaks to the interrelated nature of performed and legal understandings of citizenship. It also highlights the work and responsibilities that fulfill infrastructural rights associated with citizenship. I argue that contributing labor toward infrastructures associated with citizenship rights can inform and underpin unique positionalities, as well as expectations of rights and responsibilities, thereby emphasizing distinct labored manifestations of infrastructural citizenship. Here, labor-based understandings of infrastructural citizenship bring into focus the rights and responsibilities associated with performing and providing infrastructures on behalf of (or in place of) the state, along with the subjectivities and claims made by those contributing their labor.

By proposing a labored lens for infrastructural citizenship, I look to contribute toward scholarly discussions surrounding the work of collective urban life, rights, and responsibilities, and their relationships to infrastructural development and service provision. In short, analyzing the work of infrastructure through the lens of citizenship invites critical reflection around whom is responsible for contributing to the fulfillment of collective urban life through infrastructural service provision, and whether the contribution of labor toward infrastructures associated with citizenship rights informs new subjectivities, claims, and associated rights and responsibilities. Further, attending to the labored dimensions of infrastructural citizenship serves as an important framework for considering how individual livelihoods, rights, and responsibilities align to the promises and provision of infrastructures supporting collective urban life, particularly amidst exacerbating ongoing and widespread crises of social reproduction, uneven and infrastructural development, and precarity (e.g. Phillips & Petrova, 2021; Strauss, 2020).

This article draws upon research on state-led community-based waste initiatives, which was undertaken as part of a larger research project studying waste-based livelihoods in South African cities. I initially conducted a preliminary review of political documents from all spheres of government surrounding cooperative governance in waste management, where I identified community responsibility and active citizenry as recurrent discursive themes. I then located government programs, campaigns, and initiatives that emphasized these themes in the last decade through document analysis, yielding over 25 government initiatives, which were assessed to establish their expectations surrounding responsibility and work. From this review, I selected a primary initiative to study in two urban regions based on the initiatives' public profiles, longevity, and desired impact. Analysis of these initiatives is elaborated upon elsewhere, which considers complementary aspects of urban waste governance, labor, and livelihoods (Lawhon et al., 2021; Millington et al., 2022; Stokes & Lawhon, 2022). This article focuses on the particularities and expectations of community facilitators participating in the Green Zone partnership model run as part of Cape Town's landmark WasteWise campaign. I proceeded to conduct supplementary document analysis, site visits, and interviews with 45 individuals involved in different aspects of these initiatives over 2017/18, including approximately half of the community facilitators who participated

in the full duration of the Green Zones pilots (7 of 15). Interviews were then transcribed, and analysis was conducted using NVivo.

In what follows, I begin by making the case for a labored interpretation of infrastructural citizenship by bringing recent conceptualizations of infrastructural citizenship into conversation with parallel scholarly discussions surrounding infrastructural labor. Engaging with waste infrastructures in South Africa as a place of emergent theorization of infrastructural citizenship, I then consider how citizenship and community responsibility for waste work have been politically framed and promoted in South African cities, highlighting the specific expectations of government actors and community participants involved in the Green Zone model in Cape Town's WasteWise campaign. Through this empirical case, I illustrate a labored-perspective of infrastructural citizenship within the particularities of waste infrastructures in South Africa, where state-led community waste initiatives have been promoted and framed as a form of active citizenry and community responsibility within cooperative governance arrangements. Asking how such work is politically framed, and how workers view their labor and its relation to the state, I focus on the perspectives and experiences of the Green Zone community facilitators.

Several years following the Green Zone's end, facilitators emphasized the civic contribution of their work and community responsibility for waste. However, several facilitators also expressed expectations of the state to support their right to continue undertaking this work and establish a secure livelihood from it, leading to a call to be met in the middle. I conclude by reiterating the potential for incorporating labored perspectives within the ongoing scholarly engagement with infrastructural citizenship, particularly how performing certain forms of infrastructural labor can underpin and generate political subjectivities, thereby becoming a premise for claiming responsibilities and rights from the state.

Locating labor within infrastructural citizenship

Interpretations of citizenship are multiple, varied, and have transformed over time, of which a full review is beyond the scope of this article. A rich and varied body of scholarship has considered what citizenship is and why it matters, proposing different modes or types of citizenship – from entrepreneurial, to urban, to infrastructural, to affective, amongst many others (cf. Buire & Staeheli, 2017; Fortier, 2016; Mookherjee, 2005; Staeheli, 2013). While noting the prevalence of Western intellectual traditions within many contemporary interpretations of citizenship, Isin contends that expressions of citizenship can be found across many places and times, expressing "a right to being political, a right to constitute oneself as an agent to govern and be governed, deliberate with others, and enjoin determining the fate of the polity to which one belongs" (2002, p. 1). In other words, citizenship becomes a marker of whom is deemed in/out of a given community (or polis), and a site for determining a group's collective rights, obligations, expressions, and expectations. Furthermore, state-based or legal understandings of citizenship are not the only basis for belonging or claiming one's political presence or rights.

Scholars have written widely on how citizenship and infrastructures are related, embodied, and politicized (cf. Anand, 2017; Pilo' 2022; von Schnitzler, 2008). In recent decades, urban and political geographic scholars have emphasized how citizenship is

informed by everyday practices, relations, and associated subjectivities (e.g. Brownlow, 2011; Gibson-Graham, 2008; Holston, 2009). In response, an important and growing body of urban scholarship has attended to embodied (Sultana, 2020), ordinary (Staeheli et al., 2012), insurgent (Holston, 2008, 2009), and everyday citizenships (Anand, 2017), also equated to forms of *citadinité* by certain francophone scholars (Gervais-Lambony, 2001). These performative understandings of citizenship emphasize the simultaneously performed and subjective process of affiliation and collective claims-making, frequently illustrated through instances of protest, auto-construction, or tactical dealings that question, supersede, or evade state authority (Blokland et al., 2015; Buire & Staeheli, 2017; von Schnitzler, 2016). As everyday understandings of citizenship have highlighted practices beyond or on the peripheries of state-centered formulations of citizenship, the intersections of legal and performed forms of citizenship – and their relationship to infrastructural access and provision – have remained relatively understudied within urban geography until recently.

In recent years, Lemanski has proposed the notion of infrastructural citizenship as an entry point for considering how infrastructures and their associated services are related to understandings and practices of citizenship (2017, 2018, 2019, 2020, 2022). While not the first person to employ this term (Shelton, 2017), Lemanski's interpretation creates a conceptual lens for thinking through urban infrastructural processes, practices, and political subjectivities:

> … Focusing attention on the ways in which citizenship acts and practices are embodied in public infrastructure (and vice versa), in order to deepen understanding of the infrastructure–citizenship nexus in both theoretical and empirical terms. (2019, pp. 13)

Lemanski leverages infrastructural citizenship to highlight the dialectical relation between legal and performative citizenships in South Africa, where state promises of infrastructural services can inform residents' political subjectivities and responses. Initially drawing upon longitudinal research on infrastructural and housing access in Cape Town, Lemanski demonstrates how uneven and nuanced this relationship can be in practice (2018, 2020). Here, infrastructural citizenship recognizes the central role infrastructural services play in urban contexts and highlights the ways uneven access and exclusions are equated with a denial of citizenship or abandonment of the state.

More recently, Lemanski has illustrated how urban residents' efforts to adapt and gain access to public infrastructures in ways deemed uncivil or illegal reflect a disjuncture in normative expectations of citizens' rights within the democratic South African State (2020). Infrastructural citizenship has also been deployed to highlight how infrastructures (and their artifacts) become mediators in state governance practices that seek to produce and discipline deserving desirable citizens, but also may result in unexpected and unintended claims, negotiations, and contestations (Lemanski, 2022; Pilo', 2020). Infrastructural citizenship not only provides a lens for recognizing how differentiated promises and unequal conditions are applied or accessed; it also recalls the intersecting and subjective responses undertaken by citizens in response to their perceived rights (Hope, 2021; Wafer, 2020).

When considering moments of seizing and claiming infrastructural citizenship, scholars have attended to practices of auto-construction, connection, and other improvisational practices to gain or claim access to infrastructural resources and services when

state provision is inadequate or altogether absent (Cawood et al., 2022). This focus tends to be grounded in understandings of infrastructural heterogeneity and hybridity (e.g. Jaglin, 2008; Lawhon et al., 2018). While this perspective emphasizes the performed, practiced, and everyday nature of infrastructural form and functioning, emerging conceptualizations of infrastructural citizenship have largely centered around citizens' right to access services and infrastructures – either claiming or enacting this right in the absence of state provision.

Interrogating responsibility is equally crucial when considering political affiliation, be that legal and/or performed. When considering infrastructural citizenship, assumptions surrounding provision often fall to the state without reflecting on the wider governance arrangements, relations, capacities, and practices that inform and underpin their fulfillment. However, responsibility for the actual performance of infrastructural development, maintenance, and transformation is frequently redistributed to different actors. Paying closer attention to how responsibility for infrastructural provision is distributed, valued, governed, and enacted can contribute generative insights for conceptualizing infrastructural citizenship.

As discussions surrounding infrastructural citizenship have continued to evolve, so too has scholarly attention to infrastructural labor, which has done much to theorize and highlight the embodied, subjective, and political dynamics of infrastructural labor over the last decade (Baptista, 2018; Barnes, 2017; De Coss-Corzo, 2021; Gidwani, 2015; Silver, 2014). Starting from the recognition that infrastructures are created and (re)made through various relations and forms of agency, labor is increasingly recognized as a crucial element of infrastructural creation and functioning (Addie, 2021; Horton & Penny, 2023; Stokes & De Coss-Corzo, 2023). There have also been complementary discussions attending to the intersecting and differentiated subjective, material, political and embodied experiences which surround infrastructural labor, particularly in relation to social reproduction (cf. Hall, 2020; Truelove & Ruszczyk, 2022). This body of scholarship emphasizes how infrastructural labor is governed and politicized, while also highlighting the contradiction that such work often underpins infrastructures supporting collective life while also enrolling devalued, oppressed, and unfree labor (cf. Addie, 2021; Mullings, 2021; Power et al., 2022). Extending the framework of infrastructural citizenship to meaningfully engage with the growing scholarly attention to infrastructural labor could contribute significantly to how infrastructural citizenship is theorized and applied as a framework. Who is expected to undertake infrastructural labor? Equally, what kinds of work are recognized as infrastructural by state authorities, the urban inhabitants, and workers themselves?

While arguing for greater attention to the labored dimensions of infrastructural citizenship, it is also important to recognize the limitations of this proposal. Labor-based interpretations of infrastructural citizenship should not be presumed or considered relevant in every circumstance. Speaking to the growing discussion surrounding infrastructure, social life, and citizenship, Lesutis notes that the "relationship between infrastructures and citizenry cannot be taken as a given", particularly in postcolonial contexts where significant populations have historically been (and can still be) excluded from the polis (2022, p. 303). Turning away from citizenship, Lesutis suggests that subject positions associated with (and made through) exclusions from infrastructural projects may

not be equated to citizenship – even when such populations are enrolled into contributing labor toward the creation and maintenance of such infrastructures.

I find Lesutis' argument very compelling, yet still believe more can be done to assess the perspectives and claims of those who perform labor that contributes to the fulfillment of state infrastructural responsibilities. While the notion of citizenship may not be present or relevant in all circumstances, there are indeed numerous instances where state imperatives and political subjectivities are bound up in questions of citizenship, which merit grounded interrogation and theorization. By making the case for locating infrastructural labor within theorizations of infrastructural citizenship, I am not suggesting that performing infrastructural labor always informs citizen subjectivities. Instead, I propose that broadening infrastructural citizenship's intersecting political and performed framework to attend to the unique dynamics and subjectivities surrounding infrastructural labor can offer generative questions around the rights *and* responsibilities surrounding infrastructural provision.

Grounding through waste work

Waste work offers a particularly helpful entry point for considering the implications of a labored dimensions of infrastructural citizenship. Waste infrastructures are widely recognized as labor-intensive, with diverse forms of enrolled labor that transcend and complicate formal/informal binaries, governance arrangements, and modes of valuation. Already, waste scholars have engaged with the political, relational, and performative dimensions of diverse forms of labor associated with waste infrastructures in diverse contexts, demonstrating how the work of waste management is highly illustrative of (and entangled within) competing political interests, value assumptions, and material flows (e.g. Gregson et al., 2016; Herod et al., 2014; Millington & Lawhon, 2019). For instance, recognizing waste management as a "infra-economy", Gidwani and colleagues have illustrated how particular forms of waste work are disregarded by state actors and the public, yet central to urban space and collective life (2015, p. 576; Gidwani & Maringanti, 2016). Going further, Gidwani argues that such work is frequently held in a tenuous space, neither included nor excluded nor accurately defined by formal/informal dualisms (2015, p. 581). Consequently, waste workers perform labor at once central to collective urban life yet also consistently rendered precarious and devalued through capitalist and state logics.

Paying attention to waste's heterogeneous infrastructural labor configurations raises questions around about what kinds of waste labor are recognized and valued by state actors, and who is responsible for performing this work on behalf (or in the place) of the state. Scholars studying waste labor have contributed significantly to discussions surrounding diverse urban economies, livelihood strategies, and political economies, making thoughtful links between waste workers' contributions toward infrastructure and agency in negotiating their positions with the state. For instance, invoking the notion of wasted citizenship, Samson's analysis of waste reclaimers' self-definitions and activities in South Africa suggested that reframing such workers as "prototypical 'neoliberal citizens'" denied legibility and discriminated against by state actors (2009, p. 4). Resisting tired narratives of dispossession, Samson instead advocated focusing on the ways in which reclaimers contest and negotiate state disregard and exclusion (2009).

Similarly, Fredericks' scholarship on garbage citizenship has emphasized the relational work of waste workers in Dakar, and emphasized how public perception has changed through the discursive reframing of waste work from dirty to pious, with workers recognition as undertaking the state's work (2014, 2018). Fredericks argues that contestations surrounding infrastructure act "as a lens into questions of urban citizenship" (2018, p. 3), and acknowledges the multiple ways participatory citizenship is enforced by state actors to devolve responsibility for waste labor, thereby reinforcing inequalities and infrastructural splintering (2018).

More recently, Samson and colleagues have outlined how government programs seek to "integrate" waste reclaimers, cooperatives and, small, medium, and micro-enterprises (SMMEs) into municipal services in Johannesburg. This research has highlighted state actors' refusal of existing informal waste workers, which replicates colonial forms of commodification exclusion, enclosure, and dispossession (Samson, 2019). In addition to noting how such schemes tended to reinscribe infrastructural differentiation between low- and high-income neighborhoods, Samson also highlighted how reclaimers did not register for integration schemes for various reasons – ranging from mistrust, lack of awareness, or a desire to continue working independently (2019, p. 9). This study further emphasized how reclaimers reportedly wanted state actors to stop imposing paternalistic structures through integration, and recognize reclaimers' creation and maintenance of a de-facto recycling system:

> … even making reclaimers equal stakeholders in waste picker integration and S@S [Separation at Source] is insufficient. As reclaimer Louis Mahlangu explained to industry representatives and local and national government officials at a workshop held on 6 June 2017, "it is the city who is integrating itself on our existing structures, because we've been doing it for many years, so it is them who is integrating into our existing system". (2019, p. 12)

As reclaimers organized and marched against municipal contracts, they emphasized an awareness of their labor as a subsidized collection service and demanded payment for services and a share of waste surpluses (p. 13). Samson thoughtfully interprets this position as a recognition of ones' role within capitalist economies and value chains, however this position might also point to a political positioning where reclaimers recognize their labour as supporting and contributing to state responsibilities for services, while also contesting the conditions imposed upon them by the state.

In addition to emphasizing waste labor's diverse forms and infrastructural qualities, waste scholars have done much to theorize the politicized and performed nature of waste work across diverse contexts. Notions of wasted citizenship and garbage citizenship (Fredericks, 2018, 2014; Samson, 2009) have emphasized how subjectivities and agency are recast through both the performance of waste work and in response to infrastructural transformations and dynamic power relations. These contributions compliment theorizations of infrastructural citizenship which, in turn, emphasizes the importance of legal and everyday citizenship expectations surrounding infrastructural access and provision. Analyzing such dynamics must be prefaced with situated understandings of citizenship rights and responsibilities surrounding waste infrastructures and services. The following section introduces waste management and its associated labor in South African cities, before illustrating how a labored perspective of infrastructural citizenship could be applied to a state-led community waste initiative in Cape Town.

Theorizing with/from waste work in South Africa

South African cities have comprehensive waste management systems overseen by the state; however service quality varies, reflecting broader inequalities and state capacity limitations. This unevenness is viewed as a substantial challenge inhibiting the widespread expansion and improvement of existing services and infrastructures. Despite the present and public expectation of state service provision, recycling has largely occurred through the labor of subsistence-based waste reclaimers (cf. Makina, 2020; Samson, 2015; Schenck et al., 2019; Timm, 2015). Reviews of the South African wastescape and solid household waste management expand upon the confluence of dynamics and interests that shape this infrastructural system (Ernstson et al., 2021; Godfrey & Oelofse, 2017). Further, municipal responsibility for household waste management service provision is situated within several wider governance imperatives that encourage communities and citizens to become more active with waste, and cleaning and greening more broadly.

Scholars have highlighted the dynamic nature of citizenship in South Africa, at once shaped by apartheid's legacies and democratic promises of equality (Gouws, 2017; Hammett, 2008; Nyawasha, 2016; Robinson, 1997; Smith, 2004). Discourses of active citizenry and community participation have been privileged by state and non-state actors as a means of encouraging local participation in services (cf. McEwan, 2005; Miraftab, 2004a, 2004b; Staeheli, 2008), while community membership is leveraged to assert claims for nationally enshrined rights and opportunities (Millstein & Jordhus-Lier, 2012; Staeheli, 2008). Further, scholars have attended to the ways infrastructural processes (von Schnitzler, 2008; Wafer, 2012) and labor (Barchiesi, 2007, 2008) becomes enfolded into preconditions of citizenship.

State-led community waste initiatives and campaigns have become a regular feature of urban waste management in South African cities. While such schemes may differ in their approach and focus, they share a common objective of encouraging greater community involvement in different aspects of waste management, from separating recyclables at source to cleaning public spaces to starting local projects and enterprises. Despite being an integral aspect of solid waste management infrastructures, community and participatory waste initiatives remain a relatively understudied dimension of South Africa's urban waste infrastructures (as an exception, see Kubanza, 2020; Kubanza et al., 2021). However, these efforts are grounded in broader cooperative government principles, where South Africa's state actors are expected to work together across all spheres of government *and* in partnership with all parts of society. Extending cooperative governance principles to promote society-wide participation in waste management, state actors suggest that waste management cannot function without the participation of public, private, and civil society actors. For instance, the 2011 National Waste Management Strategy indicated that municipalities must establish "partnerships and participatory community projects," so that, "the greater the extent of responsible self-regulation the less government needs to intervene and regulate. This frees up scarce government resources for more constructive initiatives" (Department of Environmental Affairs, 2011, p. 19).

Alongside expanding definitions of cooperative governance, the South African state also upholds active citizenry as a crucial element of democratic functioning. In

promoting active citizenry, for instance, the National Development Plan 2030 infers that post-apartheid efforts to support socio-economic development have reduced citizens' agency in improving collective life and livelihoods. State policy has sought to encourage greater citizen responsibility for services and collective livelihoods more generally, stating that this is necessary for flourishing democracy and development (National Planning Commission, 2012, p. 27).

This framing of citizen responsibility has been used to justify spending on programs and campaigns promoting public support and participation in waste management. Arguing that a distance has emerged between citizens and the state which has led to conflict and frustration instead of cooperation, state policies suggest that citizens must take care of themselves, hold their representatives to account, and look for avenues to improve individual and collective livelihoods. Further, it is important to remember that such schemes are not an isolated dimension of urban infrastructural governance and function but exist at the intersection of "two structural factors that overdetermine everyday (political) life for urban majorities in African cities": the absence of decent and stable employment opportunities *and* household participation in various participatory democracy and service delivery processes (Pieterse, 2015, p. 318).

While understanding this political context is necessary for a grounded understanding of community waste labor in South African cities, this article is not preoccupied analyzing state logics that frame precarious, so-called informal, subsistence-based, or voluntary work to subsidize services as community responsibility or active citizenry. Other scholars have studied these dynamics with great care, outlining their relation to broader political and economic logics (cf. Millington et al., 2022; Miraftab, 2004b; Samson, 2019). In this article, I am interested in how people undertaking such work perceive their efforts and understand them in relation to state infrastructural obligations. By focusing on these dimensions, I look to highlight how producing, maintaining and delivering infrastructure services and processes are a dynamic political and subjective process that can raise questions about the rights of infrastructural workers, particularly when they are performing labor that contributes toward the state's infrastructural obligations. The next section seeks to illustrate this approach by focusing on a scheme that enrolled community labor into a landmark municipal waste campaign in Cape Town.

Green Zones in Cape Town

The City of Cape Town ran its landmark WasteWise campaign from the early 2000s with the objective of raising public awareness around waste reduction and encouraging communities to take greater responsibility for their environments. Over the years, the campaign devised various approaches to bring schools, businesses, and communities into different strategies and partnership arrangements around waste reduction, recycling, and pro-environmental behaviors more generally (City of Cape Town, 2013). In its last three-year cycle (2010–2013), the city and WasteWise's contracted coordination consortium launched a Green Zone scheme which sought to cultivate a partnership approach through intensive interventions in three sub-council areas in lower income, predominantly ex-township areas of the Cape Flats that had issues with illegal dumping and service provision. The city hoped to learn from these three Green Zones before expanding the approach more widely (Armien-Ally, 2014, p. 21).

Approximately 20 community facilitators were recruited across the three Green Zones, of which 15 remained active for the duration of the project. All but two of the facilitators were women, most of whom were mothers. It is important to note that none of the recruited facilitators had previously worked in waste, but most have demonstrated prior experience supporting their communities. Selected community facilitators received training and were supported to implement and run community projects to address waste problems in their communities, including establishing local partnerships and running local volunteer circles. In exchange, facilitators received a monthly stipend of 1200 Rand for the duration of the program (around $100 at the time of research). Although the stipend was not considered sufficient for supporting an entire family, it was a consistent source of income that contributed to broader household livelihood strategies. It was hoped that community facilitators would create self-sustaining community waste projects and enterprises that could contribute toward their livelihoods beyond the pilot's fixed three-year time frame.

During training, most facilitators identified dumping and littering as primary concerns for their communities. Armed with this knowledge, and the support and legitimacy afforded by WasteWise, facilitators launched a variety of projects, including community gardens and composting schemes, recycling businesses, waste-to-craft workshops, and developing household tips for minimizing waste and environmentally friendly cleaning. Often drawing on existing interests, facilitators' approaches to improving local circumstances differed, with some participants changing projects several times over the course of the program.

Recognizing the community facilitators' work as infrastructural labor (Stokes & Lawhon, 2022), the following sections ask how facilitators' expectations and experiences of community waste work evolved over the course of the project, and how this informed their subjectivities and expectations of the state.

Embracing responsibility and reframing waste work

When reflecting upon their motivations for initially applying to the Green Zones, most facilitators reported not working at the time and saw the scheme as an opportunity to potentially gain an income, work experience, or a pathway into subsequent employment. While the facilitator roles were not publicly advertised as paid, several community facilitators suggested that there had been informal suggestions that the roles might be compensated or lead to other work opportunities. Most facilitators reported being indifferent or disgusted by waste prior to commencing, and recalled how intensive week-long training at the beginning of the program changed their perspectives. During training, facilitators were encouraged to ask why waste issues existed in their communities and consider options they could take themselves to address these issues (Coordination and training consortium member, 1 March 2017). In turn, facilitators stated that training had been an important turning point that broadened how they saw their work, from a personal economic activity to fulfilling the civic and environmental objectives of Waste-Wise in their communities.

We can consider this change in perspective as a crucial moment for labored notions of infrastructural citizenship. In keeping with the objective of encouraging community

ownership for waste and greening issues, the training was open-ended, presenting different options for facilitators instead of a prescriptive approach:

> We didn't put tabs on them because we felt that we must give them leeway to go where they wanted to go. Because that's the way people learn. If you become too prescriptive, people tend to draw back, because you don't give them the sort of authority to run their own thing. And for us [municipal officials, coordinators, and trainers], it was also important for them to understand that there's no way a hand-out mentality. Everything that they work, they must do it by themselves. So whatever resources that they require, they must get it themselves. We will sort of put things in place, right? But they must run it. It's their project. It wasn't ours, or even WasteWise's, or even the city's, right? (Coordination and training consortium member, 1 March 2017)

Framing community facilitators' roles in relation to state discourses of community responsibility, active citizenry, and cooperative governance, informed how facilitators perceived their work – not only as a personal livelihood opportunity, but also as a contribution or service toward one's community and the municipality itself.

In addition to questioning how facilitators viewed their work, a labored lens of infrastructural citizenship can draw attention to what kinds of labor are recognized as contributing toward public infrastructures and service obligations. Recalling Fredericks' writing on Dakar, waste work is more than material, but also relational and performative (Diouf & Fredericks, 2014; Fredericks, 2014, 2018). Similarly, facilitators recognized both the material and relational contributions of their work during the Green Zones.

Materially, facilitators' labor underpinned a variety of projects and activities, including collecting recyclables, running workshops, and disseminating information door-to-door. Independently, along with the voluntary efforts of neighbors' and community partners, facilitators established schemes and processes that redirected waste flows and contributed toward community service and cleaning, which fulfilled municipal officials' desires to empower communities to be active in raising awareness of good waste management practices.

In addition to highlighting the material work of establishing and maintaining discrete community-based projects to address local waste issues, facilitators also recognized how their efforts constituted a form of relational labor. For such efforts to be successful, facilitators needed to work to elicit buy-in and participation from residents and social institutions such as churches, schools, and community centers. Being largely perceived as *from* the community, facilitators felt their positions equipped them to understand local dynamics surrounding waste. As a result, they felt they had been empowered to propose and implement approaches that would be accepted by community members.

Gender and respectability dynamics also appeared to inform facilitators' perceptions of their relational labor contributions. Several facilitators suggested that being mothers and religious helped them to gain community respect and buy-in:

> So, when I spoke to a neighbor or someone they will think, "Yes, that is a respectful lady, so I will do it for her." It is how you present yourself in the community. If it's a person using drugs or something, the people won't support you like they will support me in these communities. We are the strong women in the community. It's important that you must hold your personal … the person you are. She's a Christian lady all these years. I'm a Christian lady. I mean we do, in the community, talk proper. We respect the people in the community,

you know? … It's the person who works in the community, how the person is to get support in the community. (Community facilitator, 24 June 2017)

Having the reputation of being respectable community members helped to gain legitimacy across diverse actors, groups, and governance structures, from ward councilors and municipal departments to local gangsters and unelected community authorities. In turn, most facilitators recognized their local positions and knowledge as important factors that allowed them to promote positive waste behaviors and build support around fledging community waste projects. Relational labor and positional legitimacy might not typically fit within imagined forms of infrastructural labor; however, they were considered as a necessary precursor for the material efforts of creating and maintaining community waste projects and activities.

Still, facilitators did encounter challenges. When bringing together different actors, competing interests and power struggles had to be negotiated alongside the continued struggle of maintaining participants' interest. For instance, many facilitators worked in partnership with local schools to gain space for sorting and storing recyclables. These agreements varied considerably but were largely dependent on facilitators' relationships with school staff. Sometimes, schools expected a proportion of profits from the scheme or restricted facilitators' access to the grounds. While WasteWise trainers and campaign coordinators supported facilitators when issues arose, it remained the responsibility of the community facilitators to establish and maintain the necessary partnerships.

This perspective reflects existing literature emphasizing the legacies and politics of respectability within Cape Town, particularly around the right to access specific labor opportunities in service provision (Chipkin, 2003; Ross, 2015; Western, 1981). Considering these dynamics from the perspective of infrastructural citizenship recalls the diverse forms of material *and* relational labor required to encourage residents in their community to participate in and adhere to government schemes – particularly when they are intended to contribute toward the fulfillment of publicly expected infrastructural rights.

Responsibility for sustainable livelihoods

Having reflected upon the ways community facilitators framed their labor and recognized their contributions, this section reflects on facilitators' expectations of the state. For many, the relationship between labor and livelihoods became an important consideration when reflecting upon their expectations of the Green Zones, and the state more generally.

The Green Zones always had a fixed timeframe, yet municipal officials and campaign coordinators hoped that initiatives started by Green Zone facilitators would become self-sustaining and continue beyond the three-year cycle. While one facilitator did gain employment with a partner organization, none of the community facilitators reported turning waste and greening projects into sustainable livelihood strategies. Several found other employment in other sectors toward the end of, or in the years following, the Green Zones. Others contributed to their livelihoods through occasional entrepreneurial work, participated in subsequent work training schemes, or continued voluntary efforts in their communities. For instance, one facilitator continued to volunteer in a community garden while another taught people to sew and mend disposed clothing

using a sewing machine obtained for Green Zone craft workshops. While most facilitators reported continuing to incorporate lessons from WasteWise in their current work and activities (Community facilitator, 21 June 2017), the goal of having facilitators create economically sustainable initiatives within their communities appeared to have fallen short.

Despite receiving a stipend and other forms of support from municipal officials and the campaign coordinators, facilitators were ultimately considered responsible for ensuring their work and efforts were transformed into a livelihood strategy. However, several facilitators and other people associated with the Green Zones suggested that this aspiration had not necessarily reflected the time and efforts required to build and maintain an entrepreneurial project, let alone establish a secure livelihood from it. According to one person member in the coordinating consortium, much of the first year had been spent on developing appropriate skills and mindsets, leaving little time to create a sustainable livelihood from a project or business within the three-year pilot duration, particularly if facilitators had setbacks or changed their initial project (Coordination and training consortium member, 1 March 2017). Recognizing the time and effort required to transform mindsets and impart skills and information that could support the development of community waste projects recalls the dynamic and uncertain work facilitators were being asked to undertake within a short timeframe.

Along with a limited timeframe, some facilitators mentioned support from the municipality and consortium partners as another challenge. In particular, there were questions around whether different types of support could have been made available, and possibly extended for a longer duration. For instance, one facilitator had started a recycling business in her house but struggled to expand due to a lack of space. While encouraged to partner with a school, she was reluctant as the school expected 50 percent of the profits in exchange. Despite receiving encouragement, the facilitator expressed frustration with the limited nature of support and felt the municipality could have been more proactive in supporting them to expand their operations to a sustainable level. Given the need to prepare, bale, and accumulate recyclables before selling them to secondary markets, access to land would have allowed her to collect larger volumes of recyclables and increase her potential to create a livelihood from recycling. Considering the need for space in infrastructural terms, this limitation emphasizes how space, resources, and relations are essential for determining what kinds of infrastructural labor were possible. In turn, these factors impacted what infrastructural flows and services facilitators could develop and maintain in a consistent and sustainable manner.

Municipal officials and consortium partners did provide support to facilitators throughout the duration of the Green Zones, and toward the end in particular. Support took the form of training, access to government departments to acquire space for operations, and business contacts for potential partnerships (Municipal Official, 9 March 2017). Whereas government officials claimed support was largely not taken up by facilitators, those who did receive additional support stated it was a prolonged and uncertain process. For instance, one facilitator transformed a dumpsite into a park and on-site recycling scheme. While the consortium coordinators helped her to gain a memorandum of understanding with the municipality for a small shelter, the facilitator said that the site was suddenly revoked after one resident complaint, without warning or

recourse for appeal. She has continued to voluntarily clean and maintain the park, despite losing the space for her recycling scheme.

Three years following the Green Zone's end, interviewed community facilitators were divided in their reflections. Most facilitators suggested they would have continued the projects and activities they had initiated during the Green Zones, had they been able to establish a secure livelihood from them. Facilitators who had found secure employment in other areas during, or immediately following, the Green Zones tended to suggest that communities needed to take on a higher degree of responsibility for keeping their neighborhood clean and free of dumping. Several indicated that communities too often blamed the municipality for insufficient services without taking ownership of their waste problems. Comparing her neighborhood to a wealthier neighboring area, one facilitator remained convinced that illegal dumping came down to residents not taking responsibility for their environment:

> Sometimes we walk in an area like Bishopscourt, and we say, "Whoa, these peoples' places are clean – look at ours." But at the end of the day, I realized that it's our people that needs to clean up their area, not the city. They are like, "the council must clean up." No, the people there in Bishopscourt are a better community. They do their bit. They go recycle they separate their waste. They clean up. They don't just throw their waste in the road. You know dumping? They don't have dumping sites! And that was when I said, "why can't we change our mind-set?" (Community facilitator, 24 June 2017)

While most facilitators continued to uphold the view that communities had a responsibility for their waste and cleanliness, not everyone felt that project shortcomings and responsibility lay solely with the community. Other facilitators were dissatisfied with the municipality's support and involvement during and following the Green Zones, and reflected critically on the municipality's role and responsibilities toward facilitators themselves:

> They started with us and then it's almost like they dump us. I mean, they started with us. They didn't know what's … It's not easy to go into the community and speak to the community, and to get out the community … you see the response of the community. Why [did] the city use us? (Community facilitator, 21 June 2017)

This position was not universally held, but did point to a particular expectation around the state to support the livelihoods of people whose work was supporting the fulfillment of public waste and greening responsibilities. Being aware of, and subjectively invested in, the civic contribution of their work, some facilitators questioned whether more could have been done to support their transition to establishing a secure livelihood – such as extending stipends until projects were financially self-sustaining. Having fulfilled Waste-Wise's objectives and responded the call for community responsibility, facilitators accepted responsibility for addressing waste problems in their communities but looked to the state to value their work instigating community waste projects and services and accept a degree of responsibility for their livelihoods. Without questioning the civic framing of their work, facilitators lamented the state's failure to meet them in the middle.

While these sentiments were not publicly expressed to coordinators or government officials, facilitator perspectives emphasized a sense of unfulfilled promises. Although community waste projects might be considered a collective responsibility, facilitators recognized their time, efforts, and contributions as being more intensive and requiring

additional personal commitments, obligations, and risks. As the local champions for the WasteWise campaign, Green Zone facilitators had performed the material labor of creating and maintaining projects as well as relational labor to garner resident buy-in and participation. Initial training instilled a sense of civic purpose and responsibility amongst facilitators, but it also avoided broader questions of infrastructural rights and redistributed responsibility.

Thinking about this position and reaction in terms of infrastructural citizenship, the desire for additional support to establish a secure livelihood raised questions about the nature of community waste work, and what facilitators could expect from the municipality for contributing toward its waste, cleaning, and greening imperatives. In other words, what are the rights of those whose work contributes toward the state's infrastructural responsibilities? Differing perspectives amongst Green Zones facilitators emphasize how there is no singular answer to this question. Instead, focusing on the labored dimensions of infrastructural citizenship highlights the ways infrastructural rights and responsibilities are not only contested, negotiated, and enacted around matters of access – they are also central to infrastructures' labored conditions of provision.

Even when programs end, questions and contestations surrounding rights and responsibilities for infrastructural labor do not disappear; they are translated into new schemes and dynamics. Following the Green Zones' end, municipal officials reported a change in political priorities. WasteWise's approach would change to focus on more bounded and quantifiable interventions, such as door-knocking, and providing ad hoc support to community waste initiatives that had already demonstrated a degree of commitment and success (Program Manager, 27 March 2017). By shifting toward more quantifiable activities and distributing support to communities who had already demonstrated existing capability to establish community waste and greening activity, communities would need to instigate and build their own projects before being eligible for state support. Despite this change in approach, facilitators also noted that recruitment for other community-based schemes had taken place following the Green Zones. One facilitator mentioned her daughter had recently applied to an environmental custodian scheme remarkably similar to the Green Zone community facilitator roles (Community facilitator, 21 June 2017). While understanding the government's focus on youth unemployment, she felt that the knowledge and experience facilitators had cultivated over the Green Zones was being ignored and lost.

While state-led community waste initiatives continue to be promoted within waste infrastructural and service delivery assemblages, promises of a secure livelihood remain uncertain. Assessing the dynamics of such schemes through a labored lens of infrastructural citizenship can offer a productive framework for assessing how the work of infrastructure informs and underpin citizenship subjectivities, claims, and rights.

Conclusion

Green Zone community facilitators adopted state framings of their work as fulfilling community responsibility and active citizenry, recognizing the contribution of their material labor of creating waste and greening projects and the relational labor of mobilizing community participation and buy-in. However, this positioning contributed to new expectations about the state's responsibilities toward them. Arguing that they had

fulfilled the city's call for participation, several facilitators suggested that the state could have done more to help them establish a secure livelihood through community waste work while minimizing risks associated with creating and growing a project or enterprise. Attuned to their labor being framed as a civic contribution, they accepted state framing of greater community responsibility but expected the state to meet them in the middle.

Importantly here, facilitators asserted this expectation not as residents or service users but based on their labor contributions. Considering this subject position and claim through the lens of infrastructural citizenship (Lemanski, 2018, 2019, 2020), Green Zones can be viewed as an instance where rights and responsibilities were being reformulated, negotiated, and contested around the work of infrastructural labor, rather than access. Looking ahead, attending to the labored dimensions of infrastructural citizenship can also offer a generative vantage point for considering distributed responsibility and rights for infrastructural access and provision, as well as urban splintering, autonomy, and quality of life (Bobbins et al., 2023; Cirolia et al., 2021; Lemanski, 2021).

This article made the case for a labored understanding of infrastructural citizenship and demonstrated how this lens can be applied and grounded through a community waste initiative in Cape Town. Through this example, I have considered how rights and responsibilities surrounding infrastructural labor are framed, perceived, and enacted, particularly where state-centered infrastructural provision intersects with diverse, post-networked, heterogeneous infrastructural labor configurations.

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No potential conflict of interest was reported by the author(s).

Research ethics and consent

This paper draws on interviews conducted for doctoral research, as part of a wider research project. All interviewees gave their informed consent prior to participating and were anonymized in the article. Ethical clearance for research was obtained by the University of Manchester (ref/ 301116).

ORCID

Kathleen Stokes http://orcid.org/0000-0002-8643-3258

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