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“Artful Sustainability” Inquiry into Urban Waste and Public Space Practices: a Case Study of Riverside View Mega City, Johannesburg



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Submitted in partial fulfilment for the Master of Urban Studies to the School of Architecture and Planning in the Faculty of Engineering and Built Environment, University of the Witwatersrand, Johannesburg

September 2024

Supervisor: Professor Sarah Charlton

Declaration

I declare that this research report is my own and has not been submitted before for any degree or examination at any other university. It is submitted for a Master of Urban studies degree to the Faculty of Engineering and Built Environment, University of the Witwatersrand, Johannesburg.

Trevor Mantshoane signed at University of the Witwatersrand, Johannesburg on 11 September 2024



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Abstract

The UN-Habitat (2021a, p. 29) has been spearheading efforts at ensuring that "placemaking institutionalizes the role of art and culture to achieve a lasting sense of place for [communities]" as per the SDG 11 agenda. Place-making foregrounds the central role of communities in ensuring quality and liveable public spaces often through arts-led interventions.

To date, little research exists on how this global place-making agenda is faring at the neighbourhood level. Even less studied are the arts and cultural (ecosystem) services of public space and the impact of waste on people's ability to benefit from these services. Against the global place-making agenda, this research artistically interrogates the eco-cultural dimensions of sustainability issues of waste and public spaces. It does this through a case study of Riverside View Mega City, Johannesburg (South Africa)

This qualitative research study uses a case study strategy and draws on a range of practices broadly associated with the arts-based and practice-based methods. The study utilises a set of methodological tools like drawings, written and photo diaries to gain a window into the resident participants' embodied experiences of waste and public space.

In all, the research finds that waste malpractices have a disruptive impact on the residents' ability to benefit from the eco-cultural services of public spaces in Riverside View Mega City. Consequently, public spaces are generally perceived and experienced negatively, although this is not uniform across all sections of the settlement. Moreover, efforts at institutionalising the arts and culture through place-making interventions remain ambiguous with little apparent relevance to the everyday sustainability issue of waste and public spaces.

Keywords: Public space; Waste; Art; Culture; Artful sustainability

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Abbreviations

CoJ:	City of Johannesburg
CAPS:	Centre on African Public Space
DHS:	Department of Human Settlement
DPWI:	Department of Public Works and Infrastructure
DCGTA:	Department of Cooperative Governance and Traditional Affairs
DEFF:	Department of Environment, Forestry & Fisheries
EPWP:	Expanded Public Works Programme
GIZ:	Deutsche Gesellschaft für Internationale Zusammenarbeit
IUDF:	Integrated Urban Development Framework
JCPZ:	Joburg City Parks and Zoo
JDA:	Johannesburg Development Agency
MEA:	Millennium Ecosystem Assessment
SACN:	South African Cities Network
SANBI:	South African National Biodiversity Institute
SDGs:	Sustainable Development Goals ,
UGI:	Urban Green Infrastructure
UGLG:	United Cities and Local Governments

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1. Introduction to the study

1.1. Introduction

There is growing scholarly and policy interest in integrating the arts and culture with the global urban sustainability agenda towards sustainable cities and communities (i.e. SDG 11). This happens amidst increasing recognition that culture, as values and a way of life, mediates the attainment of most of the Sustainable Development Goals (SDGs) (Dessein *et al.*, 2015; Asikainen *et al.*, 2017; Zheng *et al.*, 2021). Academically, artistic research methods are increasingly considered an alternative to the dominant text and number-based mode of engaging complex sustainability issues (Stucker and Bozuwa, 2012; Duxbury, 2019; Kagan, 2019; Bentz, 2020).

At the global policy level, the United Cities and Local Governments (UGLG) (2008, 2015) has been working with some 300 cities to institutionalise the arts and culture towards urban sustainability. Sections 4 and 7 of the nine "commitments" of the 2015-adopted *Agenda 21*, for instance, call on cities to embrace the arts and culture towards sustainable urban planning and public space management (UCLG, 2015). As the chief custodian agency for SDG 11, the UN-Habitat (2021a, p. 29) has also been at pains to ensure that "placemaking institutionalizes the role of art and culture to achieve a lasting sense of place for [communities]".

The primary aim of place-making as a planning strategy towards SDG 11 is to enable the co-creation, activation and improvement of public spaces often by incorporating the arts (Courage *et al.*, 2021). Mainly through its Global Public Space Programme, the UN-Habitat has been actively spearheading various strategic and tactical place-making interventions like urban gardening, painting and cultural activities to rejuvenate public spaces globally(UN-Habitat, 2021a).

Urban public spaces are now widely recognised for performing a range of aesthetic, spiritual, educational, recreational, sense of place and artistic inspiration functions called cultural (ecosystem) (dis)services (ES) (Potschin *et al.*, 2016; Gottwald, Albert and Fagerholm, 2022). To date, however, global place-making studies have largely neglected the cultural (ecosystems) services provided by public spaces. Neither has it brought art and culture closer to everyday urban sustainability issues of waste and public space practice.

Using artistic methods, this research interrogates the everyday (arts) and cultural experiences of waste and public spaces through a case study of Riverside View Mega City (hereon, Riverside), in Johannesburg, South Africa. Explicitly linking the global place-making agenda to the local cultural (ecosystem) services of public spaces identified in the Millennium Ecosystem Assessment (MEA) report (2005), this research explores the social-spatial implications of waste (mal)practices on public spaces.

I set the cultural services of Riverside's public spaces against the potentially disruptive bio-cultural "disservices" of waste in the area (Brown *et al.*, 2020, p. 1). It is in this interpenetrating biological (environmental) and cultural sense—hence "bio-cultural"—that I speak of the eco-cultural dimensions of sustainability issues of waste and public space practices.

1.2. Background

The UN-Habitat's (2021a, p. 29) efforts at institutionalising the art and culture through place-making towards SDG 11 implementation demands critical scholarly engagement. For one thing, it requires place-making to embrace the cross-cutting nature of waste and public spaces. These issues are set out in SDG targets 11.6 and 11.7, respectively. These targets call on cities to "reduce the adverse per capita environmental impact of cities… by paying special attention to… waste management and providing universal access to

safe, inclusive and accessible, green and public spaces" by 2030 (Gordon, Davila and Riedy, 2022, p. 810).

From a cultural (ecosystem) services standpoint, SDG 11.6 and 11.7 require considering how the bio-cultural disservices of waste (mal)practices impact the aesthetic, spiritual, educational, recreational, sense of place and inspirational value(s) of public spaces. The MEA (2005, p. 40) defines cultural services as "the nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences". These eco-cultural services of public spaces remain less explored in the place-making literature.

Quality public spaces featuring trees, water bodies and community gardens have been shown to offer valued cultural services like enhancing people's sense of place and belonging (Di Masso, Dixon and Hernández, 2017; Dai *et al.*, 2022; Erfani, 2022). This is the positive perception of public spaces characteristic of the dominant UN-Habitat place-making discourse. The social practice place-making (SPPM) theorist, Cara Courage (2015, 2017, 2021) has been critical of this dominant fixed notion of public space as non-contextual and generalist.

Less explored are the social-spatial implications of waste (mal)practices and how these support or disrupt communities' cultural services like sense of place. Since place-making is a process or "always in the process of "becoming"" (Singh, Niglio and Rana, 2023, p. 14), then this allows for the potentially place-disruptive qualities of waste.

This conception of place allows for the possibility that a community's cultural services like the aesthetic, spiritual, educational, sense of place, and recreational values of public space, could be eroded. In fact, studies have shown the negative impact of waste on people's experiences of public places. Such place-disruptive qualities of waste may lead to what Di Masso, Dixon and Hernández (2017, pp. 98–99) would call a "sense of place dissatisfaction" and "place detachment".

The prevailing throw-away culture or what Hawkins (2006, p. 30) calls an "ethos of disposability", presents other important elements of the arts and cultural issues of waste and public space. It brings up the question of what sort of art and culture the UN-Habitat-led place-making agenda seeks to institutionalise. This question is most pertinent amidst the prevailing "ethos of disposability" that has effectively rendered waste "a landscape in its own right" in urban public spaces (Hawkins, 2006, p. 30). Put more simply, the global place-making agenda needs to come to terms with the dominant "culture and art of unsustainability" if it is to deliver on its promises (Kagan, 2011b, p. 23).

This research draws much inspiration from the more grassroots philosophy of SPPM. Exhibiting a shift from the dominant fixed notions of art and spatial use towards a deliberate attempt to rethink art and space collectively, SPPM effectively unsettles the conventional notions of what art, public space and sustainability are. SPPM not only fosters a re-appropriation of public space to shape it in communities' image, but also reinventing its use through "social practice artform[s]" like gardening (Courage, 2017a, p. 6).

Essentially, this form of place-making takes art and culture away from the consumer-driven, monumental events realm into everyday life. SPPM reflects Stucker and Bozuwa's (2012, p. 46) "art of sustainability" whose aim is to advance the global aspirations of sustainability. Also, SPPM draws inspiration from Kaprow and Kelley's (2003, p. 201) notion of "lifelike art" which aims at turning art at the service of life rather than art itself, that is, "artlike art".

This conception of place-making, then, demystifies the oft-abstract, specialised and fuzzy concepts of art and sustainability by embedding them in the everyday "place-shaping" activities of urban waste and public space practices. This is the art and culture which place-making may need to institutionalise if it is to advance the global agenda towards sustainable cities and communities.

1.3. Research aims

Against this global-local theoretical background to place-making, this research aims to examine Riverside resident participants' experiences of the eco-cultural services of public space and how waste malpractices impact those experiences. In doing this, the study seeks to set the theoretical concepts of place-making against the residents' embodied experiences of waste and public spaces. I also wish to enrich the theoretical principles of place-making by embedding them in the rich textures of people's embodied experiences of waste and public spaces.

1.4. Concepts and definitions

This section outlines the key concepts and phrases and the ways in which they are used in this study. These key concepts and phrases are public space, waste, art, culture, ecosystem services, and (artful) sustainability. I will describe them individually also in relation to one another.

Waste

Waste denotes general or domestic wastes which are considered to pose limited environmental and public health risks if properly managed as classified in South Africa's National Waste Management Strategy (DEFF, 2020). General waste streams consist of paper, cardboard, plastics, glass, organic waste etc. This definition of waste encompasses other related terms as found in the literature like litter, junk, trash, garbage, etc.

Public space

In defining public spaces, I use the Global Public Space Programme-adopted definition of "all places publicly owned or of public use, accessible and enjoyable by all for free and without a profit motive" (UN-Habitat, 2021b, p. 12). Within this definition, I include related terms like open space system, landscape and urban green infrastructure which connotes the entire urban

green network composed of semi-natural and man-made green spaces like urban parks, streams and community gardens.

Ecosystem services

Ecosystems are a dynamic complex comprising microorganism, plant, animal and the non-living beings interacting as a functional unit. The phrase "ecosystem services" refers to the benefits people obtain from ecosystems. These ecosystems are part of the urban public spaces with which this study concerned.

This study interrogates a range of ecosystem services comprising four main categories as outlined in the MEA report. These include *cultural services* like recreational, aesthetic, and spiritual benefits; *regulating services* that regulate climate, floods, disease, wastes, air and water quality; and *supporting services* like soil formation, photosynthesis, and nutrient cycling; *provisioning services* such as fibre, food, water, and timber.

The study acknowledges the conceptual and practical challenge of distinguishing between the mutually supportive biophysical or environmental spaces and the resulting cultural practices of, and benefits to, humans captured in the concept of ecosystem services. Therefore, I will use the terms "eco-cultural" or "bio-cultural" (dis)services to reflect this interdependence.

Culture

This study adopts a values systems view of culture as assessed through the lens of sustainability by some cultural sustainability scholars. Culture here is understood to denote the social production and transmission of shared values and meanings. This description of culture "covers both the values upon which a society is based and the embodiments and expressions of these values in the day-to-day world of that society" (Hawkes, 2003, pp. 3).

Against the cultural sustainability discourse which centres around the idea that sustainability is a cultural issue, this study makes use of such expressions as

an "ethos of disposability" and "culture of (un)sustainability" to reflect this value systems definition of culture.

Art

Art should be understood as the diversity of symbolic mediums through which a community develops, expresses and makes meaning of its culture. This diversity of symbolic mediums include narrative, poetry, dance, photography and painting.

Beyond this conventional understanding of the concept of art, this study adopts the social practice art usage of the concept. In social practice art, transformations of public spaces through urban farming and community gardening are considered artforms. This conception of art has been popularised by the social practice place-making (SPPM) theorist and practitioner, Cara Courage (2015, 2017, 2021).

Artful sustainability

Sustainability as used in this study extends beyond the traditional three economic, social and ecological pillars of sustainable development. These are also called the triple—people, profit and planet—bottom-line approach to sustainable development (Bals, Tate and Ellram, 2022). Sustainability here is used in the cultural sustainability sense that advocated for culture's inclusion as the fourth pillar of sustainable development alongside the traditional three. This view aligns with the "culture as sustainable development" perspective which I will elaborate more on in **Section 2.4** of the report.

The phrase "artful sustainability" will be used in the original sense of the prominent cultural sustainability theorist, Sacha Kagan. In its basic sense, artful sustainability refers to "artistic and creative approaches… to sustainability-oriented action and research" (Kagan, 2017, p. 151). As I will argue later in this report, artful sustainability research is a distinct branch of the traditional arts-based research (ABR) methods with a uniquely artistic turn to sustainability research.

Going beyond the traditional notions of art and sustainability as though things distant from daily practice, artful sustainability research draws on a wide range of artforms—including social practice art—to foreground the untapped or underutilized potential of art in sustainability research.

Ultimately, the concepts of art, sustainability and culture as used in this research study defy easy separation conceptually, methodologically and practically. This is the essence of artful sustainability research as conceptualised by Kagan (2011, pp. 399–400):

> [Where] sustainability is understood as a continuous search process, art is then to be constructed as a field of experimentation, engaged in everyday life and culture

Hence, I will sometimes use the concepts, art, culture, creativity and aesthetics interchangeably. This is mainly because art continues to be perceived as the ultimate manifestation of culture, and has close ties with the aesthetic. This conception of artful sustainability research reflects the report's "theories-in-use" approach which seeks to bring the compartmentalised domains of art, culture and sustainability into the realm of everyday practices (Dieleman, 2012, p. 49).

1.5. Problem statement and rationale

This study is based on an investigation of Riverside resident's everyday waste and public space practices. While the settlement has been hailed for having "all the markings of what constitutes a sustainable human settlement" (CoJ, 2019), Riverside is showing signs of waste mismanagement practices marked by open dumping and burning which is visibly reshaping its public spaces. Little is known about how Riverside's residents perceive and experience public spaces amidst a growing throw-away culture.

The study is set against the context of global efforts at institutionalising the arts and culture through place-making interventions to foster communities' sense

of place. To date, little scholarly attention has been paid to place-shaping aspects of disposal and their attendant impact on people's sense of place or belonging. Beyond the theoretical abstractions of place-making, a critical examination of communities' everyday experiences of place-making in its concrete manifestation in place and space is also required.

To address this seeming theory-practice gap in place-making, the research makes a locally grounded analysis of place-making through the lens of the residents' daily experiences of waste and public space practices. Ultimately, the study aims to ground the oft-abstract UN-Habitat-led global place-making agenda in the rich texture of Riverside residents' everyday experiences of waste and public spaces.

1.6. Research methods

This qualitative research study uses a case study strategy and draws on a range of practices broadly associated with the arts-based and practice-based methods.

Case study strategy

This report is based on a case study of Riverside. A case study strategy is characteristically used to make an in-depth inquiry into a topic or phenomenon within its real-life setting or context (Saunders, Lewis and Thornhill, 2019). This strategy aligns with this study's objective of gaining a contextual insight into the residents' waste and public space experiences in their real-life context.

Arts-based methods

The study deploys a range of artistic methods. These include electronic and physical diaries, drawings, narrative and photography to interrogate cognitive and more-than-cognitive dimensions of people' waste and public space practices and experiences. Arts-based methods proved useful in exploring and collecting data about the complex sensorial, aesthetic and

imaginative aspects of the residents' lived experiences of waste and public spaces (Leavy, 2020; Ward and Shortt, 2020; Casey and Murray, 2022).

Practice-based methods

Practice-based research refers to research studies that integrate theory with practice or what is sometimes termed a theories-in-use approach (Dieleman, 2012). In this study, I treated the theoretical concepts of art, sustainability and culture as inseparable from their place-based lived experiences and practices by the residents. Consequently, knowledge about these concepts was construed as both situated in theory and emergent in practice (Kagan, 2019).

1.7. Research limitations

The first major challenge in executing this research study concerned time constraints because of delays in getting my ethics clearance. This had me resorting to "discount ethnography", that is, reducing the extensive pre- and post-activities interaction I had initially planned to have on the field and with the research participants (Thoring, Luippold and Mueller, 2013, p. 3). The lack of time also deprived me of the opportunity to adequately interrogate the rich contextual data I had gathered with the resident participants.

While some participants showed a good understanding of the "*Make*" toolset instructions together with an intrinsic interest to participate, others lacked these. This may explain why only 5 of the 15 '*Make*' activities were completed at the end of the study. Also, while open to allowing new issues, methods, goals and perspectives to emerge in the course of the research, I did not fully embrace emergence as integral to my research. Put simply, I did not anticipate and embrace the uncertainty and puzzlement characteristic of trans-disciplinary emergent research (Dieleman, 2012).

1.8. Research questions

Against the theoretical backdrop of place-making as an integrative strategy towards sustainable cities and communities, I ask the following overall research question:

- How do resident participants experience the eco-cultural services of Riverside's public spaces and how are these experiences impacted by waste malpractices?

Sub-questions:

- What eco-cultural services of public spaces are valued by the resident participants?
- What impact does waste in public spaces have on participants' perceptions or experiences of public spaces?
- What do participants' experiences of waste and public spaces reveal about their sense of place in Riverside?
- What gaps are identified between the theoretical concepts of place-making and Riverside resident participants' everyday lived experiences of waste and public spaces?

1.9. Chapter outline

Chapter two contextualises the study by setting out four thematic areas of importance for understanding the current discourses on the role of art and culture in urban sustainability studies. I discuss these themes through the lens of waste and public space.

The first theme outlines the contested "cultural sustainability" philosophies concerning the role of the arts and culture in urban sustainability. The second theme interrogates the eco-cultural dimensions of waste and public spaces. The third one considers place-making's potential to serve as a "boundary object" at the intersection of the arts and cultural aspects of urban sustainability issues of waste and public space. The last theme examines art

as a research method, with a particular emphasis on the emerging, yet divergent, field of artful sustainability research

Chapter three presents the study area, highlighting its physical and socio-spatial attributes through a place-making lens. This chapter also sets Riverside's portrayal as an integrated and sustainable human settlement against the background of its growing waste malpractices in public spaces.

Chapter four outlines the methods adopted in conducting this study, including the techniques used to generate data for answering the research questions. I elaborate on what the '*Say-Do-Make*' model is, and how it was used at different stages of the research process. This chapter pays particular attention to the '*Make*' toolset co-utilised and analysed with the resident participants to capture our rich everyday experience of waste and public spaces.

This chapter also sets out my positionality and identity in relation to the study site and the impact these had on the research processes. I also consider the research limitations and challenges encountered in the process of going about the theoretical-methodological aspects of the study.

Chapter five presents an analysis and discussion of the generated data and the processes followed in making sense of it using the model outlined in the fourth chapter. It delves into an analysing of the resident participants-generated data together with CoJ officials' data about efforts at embedding the arts and culture towards sustainable cities.

Chapter 6 draws conclusions to the report based on the findings about the questions. The chapter briefly outlines the research questions before thrashing out the main finding about each one of them. Lastly, it considers the potential areas for further research in Riverside concerning the eco-cultural dimensions of waste and public spaces.

2. Literature

2.1. Introduction

The literature review sets out thematic areas of significance for understanding the current discourse on the role of art and culture in urban sustainability studies from the cultural sustainability literature. I interrogate these themes through a waste and public space lens. All themes are collectively important for an integrated understanding of the largely fragmented fields of arts, culture, waste, public space and sustainability studies with which this study is concerned.

I will first explore the current global efforts at institutionalising the arts and culture towards implementating SDG 11.6 and 11.7 in particular. I then consider the diverse "cultural sustainability" philosophies around which the role of art and culture in urban sustainability are debated. I examine these through the lens of waste and public space practices.

Following that, I interrogate the eco-cultural dimensions of waste and public spaces within the ecosystem services (ES) literature. I then consider place-making as a "boundary object" at the intersection of the arts and cultural aspects of urban sustainability issues of waste and public space. I examine art as a research method, with a particular emphasis on the emerging, yet divergent, field of artful sustainability research from which this study drew inspiration. I then conclude with a theoretical framework summarising the key theories of relevance for a coherent analysis of the gathered data and answering the research questions.

2.2. Urban waste and public spaces in SDG 11.6 and 11.7

SDG targets 11.6 and 11.7 calls on cities to "reduce the adverse per capita environmental impact of cities… by paying special attention to… waste management and providing universal access to safe, inclusive and

accessible, green and public spaces" by 2030 (Gordon, Davila and Riedy, 2022, p. 810). These targets underscore the close relationship between urban waste and public space practices. To date, the eco-cultural dimensions of urban sustainability issues about waste and public spaces remain understudied and compartmentalised in policy and academic research.

This siloed treatment of the complex urban landscape happens amidst global efforts at localising the SDGs. Localisation is about co-creating with communities to find solutions to global goals at the local implementation level (UCLG, 2018, 2022). Making sustainability comprehensible and practical in the day-to-day lives of urban communities remains a challenge, however.

Amidst increasing acknowledgement of the complexity of sustainability efforts, there are growing global calls for serious consideration of the eco-cultural dimensions of sustainability (UCLG, 2015). At the international level, the UN-Habitat, UCLG and UNESCO have been at the forefront of underlining the role of culture in sustainability. The World Commission on Culture and Development report, *Our Creative Diversity* (1995), for instance, had previously underscored the key role of grassroots popular art interventions towards the global urban sustainability agenda.

Street art, the report states, has the potential to "save, rehabilitate or give new life to areas doomed to demolition, dereliction or anonymity" as forms of collective creativity (World Commission on Culture and Development, 1995, p. 80). The report contested the dominant "single, uniform, linear path... [that] inevitably eliminate cultural diversity and experimentation, and dangerously limit humankind's creative capacities" (World Commission on Culture and Development, 1995, p. 7). Since then, there has been greater interest in the arts and culture in both research and practice concerning the urban sustainability agenda (Soini and Birkeland, 2014; Meireis and Rippl, 2019).

Mainly through its 2004 globally adopted Agenda 21 for Culture document, the UGLG (2008, 2015) has been working with some 300 cities to embed the arts and culture towards the urban sustainability agenda. Sections 4 and 7 of

the nine "commitments" of the 2015 adopted Agenda 21: Actions document, for instance, call on cities to embrace the arts and culture for sustainability in urban planning and public space management (UCLG, 2015). Johannesburg and Durban are among the few African member cities. However, an emerging field of "cultural sustainability" discourse has come to put front and centre the debates on the role of art and culture concerning the urban sustainability agenda.

2.3. Locating art within the "cultural sustainability" discourse

The call for greater consideration of the largely disregarded role of the arts and culture in urban sustainability discourse happens within the growing, but fragmented, "cultural sustainability" discourse (Kagan, 2011b; Soini and Birkeland, 2014; Meireis and Rippl, 2019). The prominent cultural sustainability theorist, Sacha Kagan, has consistently maintained that sustainability is foremost a cultural challenge. In his book, *Art and Sustainability: Connecting Patterns for a Culture of Complexity* (2011), Kagan extensively explores the field's key dimensions of arts, culture and sustainability.

Therein, he argues that sustainability should be "understood as a continuous search process [where] art is...constructed as a field of experimentation, engaged in everyday life and culture" (2011, pp. 399–400). Sustainability is a search process as it has yet to formulate solutions to everyday issues like urban waste and public spaces (mal)practices. This requires arts-based forms of research, expression and experimentation in what Kagan (2011, p. 170) somewhere calls "the search process of cultures of sustainability". The role of art and culture remain contested areas of study and practice within the cultural sustainability discourse, however.

The cultural sustainability discourse has different, or even competing, narratives and normative positions. Soini and Birkeland (2014) identified seven major narratives or storylines in the cultural sustainability discourse. These comprise the cultural heritage, cultural vitality, economic viability, cultural

diversity, locality, eco-cultural resilience and eco-cultural civilisation narratives (See **Figure 2**). While not mutually exclusive, the cultural sustainability landscape reflects four ideologies or attitudes that Soini and Birkeland (2014) call "contexts". Of these ideologies, two remain dominant. One of these is the narrow anthropocentric view of the art and culture composed of the conservative and neoliberal contexts. The other is the eco-centric—or to use Zeng's (2019) term, "ecoholism"—perspective comprising the communitarian and environmental narratives.

Dessein's *et al.*, (2015) three-part model depicted below complements Soini and Birkeland's in illustrating the dominant perspectives on the role of art and culture in the cultural sustainability discourse. The "culture in sustainable development" perspective—represented by the orange free-standing pillar alongside the other pillars of sustainable development on the left side of the diagram—remains the dominant narrative (see **Figure 2.1**).

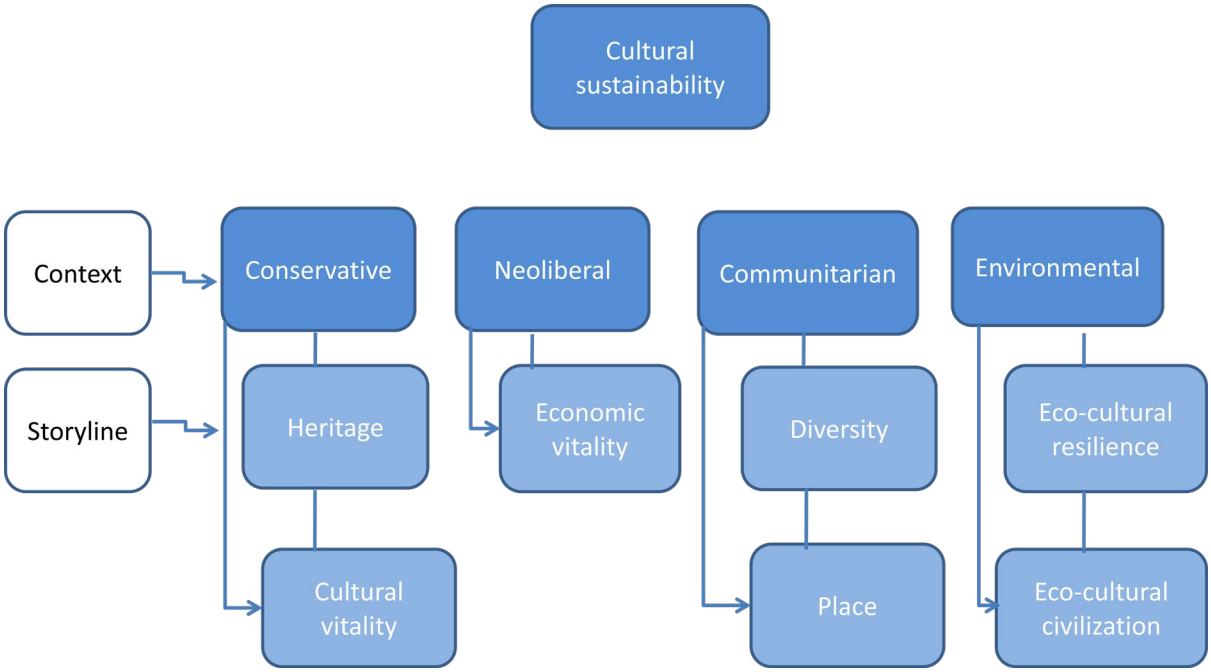


Figure 2.1 Summary table of storylines and political contexts of ''cultural sustainability'' **Source**: Soini and Birkeland (2014).

South Africa's Department of Environment, Forestry and Fisheries (DEFF), which is responsible for waste and open space management under the

Environment and Culture sector of the Expanded Public Works Programme (EPWP), would exemplify this narrative.

The "culture in sustainable development" perspective has been criticised for its tendency to confine the arts and culture to museums, galleries, heritage and tourist sites. An assessment of the EPWP's Green and Open Space Management, People and Parks, Working for Ecosystems, and Working for Waste programmes under the Environment and Culture sector betrays this perspective of culture. While the sector frames its programmes within the sustainability agenda, it acknowledges its "biasness towards job creation" (DEA, 2014, p. 1). An assessment of the sector's 2019-2024 report focus areas show an orientation towards the tourism and creative industry (DPWI, 2019). This suggests a narrow view of the arts and culture's role in the sustainability agenda which could further derail the long-term sustainability goals of cities and communities (Averchenkova, Gannon and Curran, 2019; SACN, 2020). This is because the sustainability agenda entails a balanced consideration of the eco-social, alongside economic ones.

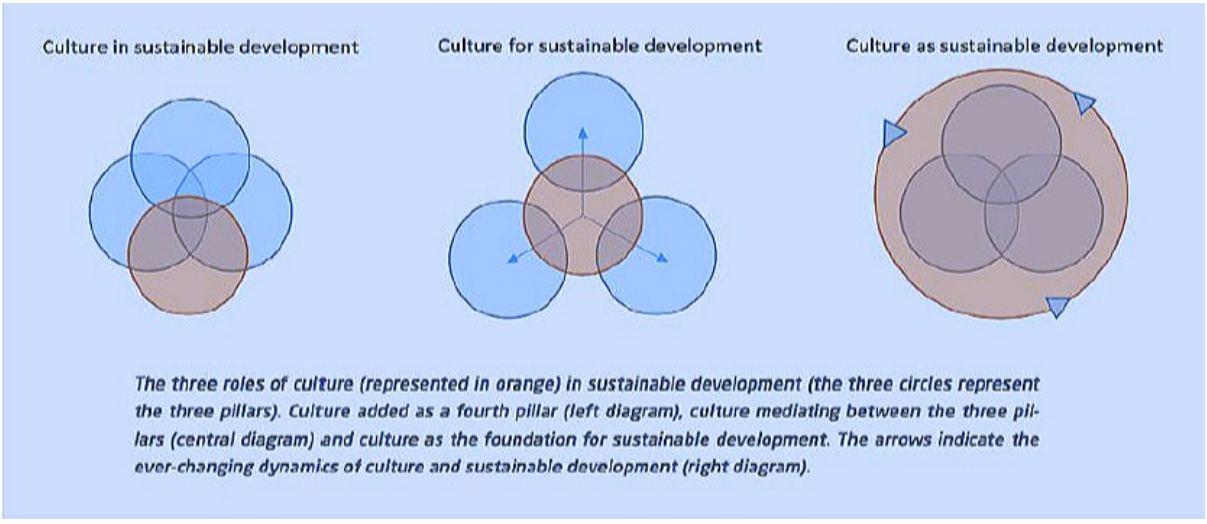


Figure 2.2 Three models of culture and sustainable development **Source**: (Dessein *et al.*, 2015).

This hegemonic view of the arts is largely associated with the "consumerist messaging of mass media" that has, according to Iqani (2020, p. 10), "contributed to [the prevailing] disposable culture". This disposable culture refers to the dominant throwaway culture responsible for "the trashing of

beautiful environments" such as urban public spaces (Iqani, 2020, p. 35). According to Dessein *et al.*, (2015), this prevailing model has largely confined the arts and culture to the creative industries of the urban economy.

The "culture in sustainable development" perspective, argue Soini and Birkeland (2014), exhibits a narrow anthropocentric view of art and culture. They see it as composed of the conservative and neoliberal urban class. In essence, the hegemonic model aligns with Soini and Birkeland's (2014, p. 217) "heritage and cultural vitality storylines" which are primarily "constructed in and for the global space" of consumer culture. Here, art and culture mainly serve the urban consumer-driven economy (Iqani, 2020; Parameswara and Utama, 2020).

The "culture for sustainable development" perspective stresses the mediating role of culture in all spheres of human life. This perspective spotlights how culture mediates the various sustainability pillars (i.e. the triple bottom-line). The central diagram of **Figure 2.2** portrays this. In urban (sustainability) studies, the everyday eco-cultural aspects of waste and public space practices continue to receive scant attention (Zheng *et al.*, 2021). This is partly because consumption, rather than what Hawkins (2006, p. 24) calls the "ethos (i.e. culture) of disposability", remains the main focus of cultural studies (Storey, 2017; Lau, 2022). The growing field of waste studies is gradually expanding this domain beyond its traditional techno-economic orbit towards hybrid spatio-ecological and cultural considerations (Martínez, 2017; Bradley and Persson, 2022; Lau, 2022).

Studies show the mediating role culture plays in society's waste and public space practices and experiences. Waste management practices are influenced by location-specific norms, traditions and locally prevailing practices (Kountouris, 2022). In their extensive study of more than 300 publications, Zheng *et al.* concluded that cultural norms and practices impact the achievement of all 17 SDGs and 79% of its targets, respectively (2021). Despite the dominance of techno-managerial solutions in urban waste and public space management practices, their eco-cultural

dimensions are increasingly being acknowledged as central. For instance, the South Africa Department of Environment, Forestry & Fisheries (DEFF) has identified the "lack of a recycling culture" as one of the major obstacles to waste management (2020, p. 15).

Cultural values permeate different aspects of social life. The management, uses and valuation of public spaces have, for instance, been shown to be mediated by cultural values and norms. Even design and management practices of public places are mediated by cultural values. Cilliers *et al.*, (2018, p. 172) have noticed a general preference for "sanitised" lawns and parks over "messy" yet ecologically functional parks and gardens. This often leads to a homogenisation of urban green spaces and fragmentation of biotic habitats.

Such a people-centred landscape preference is what Lee and Kendal (2018, p. 125) call the "scenic aesthetic mode". This mode is based primarily on visual perception or beauty. Orr and Pyle (, 2008, p. 211) are critics of this "barbering and manicuring of open spaces" as they generally lack any ecological value. They, instead, call for greater accommodation of features like build-side gardens in the built environment. Such features are known to invite biotic diversity, thus enabling greater environmental contact and learning or even care for it.

An "ecological aesthetic mode" of landscape preference is based mainly on biodiversity (Cilliers *et al.*, 2018). Managing urban green spaces for people and nature needs a balance of both. However, the dominant urban public space design and management culture appears to show a preference for the former. The erasure of community gardens from many cityscapes globally evinces this, according to Langemeyer and Gómez-Baggethun (2018). Dessein *et al.* (2015) argue that the general disregard for the mediating role of culture may explain the elusiveness of sustainable development.

The eco-cultural dimensions of sustainability issues of waste and public space practices tend to receive little attention in policy and practice. This may

explain the abortive waste prevention efforts that have plagued the South African government for decades, for example. Among these includes the ambitious 2001 Polokwane Declaration on Waste Management which had set out to achieve zero waste in landfills by 2022 (Oluwatoyin, Otieno and Venter, 2008). The 2015 National Waste Management Summit's "war on waste" programme has generally not reduced the amount of waste in landfills (DFFE, 2015).

The CoJ is among the cities confronting major waste mismanagement practices in public spaces—and with negative socio-economic and environmental costs. At 1 492 000 tons of general waste per year, the city accounts for about half of Gauteng Province's 3.02 million tons (South African Planning Institute, 2016). A considerable amount of this waste winds up in public spaces. An estimated 250 000 tons of illegally dumped waste is collected per annum at an estimated cost of 70 million (Hedley, 2022). This potentially comes at an even greater socio-environmental cost or "disservice".

A growing number of scholars recognise the potential role of art in the search process for a culture(s) of sustainability (Hahn, 2010; Kagan, 2011b; Meireis and Rippl, 2019). Kagan has repeatedly called for the need for humanity to re-discover its numbed sensibility to the human-nature interdependencies. He believes the arts may play a key part in re-awakening this sensitivity (Kagan, 2011b, 2012, 2019). The art he refers to diverges drastically from the one fostered by the "culture in sustainable development" perspective.

Kagan (2012, p. 31) refers to "art understood as a verb, rather than as a noun", meaning art not as final achievements, fixed products or artefacts, but rather, as "interactions, experiences and processes in their vitality". Understood this way, art serves the role of interrogating everyday sustainability practices like urban waste and public space (mal)practices at the rational and more-than-rational levels.

2.4. Eco-cultural dimensions of waste and public spaces

The "culture as sustainable development" model is more dynamic, holistic and transformative than the previous two. According to Dessein *et al.* (2015, p. 31), culture in this model assumes the role of actually "creating sustainability". Kagan (2011b, p. 16) calls this the "culture(s) of sustainability", meaning a "set(s) of norms and values, social conventions and institutions, informing the transition to more sustainable practices". The model departs from the narrow focus on the economic imperative associated with the "culture in sustainable development" perspective. "Culture as sustainable development" recognises the inextricably connected dimensions of "culture [as] part of nature, "within art" (Kagan, 2011a, p. 68). These human-nature interpenetrations spotlight the oft-neglected eco-cultural dimensions of the compartmentalised urban waste and public space regimes.

"Culture as sustainable development" enters the interdependent, yet largely compartmentalised and understudied realms of art, waste and public space practices. Dessein *et al* relate "culture as sustainable development" to an "eco-cultural civilisation" that interrogates the everyday place-based meaning of sustainability. This perspective promotes an understanding of the inseparability of the human from the non-human communities.

Table 2.1 Cultural ecosystem services and examples **Source**: Adapted from Brears (2020)

Supporting	***Regulating***
Nutrient cycling, soil formation, primary production etc.	**Food and water regulation, disease and climate regulation etc.**
Provisioning	***Cultural***
Food, water, fibre, wood etc.	**Aesthetic, spiritual, educational, recreational and artistic inspiration etc.**

However, the cultural sustainability literature has yet to step beyond theoretical abstractions into empirical eco-cultural dimensions of sustainability issues like waste and public spaces. Interrogating the ecosystem (dis)services literature is illuminating in understanding "culture as sustainable development" in relation to art, waste and public space practices.

Urban public spaces are now widely recognised for having a range of socio-economic, environmental and cultural values (i.e. benefits) called Ecosystem Services (ES) (Potschin *et al.*, 2016; Langemeyer and Gómez-Baggethun, 2018; Dai *et al.*, 2022). These are categorised into provisioning, regulating, supporting and cultural services as shown in **Table 2.1**. To date, few studies have examined "culture as sustainable development" in relation to art, waste and public space practices. Fish, Church and Winter's (2016) article, *Conceptualising cultural ecosystem services: a novel framework for research and critical engagement*, has sparked some interest into cultural ES studies where art, waste and public space practices interact (Brown *et al.*, 2020; Tandarić, Ives and Watkins, 2020).

The central elements of **Figure 2.3** depict the mutually reinforcing character of public (i.e. environmental) spaces and cultural practices. According to Fish, Church and Winter (2016), public spaces like urban gardens and parks provide special contexts for undertaking cultural activities like creative expression (i.e. art) and consumption. From these, humans may derive a range of cultural benefits (i.e. identity, experiences, capabilities) such as a sense of place and artistic inspiration. The ecosystem disservice literature has usefully illustrated the potential loss of these bio-cultural benefits owing to man-made sources, among other things (Lyytimäki *et al.*, 2008; Lyytimäki and Sipilä, 2009; Guo, Song and Dong, 2022).

Lyytimäki and Sipilä (2009, p. 311) have identified waste malpractices or littering in public spaces among the drivers of bio-cultural disservices which they describe as:

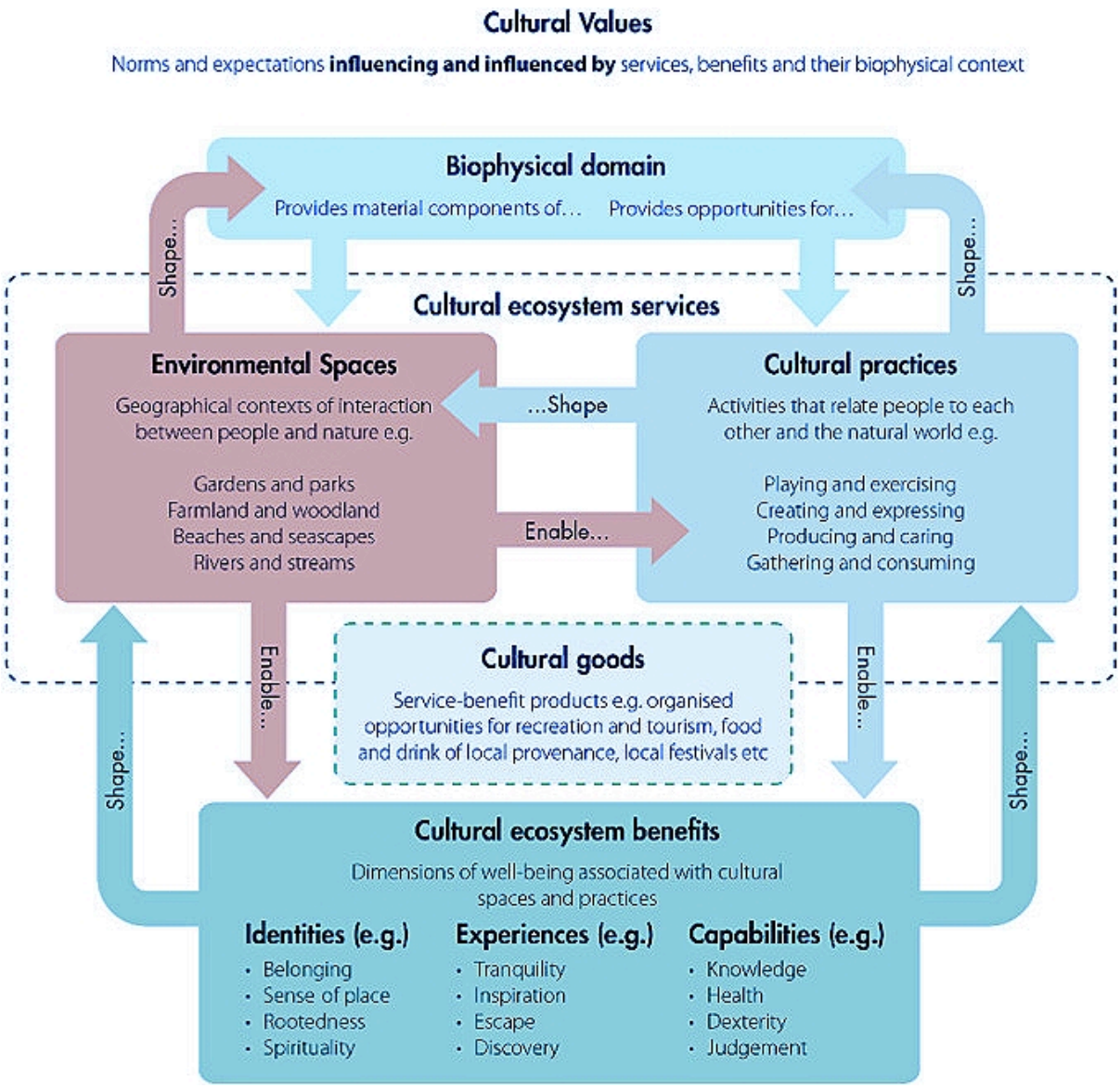


Figure 2.3 Concept of cultural ecosystem services and benefits **Source**: Fish, Church and Winter (2016)

> [The] negative effects of ecosystem degradation caused directly or indirectly by human activities.

Waste malpractices in public spaces, then, have the potential to issue in what Di Masso, Dixon and Hernández (2017, pp. 98–99) call a "sense of place dissatisfaction" and "place detachment". Place detachment is characterised by an erosion of a positive cognitive, affective, and conative evaluation a person or community has towards a place. A negative evaluation of a place may result from a host of things including a diminishing sense of safety, socio-political or environmental changes that may disrupt a community or individuals' normal experiences of a place. Place detachment

is closely tied to the idea of place dissatisfaction, and both are elements of the "umbrella" concept of sense of place as detailed by Goran Erfani (2022).

One may assume that the (artistic) inspirational values of public spaces could be disrupted in the same fashion. Through his concept of "negative aesthetics", Berleant (2010) cautions against limiting art to the beautiful and sublime. The arts often draw inspiration from the ugly and profane to perform social functions like intellectual and emotional enlargement of audiences, or as social commentary.

2.5. Place-making as a "boundary object"

The disciplines of art, waste and public space research and practice operate in compartmentalised, detached and oft-hyper-specialised domains within the shared urban landscape. Moreover, how these fragmented domains relate to urban sustainability is largely understudied and without an integrating model. The growing global acceptance of place-making as a social practice and planning instrument holds promise of becoming a "boundary object" for art, waste and public space integration (Carlile, 2002; DHS, 2019; Turvey, 2019; Courage, 2021). Wenger (2008, p. 105) describes boundary objects as:

> artifacts, documents, terms, concepts, and other forms of reification around which communities of practice can organize their interconnections.

Boundary objects, then, facilitate interaction and communication between different knowledge domains, concepts or communities of practice. Boundary objects are useful as a "shared space" for research or practice beyond disciplinary domains towards common goals (Carlile, 2002; Akkerman and Bakker, 2011; Schrag and McKinnon, 2022). Enqvist *et al.*(2018) reiterates that boundary objects do not enable cross-disciplinary interaction by themselves. This implies that boundary "crossing" or operating beyond domains may be subject to intense negotiations.

As the chief custodian agency for SDG 11, the UN-Habitat has been spearheading place-making as a co-implementation strategy to promote safe, clean and universally accessible public spaces (UN-Habitat, 2021a, 2021b). The agency is increasingly orienting place-making towards joint implementation of SDG 11.7 primarily through its Global Public Space Programme (UN-Habitat, 2018, 2021a). This broad view of place as a process and ever in the making towards sustainable cities and communities accords with that of Singh, Niglio and Rana (2023).

Table 2.2 Theoretical foundations of place-making **Source**: Singh, Niglio and Rana (2023).

Theoretical foundations of place-making
As source of perception: through the smells, sounds, and sights experienced while immersed in the place
As a process: occurring somewhere along a continuum ranging from "change that is imposed upon an individual, or society" through "change that is created by the individual"
As Sense of place: Sense of place is accepted to be a vital point in our understanding of what 'placemaking', as a process, creates in terms of an outcome within an individual and the cultural Group

In what they consider the three foundational principles of place-making, Singh, Niglio and Rana (2023) paint a holistic picture of how to understand a place (**Table 2.2**). According to them, a place or a landscape (i.e. public space) is to be understood as ever in the process of "becoming". The authors appear to suggest that the formal place-making agenda of urban design and planning needs to keep these principles as the main focus or outcomes of their "landscaping" efforts. More than that, they argue that most human activities fall within the domain of place-making. Although not directly

mentioned, this broader conceptualisation of place-making allows for the arts and cultural aspects of everyday waste and public space practices.

The UN-Habitat (2021a, p. 29) has also been at pains to ensure that "placemaking institutionalizes the role of art and culture to achieve a lasting sense of place for [communities]". To date, it remains open as to what sort of art and culture the UN-Habitat-led place-making agenda seeks to institutionalise. Place-making is primarily concerned with the creation of liveable urban public spaces and is defined as:

> The act of strengthening the connection between people and place through the creation of public spaces that act as a centre or focal point for the community (Ellery and Ellery, 2019, p. 238).

At the practical level, place-making uses "a set of tools that puts the community front and centre of deciding how their place looks and how it functions" (Courage, 2021, p. 2). According to Courage (2021, p. 3), it should prioritise the "relative expertism" of local communities often using socially engaged art as one of its main tools. Place-making positions local residents as experts of their neighbourhoods' public place through participatory arts-based interventions. The abundance of literature on the potentially transformative role of place-making as a trans-disciplinary boundary object for sustainability largely lacks empirical studies (Ellery and Ellery, 2019; Raven, 2021; Schrag and McKinnon, 2022).

It appears that place-making has yet to empirically demonstrate the relevance of its arts-led interventions to everyday sustainability issues of urban waste and public (mal)practices. The social practice place-making (SPPM) theorist and practitioner, Cara Courage (2015, 2017, 2021), has incessantly demanded that place-making render its arts relevant to everyday public space issues. Her typology matrix underscores the different ecologies of practice within which place-making, as a contested boundary object, operates (Courage, 2017b).

While not framed within the sustainability discourse, the typology is potentially useful in depicting the divergent philosophies underpinning place-making interventions. From these one may position each place-making approach within the global agenda to leverage its "arts and cultural" potential towards practical sustainability issues such as waste and public space practices.

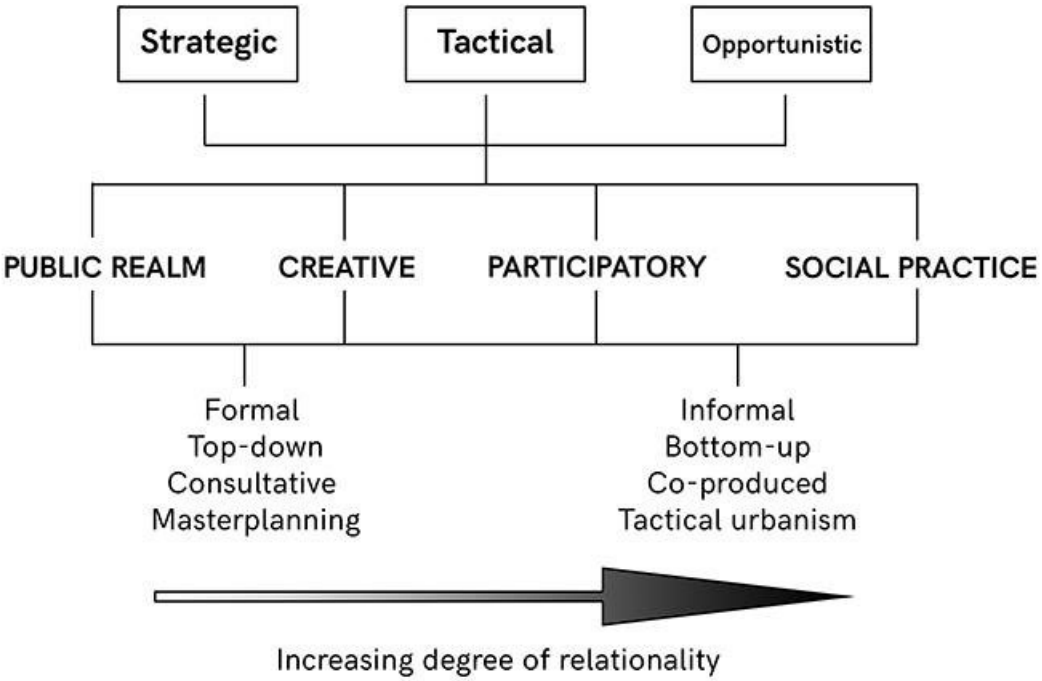


Figure 2.4 A place-making typology matrix **Source**: Courage (2014) in Prawata (2020)

While Courage (2017) acknowledges the lack of clear-cut boundaries between them, she identifies four sets of place-making approaches (see **Figure 2.4**), that is:

- Strategic public realm place-making;
- Tactical creative place-making;
- Opportunistic participatory place-making;

Tactical social practice place-making.Among these, Courage foregrounds two categories of place-making. These are the formal (planning) sector (i.e. strategic public realm place-making) and the citizen-led (i.e. tactical SPPM) approaches. She has been critical of the strategic public realm place-

making's tendencies to impose fixed meanings of art and spatial use. Here, art and culture are taken away from their everyday manifestations into the realms of urban exhibitions and monumental events (Courage, 2017b). This place-making approach parallels the hegemonic "culture in sustainable development" perspective discussed previously.

Not only is strategic public realm place-making associated with a low degree of engagement (i.e. relationality) with the art and "people-in-place", it scarcely engages with concrete sustainability issues (Loh *et al.*, 2022). Under this dominant regime, art and culture have essentially become part of the "consumerist messaging of mass media [that has] contributed to [the dominant] disposable culture" (Iqani, 2020, p. 10). This disposable culture refers to the prevailing throwaway culture responsible for the trashing of shared public spaces.

Strategic public realm place-making's top-down style is often "non-contextual, produces generalist outcomes and generates further fixed notions of community and public space based on a 'pseudo-participation", contends Courage (2017b, p. 57). Loh *et al.*(2022) argue that it is inauthentic to place-making (place washing), and tends to use the arts for economic motives (art washing). Conversely, (tactical) SPPM is considered to manifest a higher degree of relationality and goes a step beyond the other place-making approaches (Courage, 2017b, 2021). Courage (2015, p. 3) defines SPPM as:

> a cluster of co-produced, relational creative practices that employ a social practice arts approach to social, cultural and material urban issues.

Tactical SPPM, therefore, is marked by a shift from a fixed notion of art and spatial use towards a deliberate attempt to rethink art and culture collectively. Social practice art goes under a variety of names: collaborative art, contextual art, socially-engaged art, experimental art, dialogic art, interventionist art, participatory art, engaged art, community-based art

(Bishop, 2012). As an artform, this place-making approach typically employs simple and low-cost interventions in vacant, derelict and not-used public spaces outside of the officially sanctioned ones (Courage, 2015b, 2021). Tactical SPPM is, in fact, primarily centres on the restoration of the social bond and the democratisation "art in space and place" rather than the production of art objects (Bishop, 2012; Courage, 2017b; Sholette, Bass and Social Practice Queens, 2018; Wang, 2019).

Tactical SPPM also underlines art's role in the revitalisation of "left-over" urban public spaces, hence, "a placemaking of 'spaces of uncertainty'" (Courage, 2017b, p. 67). Even so, social practice theorists tend to over-emphasise the human over non-human socio-spatial consideration. One may contend that if tactical SPPM is to engage meaningfully with public spaces, it needs to engage directly with the eco-cultural implications of waste in everyday urban public spaces. Put more clearly, SPPM needs to come to terms with Hawkins' (2006, p. 30) notion of an "ethos (i.e. culture) of disposability" that he implicates in environmental and moral decline. This interdependent co-existence between the human and non-human communities is the essence of (cultural) sustainability.

I argue that for place-making—as a boundary object at the intersection of art, urban waste and public spaces—to have any relevance to the sustainability agenda, it needs to embrace a multispecies perspective. This is what Olsen (2022, p. 315) calls an eco-social "arts of multispecies placemaking" which demands rethinking what users and uses urban public spaces cater for. This art is eco-social not only because it fosters a re-thinking of human-environment relations but also as it demands a heightened sensibility to the non-human species with which we share public spaces. This ethic has potentially far-reaching implications from a complex arts, waste and public space perspective.

A multispecies place-making brings a fresh perspective to the dominant techno-economic language of the waste or circular economy. Traditionally

framed within the 3-Rs of recycle, reduce and reuse/repair as depicted in **Figure 2.5** (Pariatamby, Bhatti and Hamid, 2020). The heightened sensibility to multispecies place-making unsettles this. If one uses McLaren, Niskanen and Anshelm's (2020, p. 4) language, recycling and repair are more than mere fixing stuff, but rather, "mending the human-nature relations". This perspective may foster a new sense of civic responsibility to the human and non-human communities in relation to urban waste and public space practices.

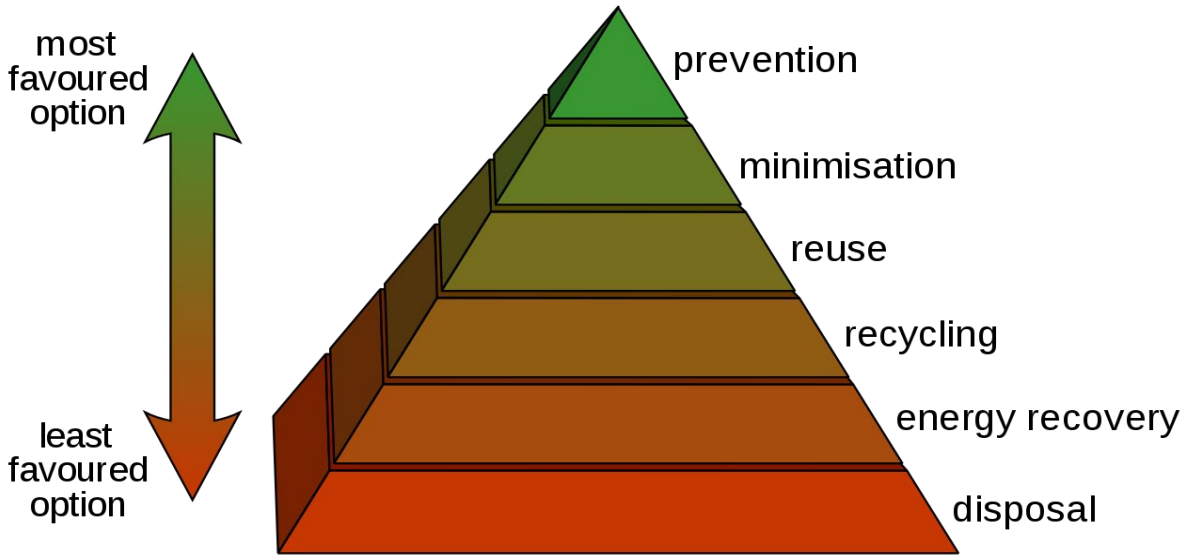


Figure 2.5 Sustainable solid waste hierarchy **Source**: Johal and Kaur (2020)

The establishment of the Centre on African Public Space (CAPS) in 2020 could be construed as a strategic public realm action. This regional hub, jointly created by the Johannesburg City Parks and Zoo (JCPZ), Joburg Development Agency (JDA), the UN-Habitat's Global Public Space Programme and the German International Cooperation (GIZ) underlines the growing recognition of the important role of public spaces in urban sustainability. CAPS is a knowledge exchange hub "for urban practitioners, community groups and scholars dedicated to…advancing knowledge and growing expertise related to African public space" based in Johannesburg (CoJ, 2022).

The prevailing waste and public space regimes in most African cities have been characterised as unsustainable (Pariatamby, Bhatti and Hamid, 2020,

2020; Mehring *et al.*, 2021). This is further compounded by the politico-economically competitive nature of the urban waste and public space management regimes. For instance, Bénit-Gbaffou (2018) and Samson *et al.*(2020) have written extensively on the failing efforts at co-management of parks and waste picker integration in the city of Johannesburg. This underscores the need to embrace place-making as a transdisciplinary boundary object for the diverse communities of practice in the arts, waste and public space regimes.

CAPS may present an opportunity for a joint re-consideration of the meaning of urban sustainability against the backdrop of the eco-cultural dimension of waste and public space practices. A major obstacle, however, remains the prevailing situation where many cities in the global South "remain poorly informed about the global agendas and their relevance at the local level... [and] perceive the SDGs to be an 'internationally imposed agenda'" (UCLG, 2018, p. 24). An art and cultural consideration of urban waste and public spaces could galvanise place-making's potential as a "boundary" frame, process, and strategy towards sustainable cities and communities at the local–global interface.

2.6. Art as a research method

Art as a research method traditionally draws on tools and techniques from the now-established field of Arts-Based research (ABR) methods (Leavy, 2020; Ward and Shortt, 2020; Casey and Murray, 2022). ABR typically adapts practices and tenets from traditional arts genres like painting, stories, drawings, poetry, music, dance, film, and sculpture as data collection, interpretation and presentation techniques. Leavy (2020) perceives ABR as a unique and transdisciplinary way of knowledge-building and communicating complex topics with a diverse audience that is often missing in traditional methods.

ABR as one of its primary aims the dismantling of the positivist dualisms between the subject–object, rational–emotional, and concrete–abstract typical of mainstream research approaches (Heinrichs and Kagan, 2019; Leavy, 2020; Mreiwed *et al.*, 2023). Unlike the mainstream research tradition that tries to eliminate or solve paradoxes, Kagan (2019) foregrounds ABR practices as living inquiries that merge embodied doing, making and knowing. ABR, then, works with emergence and explores spaces between the known and unknown that cannot be fully captured through language and text-based research methods alone.

An assessment of the ABR literature reveals certain methodological challenges. Its seeming loyalty to the traditional "artlike art" genres of paintings, sculptures, poetry etc., may essentially render ABR resource and technically demanding for both researcher and participants (Kaprow and Kelley, 2003; Coghlan and Brydon-Miller, 2014). This hyper-specialised view and use of art resembles that of the hegemonic "culture in sustainable development" and public realm place-making models presented above. Seen this way, art as a research method reinforces, instead of challenging, the dominant researcher-researched dichotomies and power inequities of conventional approaches, ague Coghlan and Brydon-Miller (2014).

2.7. From Arts-based to artful sustainability research

For sustainability-oriented artist-researchers concerned with capturing the everyday practical issues like waste and practical space practices, ABR has certain theoretical-methodological shortcomings. For one thing, the idea of integrating arts and cultural dimensions within a holistic vision of urban sustainability is comparatively new to ABR (Duxbury, 2019). For another, ABR holds fundamentally different principles and views about what, for instance, constitutes art in research compared to sustainability-oriented (eco)-social practice artist-researchers (Herrmann-Pillath *et al.*, 2023). One may argue that in ABR, art has come to serve art (i.e. artlike art) while (eco) social art

practice employs art in the service of life (i.e. lifelike art)(Kaprow and Kelley, 2003).

In essence, social practice artist-researchers' efforts are focussed inwardly toward re-evaluating the role of art in institutionalised (research) practices and outwardly toward broader eco-social concerns. When Kagan (2011) considers art a field of experimentation, it should be understood both in relation to institutionalised (research) practices and in broader eco-social concerns at the local–global interface. While he does not explicitly state this, my interpretation is based on his argument for "a global (environ)mental change" away from the linear, fragmented view of reality fuelling the mainstream culture of unsustainability (Kagan, 2012).

Such a culture of unsustainability could be construed as a mindset in institutionalised (research) practices and broadly in the "hyper-developed consumer culture" of modern society (Kagan, 2012, p. 11). (Eco) social practice artist-researchers count among the chief exponents of the need to harness the arts' potential towards an artful approach to sustainability research. Artful approaches implicitly respond to the apparent paucity of appropriate techniques in ABR for enquiring into the rich textures of everyday sustainability issues like waste and public space practices.

Scholars variously term the use of art in sustainability research, "arts-based sustainability" (Heras *et al.*, 2021), "artful sustainability research" (Kagan, 2017) and "the art of sustainability" (Stucker and Bozuwa, 2012). Kagan (2019, p. 64) describes artful approaches to sustainability research as "research that aims to contribute to social transformation for desirable and viable futures". To date, however, little practical guidance exists on how to conduct such research.

2.8. "Artful design" tools and techniques

Interrogating the eco-cultural dimensions of sustainability issues of waste and public spaces located within the "boundary object" of place-making

presents several theoretical-methodological challenges. These challenges concern not only what and how to investigate, but also who to include in the investigation. This is because, as Singh, Niglio and Rana (2023)show, most human and non-human activities such as waste and public space practices fall within the place-making domain at the global-local intersection. This appears to be a common challenge among artful sustainability-oriented inquirers into practical issues.

There are growing calls for "artistic and creative approaches… to sustainability-oriented action and research" in urban sustainability studies (Kagan, 2017, p. 151). These appeals, however, seem to have yet to be accompanied by clear methodological tools and techniques for inquiring into context-specific sustainability issues like urban waste and public space practices. Neither an integrated framework nor clear techniques exist for interrogating the eco-cultural dimensions of urban sustainability issues of urban waste and public space. That these place-making practices operate at the public-private and local-global intersection further complicates their research. Matos *et al.*(2022) have previously highlighted the paucity of applicable tools and techniques for those wishing to generate contextually relevant data concerning sustainability issues.

To date, cultural sustainability and place-making researcher-practitioners reflect different perceptions about how to inquire into the everyday eco-culture aspects of urban waste and public space practices. This presents opportunities to devise new, or adapt existing, frameworks to enable a shared language for these different "communities of practice" to use in communicating with each other. A small number of artist-researchers are resorting to the '*Say-Do-Make*' tools and techniques in response to this paucity of appropriate artful sustainability research methods (Pearson *et al.*, 2018; Matos *et al.*, 2022).

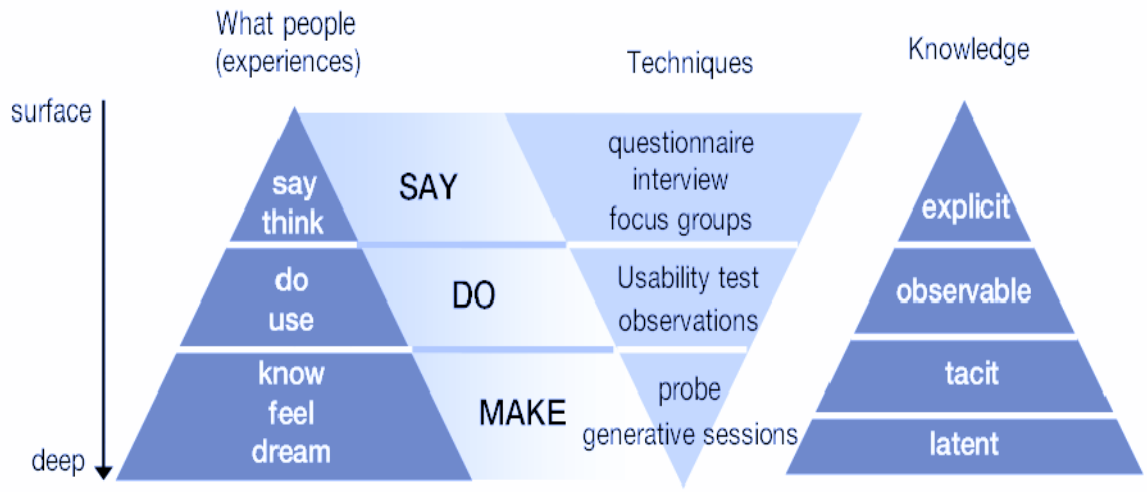


Figure 2.6 Methods that study what people Say, Do and Make help access different levels of knowledge **Source**: Sanders and Stappers, (2012)

Popularised by Elizabeth Sanders and Pieter Jan Stappers (2012), the '*Say-Do-Make*' model encompasses a set of research tools and techniques to use during all stages of the research. The '*Make*' tools and techniques, sometimes called generative or cultural probes (Thoring, Luippold and Mueller, 2013; Sanders and Stappers, 2014), are used as research tools to facilitate learning about, with and from people about their everyday lived experiences.

The '*Make*' tools have received special attention among artful sustainability scholars (Crabtree *et al.*, 2003; Pearson *et al.*, 2018; Matos *et al.*, 2022). The '*Make*' tools originate in the traditions of "artist–designers"(Crabtree *et al.*, 2003), and proliferate under divergent descriptions like "design art" (Malpass, 2019) and "artful design"(Küpers, 2016). Often used to experiment with concrete solutions to shared problem situations, '*Make*' tools typically comprise cameras, diaries, maps, photo-albums, postcards etc used by participants about their experiences of the phenomenon under investigation.

The '*Say-Do-Make*' tools and techniques may prove versatile enough to serve as a "shared language" among artist-researchers and other stakeholders around the shared problem of urban waste and public space (mal)practices. As a data collection method, the framework may be used alongside traditional '*Say*' tools like questionnaires to uncover the surface-level explicit knowledge (see **Figure 2.6**)(Sanders and Stappers, 2014). '*Do*' tools like field

observations may serve to uncover observable knowledge of participants. '*Say*' and '*Do*' tools characteristically unearth participants' surface-level knowledge.

Sanders and Stappers (2012) argue that '*Make*' tools and techniques may elicit tacit and latent knowledge. This knowledge includes participants' dreams and feelings characteristically difficult to access through traditional '*Say'* and '*Do'* tools alone. Well-structured '*Make*' tools are believed to foster participants' creativity and to unobstructively elicit their deeper (mis)understanding of a given theme as a qualitative data-gathering technique (Crabtree *et al.*, 2003; Matos *et al.*, 2022).

Whether drawn pre-formulated "off-the-shelf" or co-designed with participants, '*Make*' tools are not to be used randomly or without clear instructions. Thoring, Luippold and Mueller (2013) recommend utilising the tools to serve the specific research functions. The playful, versatile nature of '*Make*' tools may enable joint interrogation or experimentation with the oft-abstract, distant, and fuzzy concepts of sustainability and place-making. I consider this the essence of artful sustainability research.

These approaches accord with the SPPM's "lifelike art" meaning of art and culture. The '*Say-Do-Make*' model may provide a way of co-interrogating the shared, yet differently perceived, sustainability issues of arts and cultural dimensions of waste and public space practices. My artful sustainability inquiry is set against the backdrop of place-making's position at the intersection of the arts and cultural aspects of urban sustainability issues of waste and public space (**Figure 7**).

2.9. Conceptual framework

Table 2.3 The place-making framework for analysing the eco-cultural dimensions of waste and public spaces. Column 1 **Source**: (Lyytimäki and Sipilä, 2009). Column 2 **Source**: (UN-Habitat, 2021a; Singh, Niglio and Rana, 2023). Column **Source**: (Millennium Ecosystem Assessment, 2005)

Place-making dimensions

1. Place-disruptive dimensions of waste malpractices	**2**. Theoretical principles of place-making	**3**. Eco-cultural services of public space
1.1. Litter in urban parks owing to careless human behaviour	2.1. A source of perception "through the smells, sounds, and sights experienced while immersed in the place"	3.1. **Spiritual & religious values**: "Many religions attach spiritual and religious values to ecosystems or their components"
1.2. Sense of place dissatisfaction or place detachment	2.2. Sense of place by creating "an attachment or connection between a person and the place in which they live"	3.2. **Sense of place**: "people value the "sense of place" that is associated with recognized features of their environment"
1.3. Man-made environmental damage	2.3. A process occurring "somewhere along a continuum	3.3. **Inspiration**: "Ecosystems provide a rich source of inspiration for art, folklore, national symbols, architecture, and advertising"
1.4. Negative image of public space due to poor management	2.4. A means to embed "the role of art and culture to achieve a lasting sense of place for a community"	3.4. **Recreation & aesthetic values**: "People often choose where to spend their leisure time based in part on the characteristics of the natural or cultivated landscapes"
		3.5. **Educational values**: "Ecosystems and their components and processes provide the basis for both formal and informal education"

The table above (**Table 2.3**) summarises the key concepts that emerged from literature about the study's objective of capturing the resident participants' waste and public space experiences. The table has three integrated categories of place-making as a boundary-crossing concept at the nexus of

waste's place disruptive potential (column 1); the theoretical principles of place-making (column 2); and the eco-cultural services of public spaces.

To illustrate, if place-making is meant to generate a sense of place (i.e. column 2 point 2.2), that should make provision for the potential generation of negative experiences because of waste malpractices in public spaces possibly resulting in sense of place detachment (i.e. column 1 point 1.2). Moreover, the place-disruptive qualities of waste have implications on people's ability to benefit from the eco-cultural services of public space (i.e. column 3 point 3.2). This multi-dimensional view of public space reflects the theories derived from literature about the eco-cultural dimensions of waste and public space seen through the applicable boundary-crossing concept of place-making.

Conclusion

The chapter considered literature covering areas of significance for understanding the eco-cultural dimensions of sustainability issues of waste and public space. It also explored the current UN-Habitat-led efforts at integrating the arts and culture towards the implementation of SDG 11 with a focus on targets 11.6 and 11.7. Then, literature on place-making's potential to function as a "boundary object" at the interface of the eco-cultural dimensions of waste and public spaces was interrogated. Art as a research method was discussed, with a particular focus on the emerging field of artful sustainability research upon which some of the philosophical approaches of this study found inspiration. Lastly, the key theories from literature were summarised into a conceptual framework which guided the data analysis and answering of the research questions.

3. Context

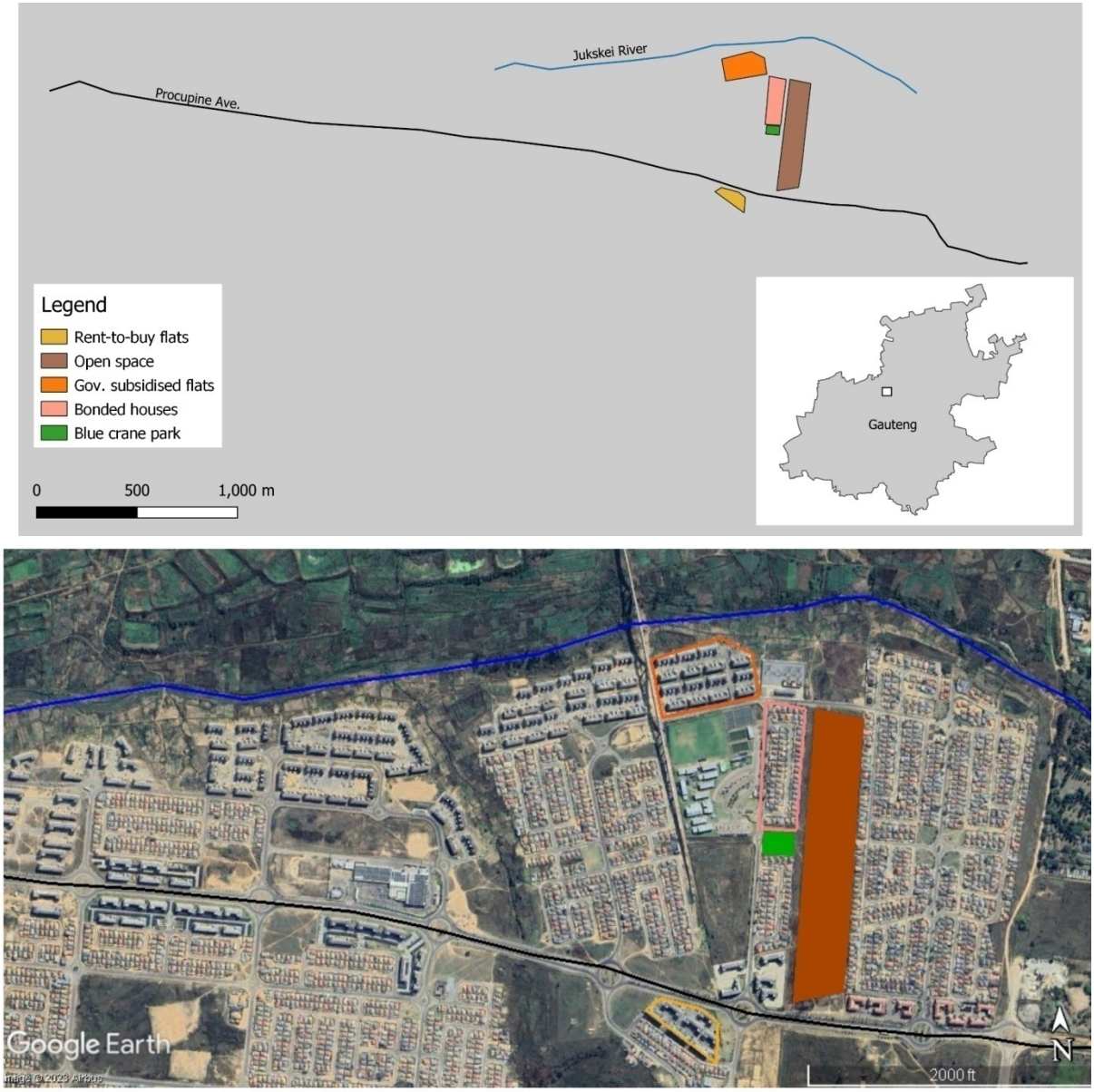
3.1. Introduction

This contextual chapter presents the study area, highlighting its physical and socio-spatial attributes through an integrated and sustainable human settlements lens. It begins by setting out the contextual features of Riverside, including how it relates to the Gauteng province's "mega" cities project. Then I outline Riverside's portrayal as an integrated and sustainable human settlement from a policy and an on-the-ground reality perspective (City of Joburg, 2019). Thereafter, I present the various contextual and internal dynamics of Riverside's waste and public spaces from an integral and sustainable human settlement perspective.

3.2. Setting the scene

The research study takes place in Riverside View Mega City (Riverside for short). The area is a high-density residential area which lies northwest of the CoJ's Region A, with Steyn City to the South and Diepsloot to the North. **Map 3.2** depicts the Gauteng province and Riverside within the boundaries of the CoJ. Little is written about the history of the land upon which Riverside is built. However, Riverside appears to have been part of an erstwhile massive 600-hectare (about 840 soccer fields) land mass called Zevenfontein.

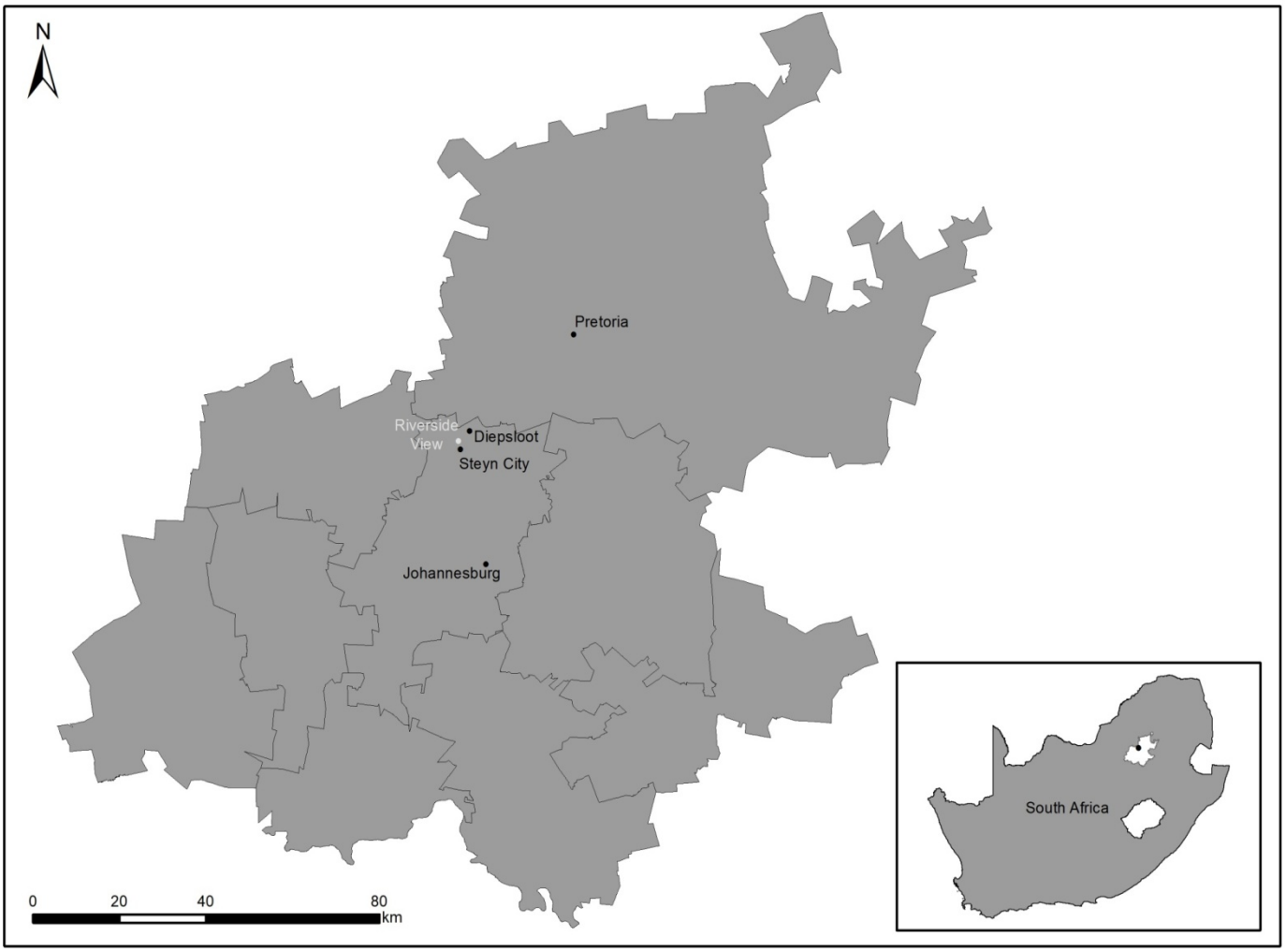
With a long history of farming dating as far back as the 1800s, Zevenfontein also has a more recent history of socio-spatial segregation and evictions fuelled by property developers' interest in the area in the 1970s (Mji, 2018). In the process, former black farm workers were dispossessed and later relocated to the nearby township of Diepsloot in the early 1990s. Other scholars also depict Zevenfontein to cover the area that is today Riverside and Diepsloot, including the neighbouring up-market areas of Fourways, Dainfern and Steyn City (Bénit-Gbaffou, 2002; Mji, 2018; Landman, 2020).



Map 3.1 Research study focuses area and components in Riverside: Different property typologies in orange, pink and yellow; open space features comprising the jukskei River stream, the park and open space (in blue, green and brown, respectively) **Source**: Author (2023)

From an economic point of view, Riverside is well spatially well-located. Situated in an area that is counted "one of the fastest growing economic hubs in Gauteng" (Pongoma, 2018, p. 24), Riverside's residents are closer to socio-economic opportunities. The settlement is also within about equal driving distance between the CoJ and Pretoria (see **Map 3.2**). With the promised business sites yet to materialise (Pongoma, 2018), it is unclear if Riverside will meet the government's ambitions of building economically self-

contained or self-sufficient cities that have so far proven elusive (Ballard, 2017; Charlton, 2017)

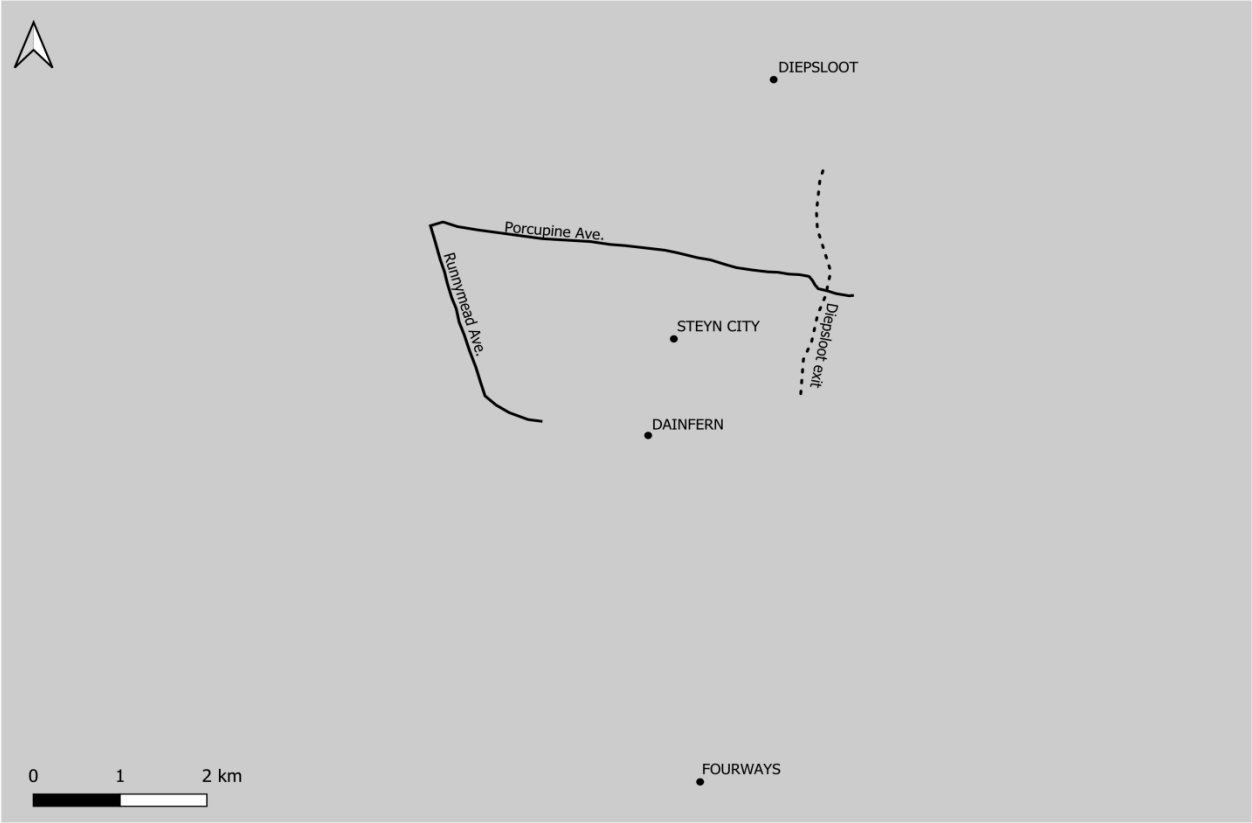


Map 3.2 Gauteng province and Riverside within the CoJ boundaries **Source**: Author (2023)

Launched in 2016, Riverside is made up of some 10 082 residential units (Pongoma, 2018; Steyn, 2021). Its property typology comprises the multi-storey state-subsidised houses worth an estimated R5 billion (Pongoma, 2018), bonded houses and rent-to-buy flats (see **Map 3.1**). Additional units are still under construction at the time of writing this report (i.e. 2023). Riverside counts among the Department of Human Settlements' diversely termed mega cities, catalytic or mega housing projects (Ballard, 2017; Charlton, 2017). The settlement is but one of Gauteng province's several "mega" housing projects alongside Lufhereng, Fleurhof, Modderfontein, Savanna City

and Cosmo City (Ballard, 2017; Charlton, 2017; City of Joburg, 2019; Ballard, Hamann and Mkhize, 2021; Lephondo, 2021).

Currently, Riverside has only one entry and exit road. Porcupine Avenue leading to R551 is that only road. The reportedly completed alternative road, Runnymead Avenue which starts at the back end of extension 70 where it connects to Porcupine Avenue, has yet to come into service (Sithole, 2023). Another alternative road connecting Porcupine Avenue leading to the R551 towards Diepsloot is yet under construction (see **Map 3.3**). The delays in the completion of these projects have led to considerable traffic congestion on Porcupine Avenue during peak hours.



Map 3.3 Riverside's exist roads and nearby areas: Porcupine Avenue and Runnymead Avenue (not yet in service at the time of writing); Diepsloot exit road (under construction) **Source**: Author (2023)

Several scholars voiced scepticism about the dominant state-led mindset towards "mega" human settlements. For instance, Ballard (2017) questions the logic of focusing on sheer quantity over other aspects of sustainable settlements like self-sufficiency and informal livelihood opportunities. The

prefix, "mega", only masks government's capital and political ends, he argues. Ballard contends that the idea of "mega" cities only creates an empty sense of abundance. Other academics have voiced comparable concerns over the government's tendency to set overly optimistic economic targets regarding these settlements, among other things (Charlton, 2017; Ballard, Hamann and Mkhize, 2021; Lephondo, 2021).

3.3. Riverside as an integrated and sustainable human settlement

Riverside has been hailed for having "all the markings of what constitutes a sustainable human settlement" (CoJ, 2019). The notion of "integrated and sustainable human settlements" is a multidimensional one. In the South African context, it largely reflects the state's efforts at restructuring the socio-spatial configuration of cities and redressing the yet prevailing apartheid geography (DCGTA, 2016). Integration in this sense is about undoing the racial segregation and separate development of the past. This links integration with the notions of spatial justice and inclusionary mixed-income houses close to work opportunities.

In fact, Riverside is considered to herald a new beginning for Gauteng province's densification project (Pongoma, 2018). Densification reflects the national Department of Human Settlements efforts at reducing the 2.3 million housing backlog (Ballard, 2017; Charlton, 2017). It is also necessitated by the CoJ's rapidly growing urban population amidst a shortage of land. Riverside's state-subsidised four-storey buildings are counted the first of their kind in the city (Badenhorst, 2018). The concept of socio-spatially integrated settlements also mirrors the UN-Habitat-led (2020) drive for multi-functional cities in which places to live, work, and play.

3.4. Waste and public space as part of integrated and sustainable cities

An important aspect of Riverside's integrated and sustainability considerations relates to the cross-cutting issues of waste and public spaces. As an essential component of the built environment, healthy public spaces are considered a key feature of integrated and sustainable cities (DHS, 2019). In accord with the UN-Habitat's (2021) agenda on urban public space, South Africa's Integrated Urban Development Framework (IUDF) promotes public space as an important ingredient of sustainable human settlements (DCGTA, 2016). The IUDF takes inspiration from the New Urban Agenda's vision for cities that feature "quality public spaces, friendly for families, enhance social and intergenerational interactions, cultural expressions" (UN-Habitat, 2020, p. 2).

Waste and public space as aspects of integrated and sustainable cities overlap with the principle of spatial sustainability. This principle requires land use management systems to consider socio-economic and environmental sustainability, states the CoJ's (2016) Spatial Development Framework (SDF). In this sense, proper waste management practice overlaps with the quest for healthy public spaces and spatial sustainability. This, then, calls for thinking and planning in systems about the socio-spatial implications of waste on public space.

While generally considered separately in scholarship and practice, achieving universal and environmentally sound public spaces requires paying special attention to waste management practices as set out in SDG 11.6 and 11.7 (UN-Habitat, 2018; Ramani and Hettiarachchi, 2022, p. 11). IUDF's policy lever 3 (integrated sustainable human settlements) and 7 (empowered active communities) (DCGTA, 2016) particularly acknowledge the cross-cutting nature of waste and public space practices. Sustainable patterns of waste disposal in relation to public space underpin the principles of spatial sustainability upon which the concept of integrated and sustainable human settlement is partly based (CoJ, 2016; DCGTA, 2016).

3.5. Waste and public spaces practices in Riverside

Riverside's waste and public spaces comprise a diverse typology of facilities and services among the three property typologies. The settlement's diverse waste and public spaces reflect the different ecologies of formal and informal place-making practices that make up its landscape. The formal place-making practices comprise the municipally planned and designed aspects of waste and public space. Conversely, informal place-making practices reflect "unprogrammed" re-appropriation of urban space by local residents in response to immediate waste and public space needs.

The settlement's formally pre-approved public spaces encompass 8 (based on self-observation and Google Earth) recreational parks designed with street furniture and various amenities. Riverside's recreational parks are what the UN-Habitat (2018, p. 10) calls "pocket open public spaces" and are differently furnished with public seating, waste bins, lighting and water features as well as children's playgrounds. These are all located in the bonded houses and rent-to-buy properties, however (see **Image 3.1**).

Moreover, the formally programmed waste management regime differs along the three property typology lines (i.e. the state-subsidised flats, bonded houses and the rent-to-buy flats). The state-subsidised section uses open communal containers for domestic waste disposal which are collected once every three to four weeks (see **image 3.2**). The other two sections have individual waste bins collected each Friday. These waste regimes raise various spatial sustainability and spatial justice questions.



Image 3.1 Riverside's waste and public space (mal)practices **Source**: Author (2023)

The settlement's waste management practices could have broader implications beyond its immediate public spaces. Riverside is home to numerous small-scale agricultural farmers located alongside the Jukskei River

and its tributaries. As the Jukskei makes its course north towards joining the Crocodile River (Iqani, 2021), natural forces like winds and rain could transport Riverside's domestic waste particles into nearby farming, and ever into distant, areas in the Northern province (see Cobbinah and Addaney, 2019; Schwanen and Kempen, 2019). These considerations potentially make the settlement important in the CoJ's ongoing efforts at rehabilitating its biodiversity (Michèle *et al.*, 2017; CoJ, 2021) and watercourses (Letaba Herald, 2016).

To be sure, various aspects of the settlement betray a troubling lack of what would constitute an integrated and sustainable human settlement. For one thing, Riverside is seeing growing waste mismanagement practices marked by open dumping which is visibly reshaping its public spaces. This has seen waste become an increasingly common feature in its public spaces. Such waste malpractices may imperil Riverside's long-term spatial sustainability.



Image 3.2 Domestic waste disposal in Riverside's state-subsidised houses (**Source**: Author 2023)

For another, the differentiated waste management regimes and public space distribution potentially puts into question the state's narrative that Riverside is a socio-spatially integrated settlement.



Image 3.3 Public spaces amongst the state-subsidised houses **Source**: Author (2023)

Additionally, the state's promise to deliver "all the amenities such as playgrounds for children, a recreational centre for the community, places for worship... and communities centre[s]" is yet to be truly fulfilled (Pongoma, 2018, p. 25). Not only are playgrounds only available to certain sections of the settlement, Riverside still awaits these community spaces. This lack of "social open space[s]" like communities centre[s] to complement "ecological open space[s]" like parks questions the state's integrated settlement narrative (CoJ, 2002, p. 21). Delays in delivery are not uncommon with such large scale projects, however. **Image 3.3** depicts the informal place-making practices by the residents of the state-subsidised flats.It remains to be seen, though, how the 2021 denotation of 12 000 tree species by the nearby lifestyle estate of Steyn City will impact Riverside's public spaces (Steyn, 2021). The donation was part of a phased project to forest Riverside's public spaces which are generally lacking in vegetation. These internal dynamics and Riverside's unique setting render it a fertile site of research about the cross-cutting, socio-spatial implications of waste on public space. For an area still constructing a sense of community, public spaces are potentially important sites of study about the human and non-human communities who shape this vital ingredient of sustainable human settlements.

Conclusion

The chapter set out the context of the study, including its internal waste and public space dynamics from an integral and sustainable human settlement perspective. The multidimensional implications of the settlement's waste and public space malpractices were outlined through a spatial justice and sustainability lens. It is based on these unique socio-spatial qualities that Riverside was counted a fertile study site for interrogating the cross-cutting eco-cultural dimensions of sustainability issues of waste and public space.

4. Methodological approaches

4.1. Introduction

This chapter considers the approaches and processes adopted in conducting this research study. It sets out the theoretical-methodological influences of the '*Say-Do-Make*' framework around which the study was designed and conducted. It also outlines the practical tools and techniques used during data generation, analysis and presentation phases of the research report.

I first set out my research design based on the '*Say-Do-Make*' framework and the justifications for adopting this framework. I then consider the selection of resident participants and official participants. Following that, I elaborate on how the '*Say-Do-Make*' framework was utilised at different stages of the research process. That is followed by a consideration of my positionality and identity in relation to the study site and the impact these had on the research processes. Before concluding, I consider the research limitations and challenges encountered in conducting the study.

4.2. Defining the research design

This study adopted a multi-method qualitative research design around the '*Say-Do-Make*' tools and techniques, also called the '*Say-Do-Make*' model. The model aligns with the research objectives to capture the rich texture of the resident participants' lived experiences of waste and public spaces. The '*Say-Do-Make*' model was primarily chosen for its flexibility as a collaborative set of data generation and interpretation tools and techniques. Popularised by Elizabeth Sanders and Pieter Jan Stappers (2012), the model comprises a comprehensive set of tools I could flexibly use during all stages of my research study

This practice-based trans-disciplinary artful sustainability inquiry merges the traditionally separate spheres of arts-based, participatory design and urban sustainability research methods and practices. I term the research artful in the sense of working with creative expressions and of being explicitly reflective-in-action about the sustainability issues of waste and public space. The approaches employed here share much with the research fields diversely called arts-based research (ABR), living inquiry and embodied inquiry (Leavy, 2020; Leigh and Brown, 2021). Moreover, trans-disciplinary artful sustainability research is closely linked to emergent research methods.

Emergent methods not only transverse several disciplinary approaches but also adapt new methods, tactics, goals and even topics as the researcher learns in the course of their research. Emergence, in fact, is an inherent feature of trans-disciplinary artful sustainability research (Kagan, 2019). Emergence moves beyond the pre-planned language and number-dominated methods characteristic of conventional sustainability research. In essence, emergent methods invite researchers to "leave their "methods comfort zone," forcing them to think outside their "methods box"" (Hesse-Biber and Leavy, 2008, p. 10).

I consciously do not frame my research as ABR because this research tradition generally lacks applicable tools and techniques for generating contextually relevant data about practical sustainability issues (Matos *et al.*, 2022). In fact, the idea of integrating artistic methods in sustainability studies is relatively new (Duxbury, 2019; Muhr, 2020). The approaches adopted here reflect, among others, what Dieleman (2012, p. 52) calls a "transdisciplinary artful doing in a space of experimentation" and Kagan's (2019, p. 63) notion of "artful sustainability in transdisciplinary spaces of possibilities".

David Haley's (2010) famous text, *Ecology and the Art of Sustainable Living*, counts among the pioneering work in this field. Artful sustainability research is a response to the mounting calls for "artistic and creative approaches… to sustainability-oriented action and research" (Kagan, 2017, p. 151). As these calls have yet to be accompanied by clear methodological tools and

techniques, '*Make*' tools in particular are increasingly considered a robust alternative among artful sustainability researchers (Crabtree *et al.*, 2003; Pearson *et al.*, 2018; Matos *et al.*, 2022).

Originating in the traditions of "artist–designers"(Crabtree *et al.*, 2003), the adoption of the '*Make*' tools in research reflect the arts and design's broadening horizons further into everyday life. According to Sanders and Stappers (2012, p. 25), '*Make*' tools reflect an emerging mindset shift among researcher-designers from an expert, towards a participatory, mindset which recognises people "as the experts of their own experience". In fact, the '*Make*' tools and techniques are valued among researchers for their ability to address a range of shortcomings typical of traditional research methods (Crabtree *et al.*, 2003; Sanders and Stappers, 2012; Thoring, Luippold and Mueller, 2013; Matos *et al.*, 2022). Some of the issues addressed by the '*Make*' tools and techniques include:

- The paucity of appropriate methods for inquiring into the needs, expertise and experiences of participants.
- The lack of a shared language among artist-researchers and other stakeholders in communicating around a shared problem situation.
- Reducing the distance between the researcher and participants in traditional research practices.
- The lack of modes of understanding and expressing lived reality beyond text, language and numbers.

Sometimes called generative toolsets (Sanders and Stappers, 2012) or cultural probes (Thoring, Luippold and Mueller, 2013), the 'Make' tools provide creative ways of involving participants in research while exploring their everyday experiences. The '*Make*' tools typically comprise a camera, a diary, maps, photo-albums and postcards that are given participants to creatively express themselves about a topic under investigation. These tools are not generic, but rather, created for a specific study purpose (Sanders and Stappers, 2012). As set out in the literature section, '*Make*' tools are not to be used randomly or without clear instructions. Thoring, Luippold and

Mueller (2013) recommend carefully incorporating and utilising each tool to serve specific research functions.

The '*Make*' tools and techniques were deemed appropriate for collaborative sense-making of the complex issues of waste and public space. Saunders, Lewis and Thornhill (2019) state that a research design should show that one has thought through the practical elements of going about answering a study's question(s). The elements of time, location and money were among the things I had to consider in selecting the framework.

Importantly, the fuzziness, complexity and personal nature of the subjects under study were all considered in embedding the research within the '*Say-Do-Make'* framework. These issues not only presented methodological challenges on how to investigate the local waste and public space practices, but also how and who to involve. The model was thought fit for surmounting most of these challenges. Although time and resource-consuming, the four '*Make*' tools were consciously designed and utilised to serve various objectives of the research.

Overall, the '*Say-Do-Make'* model centres on understanding and accessing people's lived experiences through a range of tools and techniques (Sanders, 2002; Sanders and Stappers, 2012, 2014). Traditional research methods of accessing people's experiences comprise '*Say*' techniques like questionnaires, polls and interviews. These often serve alongside '*Do*' techniques such as field observations. The 'Make' tools and techniques go beyond the '*Say*' and '*Do*' techniques which typically only reveal observable experiences which participants can readily recall.

The '*Make*' tools and techniques are meant to uncover people's deeper levels of experience, including both their tacit and latent knowledge and needs. Thus, '*Make*' tools allow people to perform a range of creative acts to express their (mis)understanding, feelings and dreams about an issue under investigation in rational and more-than-rational ways. Essentially, the '*Say-Do-Make'* model is more than a set of tools or methodologies. It is an attitude

and a mindset about people seen as experts in their own experiences (Sanders, 2002; Sanders and Stappers, 2014).

From a question-method fit perspective, the '*Say-Do-Make*' model was thought to suit the objectives of this research. Leavy (2020, p. 281) describes question-method fit as the suitability or "fit between the research questions and the methodology designed to answer those questions". Considering this study's focus on the embodied waste and public space experiences, the model was deemed to offer a flexibly appropriate set of tools and techniques for interrogating these issues.

4.3. Resident participants selection

Resident participants

Following a purposive sampling strategy, the study's resident participants were heterogeneously sampled primarily in-person and word-of-mouth. The first participants were recruited in public spaces in their respective places of residence, while the others were persons I had known prior. RP's were recruited from Riverside's three property typologies composed of the government-subsidised flats, bonded houses and rent-to-buy flats. While a purposive sampling strategy is not considered to be statistically representative, a heterogeneous or maximum variation sampling technique may partially offset some of these shortcomings (Saunders, Lewis and Thornhill, 2019).

Through a heterogeneous sampling technique, one uses "judgement to choose participants with sufficiently diverse characteristics to provide the maximum variation possible in the data collected" (Saunders, Lewis and Thornhill, 2019, p. 321). Initial participants were solicited to help identify other suitably qualified participants, thus allowing for a snowballing effect to occur. My being a local resident familiar with most of the customs and languages spoken in the area somewhat eased the recruitment process.

Owing to the limited time of the study, a total of 12 individuals comprising 4 persons from each of the three property typologies were recruited. To allow for possible discontinuing participants, however, 15 participants were initially recruited from each property type. This proved useful as the extra individuals lost interest in the study along the way. A pre-activity session was undertaken with the selected participants to outline the objectives and clarify expectations of the study. **Table 4.1** outlines the criteria used to select the participants.

Table 4.1 Participant selection criteria **Source**: Author (2023)

Sampling criteria	Yes	No
The participant has two or more years of permanent residence and expects to be available for the duration of the study		
The participant is between 18 and 45 years old		
The participant is able to read and write in a language we both understand. However, participants who are unable to read and write have to commit to visual or non-textual entries and be willing to invest the necessary time and energy.		

The initial group of recruits comprised 3 females from each of the property types (i.e. 9) and 6 males of diverse lifestyles, ages, and literacy levels. The target group was persons between the age of 18 and 45 because I am interested in younger persons believing they would have greater interest in this sort of study. This diverse cohort helped the study generate a broader understanding of Riverside resident participants' waste and public space experiences.

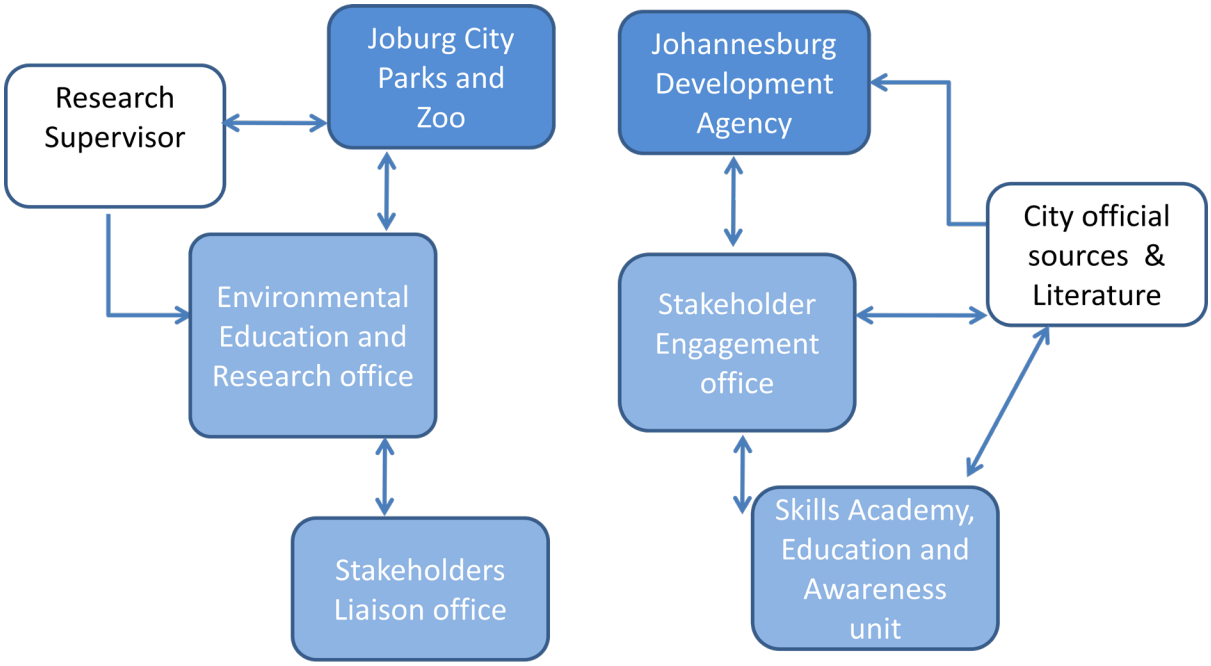
Official as participants

Because of the study's focus on the eco-cultural aspects of urban waste and public spaces through a place-making lens, official participants were sampled from the CAPS associated agencies. As previously explained, CAPS is a knowledge exchange hub whose aim is to grow expertise related to

African public space jointly created by JCPZ, JDA the UN-Habitat and GIZ. In all, 5 online and in-person semi-structured interviews lasting about 40 minutes were undertaken with officials from the JCPZ and JDA.

The interview sought to understand CAPS's arts and cultural approach to the CoJ's public spaces amidst growing waste mismanagement practices. With offices being within walking distance of where my university is located in Braamfontein, the process of setting up interview appointments with the relevant JCPZ and JDA officials was relatively easy. More than that, I followed my research supervisor's leads to find key informants. **Figure 4.1** illustrates how official participants were found in the JCPZ through the supervisor's leads and in the JDA through literature sources.

Figure 4.1 Diagram illustrating how participants were found



4.4. The '*Say-Do-Make*' framework as used here

Tools refer to the physical object used and techniques mean the manner in which these tools are employed. The '*Say-Do-Make*' framework goes beyond the traditional techniques of inquiry (Sanders and Stappers, 2014). Characteristically, the framework's '*Make*' tools and techniques serve

alongside conventional '*Say*' techniques like questionnaires, polls, and interviews or '*Do*' techniques like participant observations.

The 'Make' component concerns what participants produce with the tools given to them. For this study, resident participants were provided with a '*Make*' toolset comprising a "help the public space" waste bag, a personal diary, a CAPS article and support materials as depicted in **Table 4.3**. Together with this '*Make*' toolset, I undertook '*Say*' activities in the form of interviews with resident participants and Official Participants. Considerable '*Do*' activities in the form of participant and field observations were carried out.

By incorporating the traditional "*Say*" technique of interviews alongside the "*Do*" technique of field observations, I set out to capture the participants' explicit and observable knowledge, respectively (Sanders and Stappers, 2014). It is noteworthy that with "*Do*" technique, the individual doing the observing may be the researcher, or the people themselves (Sanders and Stappers, 2012). Therefore, I had to take care not to assume an elevated outsider position typical of conventional research approaches. Hence, I too took part in all activities that the participants partook in.

While this could not be guaranteed, I also asked the participants to display a degree of empathy, reflexivity and a non-judgemental observation of others' waste and public space experiences. For my part, I undertook the dual role of observing the waste and public space practices of participants and of the broader study site. Consciously making an effort to avoid a judgemental attitude partially helped me to capture the resident participants' authentic waste and public space experiences

Between late October and November 30th 2023, I undertook a total of 11 '*Say*' activities with both resident participants and official participants. The '*Say*' activities comprised two pre- and post-activity focus group discussions with resident participants from each property section. During the same period, 24 '*Do*' activities (i.e. ethnographic field observations) were undertaken in all three property typologies, 11 of which were in the

government-subsidised section. The '*Do*' activities in public parks were carried out in different times of the day to understand how, when, and by whom they were used (see **Image 4.1**). A total of 5 '*Make*' activities in the form of creative diaries, photographic and other works were collected from the resident participants. **Table 4.2** outlines the number of '*Say-Do-Make*' activities carried out throughout the study period.

Table 4.2 The number and kinds of '*Say-Do-Make*' activities with the resident and official participants **Source**: Author (2023)

Participant categories (resident participants from each property type & official participants)	Number of participants (With resident participants from each property type & official participants)	Number of '*Say*' activities (With resident participants from each property type)	Number of '*Do*' activities by the researcher	Number of '*Make*' activities completed (With resident participants from each property type
Self-standing houses	4	2	7	2
Rent-to-buy flats	3	2	6	1
Government-sponsored flats	5	2	11	2
CoJ official participants	5	5		
Total	17	11	24	5

In going about the study, I kept close in mind the study's explicit focus on people's embodied experiences of waste and public space. Hence, I consciously avoided the narrow idea of art-as-beauty characteristic of ABR methods and popular culture. Instead, I embraced the SPPM view of art. Here, "social practice artform[s]" like gardening and recycling were deemed to demonstrate a fundamentally aesthetic motivation, and thus, an art in

their own right (Courage, 2017a, p. 6). Hence, embodied waste and public space experiences and practices became the central focus of my data collection process.

For this reason, resident participants were given broad instructions on how to use the '*Make*' toolset. They were asked to think and creatively capture their experiences, feelings and wishes about the "outdoor" spaces they use and value. The "*Make*" activities were question-based mainly, but not entirely, around the following questions:

- What do I like or dislike about this space/space?
- What do I see around? Or who else is using this space/space?
- What use can this space be to the community?
- What use is this space to the community?
- How comfortable, clean or safe is this place?

Table 4.3 The study's '*Make*' toolset and their respective functions **Source**: Author (2023)

Type of tool	**Function**
"Help the public space" waste bag	**Practical** function of place disposable items and inspire
Diary	To enable creative **documentation** of observations of own or others' waste and public space experiences
Colour pens, pencils, paper etc.	**Support** material for creative diarising
CAPS document	**Informational**: provide information about urban waste and public space as global agendas. And to use **ambiguity** as a tool



Image 4.1 Blue Crane Park, Riverside **Source**: Author (2023)

These simple instructions not only allowed resident participants to think creatively about their experiences of public spaces, but also capture whatever made sense to them.

This also saved me the trouble of having to explain to the resident participants the complex concepts of place-making, art, waste and public space (mal)practices. This helped the resident participants and I to perceive public space for what it really is, a process that is ever in the making. The perception accords with Kaprow and Kelley's (2003, p. 201) "lifelike art" notion. In this study, art was meant to be used at the service of, or to understand, life rather than art itself, that is, "artlike art".

Participants were also asked not to use, or think of, the individual '*Make*' tools in isolation, but rather, to perceive them as mutually supportive. Creative use of the "help the public space" waste bags, for instance, was meant to serve the practical function of carrying resident participants' disposable items. The tool, however, could also inspire a range of associative ideas about the eco-cultural and social-spatial implications of waste in public spaces. Participants were encouraged to perceive how waste in public space is first a personal duty before it is a collective one. Those were associative ideas that I encouraged the resident participants to creatively diarise textually and visually in poetry, future scenario paintings, narrative, collages, photography, etc.

These individual conversations in public spaces were deliberately embraced as narratives and research data. I treated such conversations as the invisible narratives of Riverside' waste and public space experience. This data generation strategy would likely not have occurred with conventional data collection techniques like formal interviews. As a result, unproblematic theoretical principles of place-making like sense of place were bodily interrogated. It was through such '*Do*' activities and 'Make' tools like the diaries that I gained such detailed everyday waste and public space experiences of the resident participants.

In actuality, the cyclical process of (re)visiting and encountering the resident participants in their respective public spaces afforded opportunities to

perform several '*Say-Do-Make*' activities simultaneously. For instance, going about my '*Do*' activities often led to chance encounters and conversations with the participants in their respecting public spaces. On several of these '*Do*' activities, certain resident participants of the government-sponsored houses were encountered going about their daily flower and food gardening work. Explicitly treating our conversations as '*Say*' activities allowed me to deliberately gather rich contextual experiences of the resident participants' waste and public spaces.

Here, the participants' social practice artforms of gardening could be photographically captured, interrogated for meaning and serve as a productive '*Make*' activity for the research. Going about my data generation in this fashion exemplifies Dieleman's (2012, p. 52) "transdisciplinary artful doing in a space of experimentation and imagination". That is partly because these encounters afforded the resident participants and I the opportunity to share our individual relative expertise, perceptions and lived experiences of everyday waste and public space practices.

My decision to introduce the CAPS document after the other tools was for it to serve an informational purpose. The document was meant to inform the resident participants about the position of urban waste and public space on the global agendas. I intended to probe their ability to think of urban public space as a multidimensional assemblage at the global-local interface. While resident participants appeared pleasantly surprised to learn about the global waste and public space agenda, it was not immediately clear what they were able to make of it. It is also unclear if it had any impact on their '*Make*' activities.

Combining several functions in one '*Make*' tool is not uncommon in this field of research and practice (Sanders and Stappers, 2012; Thoring, Luippold and Mueller, 2013). This was what I deliberately did with the CAPS tool. While difficult for people trained in the scientific mindset, "art, design and creativity thrive on ambiguity"(Sanders and Stappers, 2012, p. 44). Using ambiguity as a

tool to spark creative thinking about urban sustainability and place-making as embedded in the constant flows of cultures, people and discards at the global-local intersection probably needed more time.

All four '*Make*' tools, then, inspired us to artistically document and express the motivations, intentions and values that underpin waste and public space at the local-global interface. Thus, the oft-specialised notions and practices of place-making, art and sustainability were brought into our everyday life-worlds. Here, the everyday public spaces, including their oft-neglected ""junk" narratives"—meaning everyday waste in public space experiences and accompanying stories—were artistically interrogated and expressed (MacDonald, 2017, p. 279).

The '*Make*' tools potentially helped ground the research in the rich textures of everyday life that could not have been achieved through conventional '*Do*' or '*Say*' techniques alone. It is unlikely that I would have gained the rich "'insider' information" about resident participants' sense of place (disruptions) without '*Make*' tools like the personal diary.

4.5. Artist-researcher positionality

Many qualitative research methods and approaches foreground the importance of reflexivity and positionality. According to Leigh and Brown (2021, p. 34), reflexivity "requires us as researchers to be aware of who we are, what we are doing and why we are doing it". The notion of reflexivity is closely linked to that of positionality because being aware of one's social location or positionality requires being consciously reflective. Positionality is a complex, multi-layered, and dynamic concept. It also encompasses dimensions of power and privilege as well as the "researcher identity in terms of an insider-outsider perspective, based on the researchers' relationship to the specific research setting and community" (Muhammad *et al.*, 2015, p. 4).

My position and identity in relation to Riverside and the resident participants certainly gave me an insider perspective that would normally have not been

possible for an "outsider" researcher. For one thing, my insider identity as a resident of the area enabled me to know the "hidden" micro-aggressions against the residents of the government-subsidised houses. I had to take care not to reinforce the existing views of the government-subsidised section as a dirty and unruly area in my interaction with the resident participants. Being there, I was aware of my social background as a resident of the better-esteemed bonded houses. It is from this insider position that I am better equipped to interrogate the government-led narrative of Riverside as a socio-spatially integrated human settlement as detailed in Chapter 3.

Accepting our positionality as researchers arguably frees us from the feeling that we have to "be 'fair' or 'do justice' to all the data [or narratives] equally… instead, [we] should feel free to follow the stories that we are inspired to tell" (Leigh and Brown, 2021, p. 49). This, however, does not mean distorting or ignoring in any way what the data shows. While in my view Riverside is experiencing a growing waste and public space challenges, some participants appeared to see this as inconsequential or overblown. On further interaction, however, most participants seemed to accept the importance of telling the broader stories of the place, including its lived ""junk" narratives", to use MacDonald's metaphor (2017, p. 279).

In my interactions with the resident participants, I realised and embraced the importance of not being shy about my relative expertise and agenda. Hence, I honestly acknowledged my position and encouraged the resident participants to do likewise. Embracing my position also appeared to free the participants to voice and take pride in their own expert knowledge. This was particularly evident in my encounters with the gardeners. Seeing the expert manner in which gardeners cultivated and understood the diverse plant species illustrated the importance of acknowledging research participants as experts in their own experiences.

4.6. Research limitations and challenges

The first main challenge in executing this research study related to time constraints from delays in getting my ethics clearance. This had me resorting to "discount ethnography", that is, reducing the extensive interaction I had initially planned to have with the research participants (Thoring, Luippold and Mueller, 2013, p. 3). The lack of time also deprived me of the opportunity to adequately interrogate the rich contextual data I had gathered with the resident participants.

Hence, I could only do the pre- and post-activities focus group discussions. The "*Make*" toolset also required good preparatory time for them to be self-explanatory to the resident participants. I could not fully accomplish this. While some participants showed a good understanding of the "*Make*" toolset instructions together with an intrinsic interest to participate, others lacked these. This may explain why only 5 '*Make*' activities were completed at the end of the study.

Even so, the familiarity of the '*Make*' toolset items and the accompanying mundane instructions proved useful in several ways. The simplicity of the toolset opened up interesting dialogues and allowed the participants greater voice in the study's data-gathering process. According to Goopy and Kassan (2019, p. 6) allowing space for "otherness" to be and for people to "express their experiences in a nonthreatening, collective environment" is foremost in artful inquiry. The simplicity of the tools somewhat helped in this respect.

The resident participants' comments and generated '*Make*' activities showed a predominantly human-centred view of public spaces than I had planned to achieve. For instance, resident participants' diary entries depicted a mostly recreational valuation of public spaces with little regard for their educational, (artistically) inspirational dimensions. This was more the case with younger resident participants than older ones. In fact, some of the older participants explicitly voiced an educational and spiritual valuing of

public spaces which Olsen (2022, p. 315) would term an "arts of multispecies placemaking". This valuation of public spaces accounts for the human and more-than-human communities of public space users.

With a little more time available, this "arts of multispecies placemaking" perspective would have been explored further. Encounters with the diverse resident participants were on their own enriching in several ways. These encounters afforded the resident participants and I the opportunity to share our relative expertise and experiences about everyday waste and public spaces. The *'Say-Do-Make'* model, then, exemplified "transdisciplinary artful doing in a space of experimentation and imagination" (Dieleman, 2012, p. 52).

Navigating the messy terrain of trans-disciplinary artful sustainability research presented another major challenge. Efforts at negotiating the eco-cultural dimensions of sustainability issues of waste and public space practices proved theoretically and methodologically challenging. While open to allowing new issues, methods, goals and perspectives to emerge in the course of the research, I did not fully embrace emergence as integral to my research. Put simply, I did not anticipate and embrace the uncertainty and puzzlement characteristic of trans-disciplinary emergent research (Dieleman, 2012).

In many ways, puzzlement was part of this research from its conception to its conclusion. For instance, trying to understand how CAPS construes its place-making agenda as a means to embed "the role of art and culture to achieve a lasting sense of place for [communities]" largely met with puzzlement among the officials I interviewed (UN-Habitat, 2021a, p. 29). This may explain the difficulty I encountered in getting the relevant information from the official participants concerning the eco-cultural aspects of public spaces amidst the growing waste mismanagement practices in the CoJ. In fact, some of the interviews were surprisingly short and shallow, with little relevant data gathered.

Conclusion

The chapter outlined how the study was designed around the '*Say-Do-Make'* framework. A detailed analysis of what this framework constitutes and how it was utilised at different stages of the research process of interrogating the eco-cultural dimensions of waste and public spaces was presented. An analysis of the 'Make' activities; my positionality in relation to Riverside and how this shaped this study were considered. Then, the theoretical-methodological limitations and challenges encountered in carrying out this research were set out.

5. Analysis and discussion

5.1. Introduction

This chapter provides an analysis and discussion of the findings with a view to answering the research questions. It also attempts to operationalise the theoretical framework outlined in chapter two in order to map the participants' lived experiences of waste and public spaces.

I first present the approach adopted in making sense of the resident participants-produced data and the techniques used to interpret it. Secondly, I engage in a thematic analysis and discussion of the residents' experiences of waste and public space as generated through the '*Say-Do-Make*' model. Thirdly, I analyse the data from the official participants regarding efforts at embedding the arts and culture towards sustainable cities with a focus on waste and public spaces.

5.2. Making sense of experience in artful sustainability research

In artful sustainability research, participant-produced data like drawings, photos, poems and diaries are given equal values as means of expression like verbal ones (Ward and Shortt, 2020). In this study, resident participants were provided an assortment of tools to capture their experiences, beliefs and practices in textual and not-textual (visual) forms as outlined in the previous chapter.

Face-to-face focus group interviews were subsequently conducted to make sense of the participant-produced data. This interpretation approach essentially places the visual on an equal footing with verbal or textual means of communication. Ultimately, the multimodality of participant-produced data on their waste and public space experiences were subjected to multiple levels of interpretation in relation to the research questions (Leigh and Brown, 2021).

5.3. Experiences of waste and public space in Riverside

Our last collective "Say" activity (i.e. focus group discussion), presented a fine opportunity to elicit our associative thinking about the interconnected arts and cultural aspects of waste and public spaces. To do that, I resorted to a photo elicitation technique (see **Image 5.1**). This technique allowed the resident participats and I to critically interrogate the eco-cultural dimensions of local waste and public space practices portrayed by the photograph. A lively discussion ensued after RP 4 remarked:

> *This only shows the kind of society we've become… We don't care about cleanliness beyond the boundaries of our own yards.*

The resident participants and I seemed to find this short comment thought-provoking. RP 1 added that this shows the superficial division between the private and public aspects of waste and public space practices. These thoughts parallel Iqani's (2020, p. 26) argument that "rubbish transcends the boundaries between public and private at both a local and global scale". Waste, therefore, was seen to result from, or a reflection, what we do in our private houses at the global-local interface. The resident participants appeared to also recognise the prevailing culture of externalising personal waste management responsibility.

RP 4 further added that society holds a superficial idea of cleanliness. Asked to clarify his point, he pointed out that the same waste that may have been removed from sight is often returned physically or aerially by natural forces. This comment appeared to reflect what is playing out in Riverside. The waste and its negative implications are not fully confined to, using Kerber and Kramm's metaphor (2021, p. 100), the "backstage settings" of the underserviced government-subsidised sections. Natural forces such as wind and rain easily carry different kinds of waste into the "frontstage paradise" of self-standing or rent-to-buy sections of the settlement.

When probed further on the arts and cultural implications of the waste practice on public spaces portrayed in the photograph, RP 3 responded:

> *This is part of the reason I don't like visiting local parks… there's nothing exciting to do there. Plus, these spaces aren't well-maintained… I'd rather stay at home than visit public parks.*

This not only raises important questions about the place-disruptive qualities of waste but also its broader impact on people's ability to enjoy the recreational functions of public places. As waste can "shape the way places "smell, feel and sound and are experienced", RP 3's response implied waste's negative impact on her sense of place in belonging in Riverside. With respect to the spiritual functions of public space, RP 8 intriguingly commented as follows

> *This says a lot about modern culture… about how distant we have grown from our roots… where I come from, our spirituality is exercised through water, mountains, animals and plants, said RP 7*.

The resident participants seemed to recognise the various aspects of waste, such as its being a marker of cultural values. However, they were less forthcoming about other dimensions like the educational values of public spaces despite the apparent tacit knowledge of these as depicted in the resident participants' diary entries. My resorting to a photo elicitation technique was meant to trigger this latent and embodied knowledge. Consequently, some began to openly express their recognition of the formal and informally educational values of trees, insects, and other biotic species. This knowledge would likely have not been voiced through traditional 'Say' techniques like interviews. Such perceptions of public spaces were more apparent with resident gardeners and regular users of public spaces, however.

The mutually reinforcing nature of everyday waste practices and people's sense of (public) place has largely remained outside of the dominant place-

making discourse. This recalls Iqani's (, 2020, p. 33) argument that "we have yet to turn serious scholarly attention to the question of how, in our collectively mediated lives, we speak of garbage". Hence, our collective "Say" activity constituted a rare moment of interrogating this awkward subject that has arguably yet to enter critical public discourse.



Image 5.1 Waste in Riverside's Jukskei streams **Source**: Author (2023)

5.3.1. An aesthetic of playful recycling

Taking care to avoid a comfortable expert status, I consciously experimented with the '*Make*' toolset to interrogate my and others' waste and public space experience. The "help the public space" waste bag especially elicited in me a range of associative ideas about the multidimensional arts and cultural aspects of waste and public spaces. Hence, I consciously engaged in what I may term an aesthetic of playful recycling—borrowing McCracken's (2007, p. 190) notion of "aesthetics of playtime recycling". Deliberately

collecting my own vegetable and bread clips, as well as those I found in public spaces, led me to question some of my long-held perceptions of waste and public space.

Over this period, it became clear that my perceptions of recycling were shaped by the dominant economic valuation. The playful recycling activity led to a range of new perspectives and valuations beyond the dominant one. In fact, experimenting with the bread clips provided me with a range of educational and aesthetic lessons typically not associated with the taken-for-granted everyday waste practices. These are lessons usually conveyed only through disembodied "do not litter" park signage.



Image 5.2 Artistic representation of playful recycling a 'make' activity **Source**: Author (2023)

Through the playful recycling activity, waste began to take on a different meaning. My understanding of waste disposal gradually shifted towards an aesthetic realm. This was an understanding beyond the profit-centred



Image 5.3 Aestheticising domestic waste **Source**: Resident participant 9 (2023)

dominant recycling regimes based, rather, on an aesthetic of care for fellow human and non-human communities. In an urban landscape increasingly shaped by waste, I perceive playful recycling's potential to inspire a new perspective now considered urgent for a rethinking of our personal and collective relationship to waste in public space (Iqani, 2020).

As I deliberately went about collecting the clips as part of my '*Do*' activities, familiar spaces took on a defamiliarised feeling. As I surveyed and re-mapped the sites, I wondered about the invisible stories, private consumption and disposal practices embodied in the clips' presence in public spaces. Additionally, observing the birds, butterflies and other non-human communities of public space users offered me an expanded sense of space that momentarily decentered the human subjects as the sole space or place makers.

This was an expanded sense of space also accompanied by a sense of sadness and puzzlement at our mindless consumption and disposal practices. These place-disruptive practices have effectively silenced and rendered invisible the non-human communities in public spaces. Physically collecting such silenced "junk" narratives and experiencing the place-disruptive qualities of waste brought conceptual place-making closer to everyday life (MacDonald, 2017).

As a research process, going about the playful recycling provided a way to simultaneously perform my '*Say-Do-Make*' activities. **Image 5.2** (i.e. '*Make*') represents the culmination of my physically attending to ('*Do*'), and uncovering Riverside's take-for-granted waste and public place narratives ('*Say*').

One of the key revelations from this exercise was that repurposing waste artistically may open up fresh debates and perspectives. Aestheticising waste was also linked to the idea that quality eco-cultural services in Riverside are to be co-generated at the intersection of private and public waste disposal practices. Similar thoughts were voiced concerning resident-participant 3's

diary entry which invited us to consider the impact that consumer lifestyles have on the shared public spaces of Riverside.

According to this depiction, waste malpractices in Riverside's public spaces (**Image 1 in 5.3**) were partly the result of people's failure to take responsibility for their own individually generated waste (**Image 2 in 5.3**). These thoughts also relate to the idea that eco-cultural services as relational processes that do not exist a priori, but people actively create through interactions with other people and nature (Fish, Church and Winter, 2016).

5.3.2. Where have the trees gone

Riverside's predominantly denuded public spaces with scattered undergrown trees took centre stage in some of the '*Make*' and '*Say*' activities. Some of the diary portraits seemed to express concern over the dominant focus on roads and buildings as the primary elements of urban development. The focus group discussions and informal personal conversations with the resident participants were used to clarify the messages conveyed in such '*Make*' activities. Concerning the general lack of vegetation in public spaces, RP 6 narrated:

> *Just as I did, I'd like my children to have the freedom to explore nature and climb trees... beyond the confines of these playgrounds*.

Similar visual messages about the need to accommodate more trees in the built environment were found in some of the diaries. For instance, RP 7's drawing explicitly addresses these issues (**Image 5.4**). As he explained in our personal conversation:

> *Well, basically this picture is asking the question: Where have the trees gone in this area? Where are we supposed to find shade on this hot afternoon day?*

These comments hint at the levelled landscape of Riverside which may be a legacy of its farming history, as one participant remarked. In response to this, RP 7 narrated:

> *Planting grass and some trees here and there is actually like putting lipstick on a dead body.*

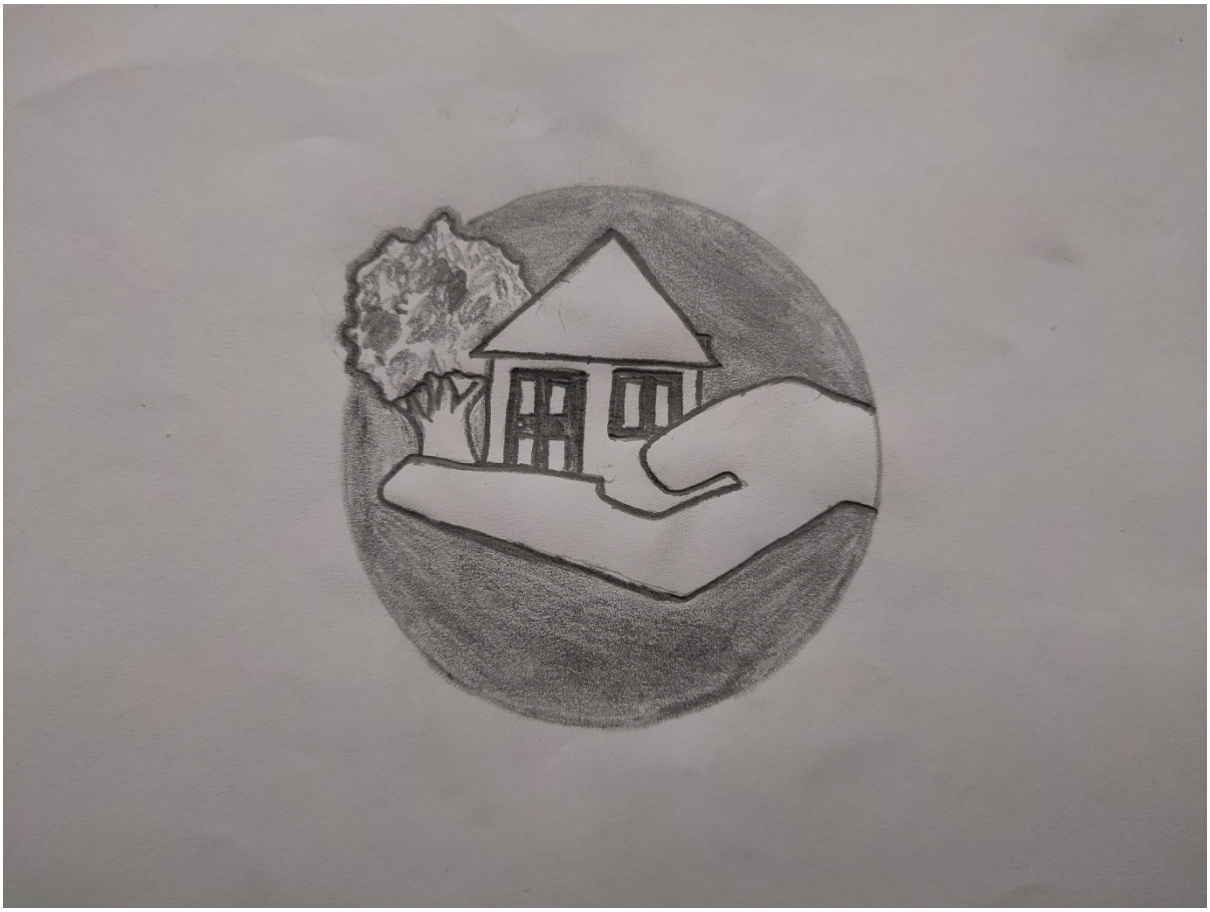


Image 5.4 Where have the trees gone? **Source**: Resident participant 7 (2023)

Image 5.4 may also speak to the resident participants' sense of diminishing contact with nature in Riverside's public spaces. It alludes to the idea of urban dwellers who increasingly experience nature as contrived urban forests. The seeming inability of the built environment to accommodate "unruly" nature is hinted at here. This speaks to the theme of place detachment not due to waste malpractices in this case, but rather, the inadequate quality of the green



Image 5.5 informal place-making practices in the bonded (above) and the state-subsidised (below) **Source**: Author 2023

public spaces. Several resident participants mention having to retreat indoors partly as a result of this.

This data hints at an "extinction of nature experience" phenomenon playing out among some resident participants (Orr and Pyle 2008, p. 213). The phenomenon sees urban dwellers retreating indoors and experiencing diminished contact with green public spaces. As indicated by the participant-produced data, waste malpractices and the inadequate quality of the green public spaces count among the main explanations. This may be construed as demonstrating a diminished experience of eco-cultural services and place dissatisfaction among some participants.

The participants' perceptions based mostly on past memories and wished-for future scenarios evince a degree of dissatisfaction with the designed public spaces. Observations during my own '*Do*' activities appear to offer concrete evidence of these assumptions. Both in the bonded and the state-subsidised sections of Riverside, residents were undertaking what could be called "social practice placemaking interventions" seemingly in response to inadequacies of the formal place-making practices (Courage, 2017b, p. 67). **Image 5.5** depicts some of the residents' grassroots spatial practices.

In SPPM, (semi)community gardens are counted as a lived artform. As RP 2 narrated, the food, flower and tree plantings is only not about vegetating Riverside's largely denatured public spaces but also about benefiting from the diverse values of trees, insects, and other biotic species. Among these, she counted the formal and informal educational and recreational values**.** Amidst the yet-to-be-realised official efforts at foresting Riverside (Steyn, 2021), the residents' SPPM interventions betray a sense of (place) dissatisfaction with the formally approved public spaces like parks.

5.4. Key findings on resident participants' entangled waste-public space experiences

Various themes emerged during this analysis about the resident participants' place-based waste and public space experiences. These themes were identified following the conceptual framework's three integrated categories of place-making as a boundary-crossing concept. I would like to remind the reader that these are not strict thematic categories given the fluid nature of waste, public space and the participants' experiences of eco-cultural services.

Various themes relating to the place-disruptive dimensions of waste malpractices on the participants' public space experiences emerged. The participants-produced visuals and the accompanying stories they told revealed a noticeable trend of diminishing contact with urban nature. Some participants explicitly attributed this to waste malpractices and others to shortcomings in the design of the urban public space like insufficient greenery and trees. The participants-produced images tended to depict scenarios different from the current state of public space, thus suggesting a degree of place detachment.

However, there were also clear indications these experiences can be uniquely place- and person-based. For instance, the resident participants of the underserved government-subsidised section appeared to recognise the place-disruptive elements of waste malpractices more than the resident participants of the other two. Individual participants showed a different recognition and awareness of the full range of potential eco-cultural services of public space in Riverside. Educational and inspirational values of public spaces were less recognised than recreational and aesthetic ones, for example.

These place and person-based findings suggest that any artful sustainability inquiry into waste and public space experiences need not seek to uncover generalisable, global or universal causes or experiences. Hence, more than

anything else, these findings are valued as personal reflections of each participant's unique past and present experiences and value systems.

5.5. Key findings on institutionalising art and culture in place-making

Part of my intentions in interviewing the CAPS officials was to understand their vision of institutionalising the arts and culture towards a cleaner and liveable city through place-making as envisioned by the UN-Habitat (2021). The interviews were set against the context of place-making's growing popularity as an arts-based strategy towards sustainable cities (Mehaffy, Haas and Elmlund, 2019). CAPS is a multi-stakeholder knowledge-exchange hub aimed at advancing expertise about African urban public spaces (CoJ, 2022).

The difficulty of institutionally integrating the eco-cultural dimensions of waste and public spaces became apparent during these "*Say*" activities. As official participants 3 pointed out:

> *You have to understand that urban public space is a multidimensional issue… and getting all relevant actors to work effectively beyond their sectoral bounds remains our biggest challenge.*

This remark appears to speak to CAPS's broad and fragmented mandate which lies at the global-local interface. This lack of clarity may derail the localisation of the global place-making agenda or its relevance to everyday waste practices at the neighbourhood level (UCLG, 2018; Croese, 2022). The hub, then, would need to make its vision clearer to its broader stakeholders if it is to halt the prevailing externalisation of blame and responsibility for the urban sustainability issues of waste and public space.

Generally, my efforts at understanding how CAPS envisions the role of art and culture amidst growing urban waste and public space malpractices in the city largely proved abortive. In most cases, the arts and culture were linked to the growing need to create jobs in the creative industry (i.e. the arts and culture sector). Official participants 3 remarked:

> *Well, you know people want to be employed… As you might have seen in different parks and squares around the city, we employ local artists to tell our stories through murals, sculpture, etc... Often, these artists use old recycled stuff which is great.*

While employment considerations are a valid consideration in the arts, economic imperatives alone do not suffice. They need to be balanced with the attendant socio-ecological concerns to ensure the city's long-term sustainability. The conceptions of art and culture gathered from the interviews align more with the static, ornamental view of art characteristic of the museums, galleries, and heritage sites.

It is unclear how institutionalising the traditional forms of art and culture may serve the practical sustainability issues of waste and public space in Riverside. While not discounting this possibility, I am inclined to see the SPPM conception of art as more attuned to the practical issues of waste and public space. SPPM emerges from the contextual issues of space and demands that its artwork be lived by its constructors (Courage, 2017b). Unlike the fragmented, place-making-plus-art, view of place-making, SPPM foregrounds relational artworks like community gardens with a view to fostering sustainable practices.

I could not get a hint that the official participants consider SPPM a form of art, culture or place-making worthy of institutionalising. Instead, the place-making agenda of the official participants draws more on the managerial urban development discourse that favours a compartmentalised view of the arts, public space, culture and sustainability. Place-making, like sustainability, does not belong to any single domain. Thus, CAPS would do well to jettison its seemingly siloed perception of place-making. Embracing place-making as a "boundary object" at the interface of the eco-cultural dimensions of waste and public space would be constructive (Enqvist *et al.*, 2018; Schrag and McKinnon, 2022).

Conclusion

The chapter began by outlining the approach adopted in making sense of the resident participants-generated data about their embodied experiences of the issues under investigation. A thematic analysis of the resident participants' experiences of waste and public spaces as generated through the '*Say-Do-Make*' tools and techniques was presented and discussed. This chapter also considered an analysis of the data generated by the officials about efforts at embedding the arts and culture through place-making interventions towards sustainable cities and communities.

6. Conclusion and recommendations

6.1. Introduction

This concluding chapter presents the research conclusions on the research questions. It first gives a brief outline of the questions the report sought to answer, before detailing the main findings on each of the sub-questions. It then makes conclusions based on these findings. Thereafter, it recommends potential areas for further research in Riverside on the eco-cultural dimensions of the sustainability issues of waste and public spaces.

6.2. Research questions and findings

This study set out to understand Riverside resident participants' experiences of the eco-cultural dimensions of waste and public space. Set against the UN-Habitat's efforts at positioning place-making as an integrative strategy towards SDG 11.6 and 11.7 implementation, I asked the following overall research question:

> How do resident participants experience the eco-cultural services of Riverside's public spaces and how are these experiences impacted by waste malpractices?

I also sought to answer the following **sub-questions**:

- What arts and cultural services of public spaces are valued by participants?
- What impact does waste in public spaces have on participants' perceptions or experiences of public spaces?
- What do participants' experiences of waste and public spaces reveal about their sense of place in Riverside?

- What gaps are identified between the theoretical concepts of place-making and Riverside resident participants' everyday lived experiences of waste and public spaces?

Valued arts and cultural services of public spaces in Riverside

Based on this study's findings, participants showed a higher valuation of the spiritual, educational and recreational functions of public spaces. Although expressing past or desired experiences of these public space functions, the RP's artistic works and comments showed desires to make spiritual and recreational use of public space than is currently possible. Riverside's water bodies like the Jukskei's tributaries were implicitly referred to concerning the spiritual functions of public spaces.

A noteworthy finding was that informal public spaces were more valued by the resident participants than the designed and officially sanctioned public spaces like parks. A possible explanation is that Riverside's parks appear to be designed with children's recreational needs in mind—considering the pre-eminence of children's playgrounds in most of the parks. Socio-demographic factors also appeared to be decisive. For instance, the formal and informally educational values of public spaces like community gardens were valued by the older and regular gardeners in particular.

Impact of waste on participants' experiences of public spaces

Waste showed a wide range of negative impacts of RP's experiences of Riverside's public space. Some participants expressed the disruptive qualities of waste on their ability to access cultural services like the streams for spiritual purposes. Cleanliness was a noteworthy area of concern for participants. Not only did the resident participants lament the cultural values responsible for the waste mismanagement practices, they also expressed waste to be among the chief reasons they avoid public spaces.

This is particularly concerning given the socio-economic and ecological potentials of public spaces. The findings suggest that the global efforts at

positioning place-making as a strategy towards SDG 11 implementation truly need to pay special attention to targets 11.6 and 11.7, respectively. These targets focus on reducing the negative impacts of waste and ensuring universal access to quality public spaces. Another issue worth paying attention to is the prevailing culture of mindless disposal that a growing number of scholars believe the arts could play a role in transforming (see Kagan, 2012; Merrick, 2012; Duxbury, 2019).

Waste and public spaces and participants' sense of place

Sense of place or belonging is a key characteristic of both place-making and the arts and cultural (ecosystem) services. Overall, the resident participants perceive and experience the place-disruptive impacts of waste on public spaces differently. While not uniform, the research findings indicate that public spaces are generally experienced and perceived negatively. Based on personal conversations and artistic productions, the resident participants generally expressed dissatisfaction with the designed public spaces like parks, among other reasons, owing to:

- Ill-designed or inadequately maintained parks, streams, or the broader green infrastructure
- A general inadequacy of vegetation in public spaces
- Waste disposal and burning in public spaces

From a waste and public space standpoint, the study found RP to experience a general sense of place detachment. As discovered in the participants' make activities, their fondest public space experiences are from other places or wished-for future scenarios.

6.3. From theory to practical place-making in Riverside

Another question that this research wanted to answer concerns the theory-practice gaps in place-making studies. This is not meant to be a thorough assessment of all the gaps identified, but rather, to point out some

noteworthy aspects that I found instructive regarding the theory-practice gaps in place-making based on the empirical findings in Riverside. These considerations are also meant to help other researchers interested in similar topics and improve knowledge creation in this field of study.

Studying a predominantly theory-based and multidimensional concept like place-making required that I occasionally suspend my preconceived theoretical notions of what place-making is, and study it in situ. This mindset was useful considering this research's focus on Riverside residents' embodied experiences of the eco-cultural dimensions of waste and public space. A noteworthy theory-practice gap finding concerns the global efforts at ensuring that "placemaking institutionalizes the role of art and culture to achieve a lasting sense of place for [communities]" (UN-Habitat, 2021a, p. 29).

A key finding concerning this is that the gap between the theory of institutionalising place-making and practice remains big. The dominant conceptions of art and culture associated with place-making have little practical relevance to the eco-cultural dimension of urban sustainability issues of waste and public space. This occurs amidst faltering efforts at positioning place-making as a "boundary object" at the interface of the eco-cultural dimensions of waste and public space for diverse communities of practice.

Ultimately, researchers need to embrace the idea that place-making is studied and achieved in practice. Place-making should also be studied holistically, that is, as ever in the process of becoming. Hence, researchers should be open to the possibility that place-making may not issue in the residents' sense of place, but rather, place detachment owing to place-disruptive practices like waste in public spaces (Ellery and Ellery, 2019; Brown *et al.*, 2020). Ultimately, interrogating everyday practices like waste and public space practice is at the core of artful sustainability inquiry.

6.4. Concluding remarks and potential areas for research in Riverside

The study set out to understand Riverside residents' experiences of the eco-cultural dimensions of sustainability issues of waste and public space. Based on the findings outlined above, the research concludes that public spaces are mostly perceived and experienced poorly and waste in public spaces counts among the chief contributing factors. While these experiences were not uniform across all participants from the three property typologies, none of these voices satisfaction with their current experiences of waste and public space in Riverside.

A worthy candidate for further research concerning the arts and cultural aspects of waste and public space in Riverside concerns the establishment of the knowledge hub, CAPS in 2020. This study's attempts at ascertaining how the hub perceives its place-making mandate in relation to the eco-cultural dimensions of waste and public space in areas like Riverside largely drew a blank. Establishing its social relevance to the practical sustainability issues of waste and public space will doubtless help CAPS serve the global efforts at localising SDG 11.6 and 11.7.

Reference:

Akkerman, S.F. and Bakker, A. (2011) 'Boundary Crossing and Boundary Objects', *Review of Educational Research*, 81(2), pp. 132–169. Available at: https://doi.org/10.3102/0034654311404435.

Asikainen, S. *et al.* (eds) (2017) *Culture in sustainability: towards a transdisciplinary approach*. Jyväskylä, Finland: SoPhi.

Averchenkova, A., Gannon, K.E. and Curran, P. (2019) *Governance of climate change policy: A case study of South Africa*. Grantham Research Institute. Available at: http://rgdoi.net/10.13140/RG.2.2.23403.49443 (Accessed: 5 August 2021).

Badenhorst, B. (2018) 'Raubex completes RDP multi-storeys at Riverside View'. Available at: https://www.concretetrends.co.za/news/raubex-completes-rdp-multi-storeys-at-riverside-view/ (Accessed: 14 October 2023).

Ballard, R. (2017) 'Prefix as policy: Megaprojects as South Africa's big idea for human settlements', *Transformation: Critical Perspectives on Southern Africa*, 95(1), pp. i–xviii.

Ballard, R., Hamann, C. and Mkhize, T. (2021) 'Johannesburg: Repetitions and Disruptions of Spatial Patterns', in A. Lemon, R. Donaldson, and G. Visser (eds) *South African Urban Change Three Decades After Apartheid*. Cham: Springer International Publishing (GeoJournal Library), pp. 35–55. Available at: https://doi.org/10.1007/978-3-030-73073-4_3.

Bals, L., Tate, W.L. and Ellram, L.M. (eds) (2022) *Circular economy supply chains: from chains to systems*. First edition. Bingley: Emerald Publishing.

Bénit-Gbaffou, C. (2002) 'The Rise or Fall of the "Community"? Post-apartheid housing policy in Diepsloot, Johannesburg', *Urban Forum*, 13(2), pp. 47–66.

Bénit-Gbaffou, C. (2018) 'Why is Co-management of Parks Not Working in Johannesburg?', in C. Ammann and T. Förster (eds) *African cities and the development conundrum*. Leiden ; Boston: Brill Nijhoff (International development policy, Volume 10), pp. 101–135.

Bennett, J. (2014) 'Researching the Intangible: A Qualitative Phenomenological Study of the Everyday Practices of Belonging', *Sociological Research Online*, 19(1), pp. 67–77. Available at: https://doi.org/10.5153/sro.3187.

Bentz, J. (2020) 'Learning about climate change in, with and through art', *Climatic Change*, 162(3), pp. 1595–1612. Available at: https://doi.org/10.1007/s10584-020-02804-4.

Berleant, A. (2010) *Sensibility and sense: the aesthetic transformation of the human world*. Exeter: Imprint academic (St Andrews studies in philosophy and public affairs).

Bishop, C. (2012) *Artificial hells: participatory art and the politics of spectatorship*. London New York: Verso Books.

Bradley, K. and Persson, O. (2022) 'Community repair in the circular economy – fixing more than stuff', *Local Environment*, 27(10–11), pp. 1321–1337. Available at: https://doi.org/10.1080/13549839.2022.2041580.

Brears, R.C. (2020) *Nature-based solutions to 21st century challenges*. Abingdon, Oxon ; New York, NY: Routledge.

Brown, J.A. *et al.* (2020) 'Influences of Environmental and Social Factors on Perceived Bio-Cultural Services and Disservices', *Frontiers in Ecology and Evolution*, 8, p. 569730. Available at: https://doi.org/10.3389/fevo.2020.569730.

Carlile, P.R. (2002) 'A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development', *Organization science*, 13(4), pp. 442–455.

Casey, B. and Murray, M. (2022) 'Arts-based Research in the Social Sciences', in U. Flick (ed.) *The SAGE handbook of qualitative research design*. Los Angeles London New Delhi Singapore Washington DC Melbourne: SAGE reference, pp. 517–534.

Charlton, S. (2017) 'Poverty, subsidised housing and Lufhereng as a prototype megaproject in Gauteng', *Transformation: Critical Perspectives on Southern Africa*, 95(1), pp. 85–110.

Cilliers, S.S. *et al.* (2018) 'Managing urban green spaces for biodiversity conservation: An African perspective', in A. Ossola and J. Niemelä (eds) *Urban biodiversity: from research to practice*. London ; New York: Routledge, Taylor & Francis Group (Routledge studies in urban ecology), pp. 167–185.

City of Joburg (2002) *Joburg Metropolitan Open Space System*. Johannesburg, South Africa. Available at: https://studylib.net/viewer_next/web/study?file=%2F%2Fs3p.studylib.net%2Fstore%2Fdata%2F008516549.pdf%3Fk%3DAwAAAYg97D1hAAACWMW4tXSdXi0ZAasnpCK8bfLygq9F&img=%2F%2Fs3.studylib.net%2Fstore%2Fdata%2F008516549_1-3f88d246a8304cc56e834d3415896452.png#page=1&zoom=auto,-43,851 (Accessed: 20 May 2023).

City of Joburg (2016) *Spatial Development Framework 2040: City of Johannesburg Metropolitan Municipality*. Johannesburg, South Africa. Available at: https://unhabitat.org/sites/default/files/download-manager-files/SDF%20JOHANNESBURG.pdf (Accessed: 20 May 2023).

City of Joburg (2019) 'Impressive Progress at Riverside View Housing Project'. Available at: https://www.joburg.org.za/media_/Pages/Media/Media%20Statements/2019%20Media%20Statements/2019%20August/Impressive-progress-at-Riverside-View-Housing-project.aspx.

City of Joburg (2022) 'City Sets out to Break Barriers across The African Continent'. Available at: https://www.joburg.org.za/media_/Newsroom/Pages/2022%20News%20Articles/July/City-sets-out-to-break-barriers.aspx#:~:text=City%20sets%20out%20to%20break%20barriers%20across%20the%20African%20continent&text=%E2%80%8BThe%20City%20of%20Johannesburg,the%20World%20Urban%20Forum%20recently. (Accessed: 8 June 2023).

City of Johannesburg (2021) *Climate Action Plan*. Johannesburg, South Africa. Available at: https://www.joburg.org.za/departments_/Documents/EISD/City%20of%20Johannesburg%20-%20Climate%20Action%20Plan%20%28CAP%29.pdf (Accessed: 20 April 2023).

Cobbinah, P.B. and Addaney, M. (eds) (2019) *The Geography of Climate Change Adaptation in Urban Africa*. Cham: Springer International Publishing. Available at: https://doi.org/10.1007/978-3-030-04873-0.

Coghlan, D. and Brydon-Miller, M. (eds) (2014) *The Sage encyclopedia of action research*. Thousand Oaks, California: SAGE Publications, Inc.

Courage, C. (2015a) 'Architecture with Society: social practice placemaking and architecture in the public realm: a Dublin case study', in *All-Ireland Architechture Research Group*. Dublin, Ireland.

Courage, C. (2015b) 'Moving beyond creative placemaking: the micropublic of a social practice placemaking project', in. *Association of American Geographers annual meeting*, University of Brighton.

Courage, C. (2017a) 'Art practice, process, and new urbanism in Dublin: Art Tunnel Smithfield and social practice placemaking in the Irish capital', *Irish Journal of Arts Management and Cultural Policy*, 4(1), pp. 2–13.

Courage, C. (2017b) *Arts in place: the arts, the urban and social practice*. London ; New York: Routledge, Taylor & Francis Group (Routledge research in culture, space and identity).

Courage, C. *et al.* (eds) (2021) *The Routledge handbook of placemaking*. London New York: Routledge, Taylor & Francis Group (Routledge International Handbooks).

Courage, C. (2021) 'What really matters: moving placemaking into a new epoch', in C. Courage et al. (eds) *The Routledge handbook of placemaking*. London New York: Routledge, Taylor & Francis Group (Routledge International Handbooks), pp. 1-g8.

Crabtree, A. *et al.* (2003) 'Using Probes as Exploratory Devices in Care Settings', in. *Proceedings of the Eighth European Conference of Computer-Supported Cooperative Work*, pp. 1–19.

Croese, S. (2022) 'Toward an Embedded, Integrated, and Collaborative Approach to SDG Localization in African Cities', in S. Croese and S. Parnell (eds) *Localizing the SDGs in African Cities*. Cham: Springer International Publishing (Sustainable Development Goals Series), pp. 1–11. Available at: https://doi.org/10.1007/978-3-030-95979-1_1.

Dai, P. *et al.* (2022) 'Assessing the inspirational value of cultural ecosystem services based on the Chinese poetry', *Acta Ecologica Sinica*, 42(5), pp. 467–475. Available at: https://doi.org/10.1016/j.chnaes.2021.09.013.

Department of Cooperative Governance and Traditional Affairs (2016) *The Integrated Urban Development Framework: A New Deal for South African Cities and Towns*. Pretoria, South Africa. Available at:

https://www.africancentreforcities.net/wp-content/uploads/2017/05/IUDF-2016_WEB-min.pdf (Accessed: 20 April 2023).

Department of Environment, Forestry & Fisheries (2020) *National Waste Management Strategy 2020*. Pretoria, South Africa. Available at: https://www.dffe.gov.za/sites/default/files/docs/2020nationalwaste_managementstrategy1.pdf (Accessed: 3 October 2023).

Department of Environmental Affairs (2014) *Environmental Protection and Infrastructure Programmes: 15 Years of Innovative Environmental Protection and Job Creation: 1999 - 2014*. Pretoria, South Africa: Department of Environmental Affairs. Available at: https://www.dffe.gov.za/sites/default/files/reports/epip15years_review.pdf (Accessed: 3 October 2023).

Department of Forestry, Fisheries and the Environment (2015) *Minister Edna Molewa's keynote address during the National Waste Management Summit | Department of Environmental Affairs*. Available at: https://www.dffe.gov.za/speech/molewa_onnationalwastemanagementsummit (Accessed: 12 March 2023).

Department of Human Settlements (2019) *Public open space: The Neighbourhood Planning and Design Guide*. Pretoria, South Africa. Available at: https://www.dhs.gov.za/sites/default/files/u16/REDBOOK_Section_G_OpenSpace_v1.pdf (Accessed: 20 May 2023).

Department of Public Works and Infrastructure (2019) *Expanded Public Works Programme (EPWP) Phase Iv Business Plan 2019 – 2024*. Available at: http://www.epwp.gov.za/documents/Cross_Cutting/Monitoring%20and%20Evaluation/EPWP_PhaseIV_Business_Plan_2019-2024.pdf (Accessed: 25 May 2022).

Dessein, J. *et al.* (eds) (2015) *Culture in, for and as sustainable development: Conclusions from the COST Action IS1007 Investigating Cultural Sustainability*. Jyväskylä, Finland: COST European Cooperation in Science and Technology : University of Jyväskylä.

Di Masso, A., Dixon, J. and Hernández, B. (2017) 'Place Attachment, Sense of Belonging and the Micro-Politics of Place Satisfaction', in G. Fleury-Bahi, E. Pol, and O. Navarro (eds) *Handbook of Environmental Psychology and Quality of Life Research*. Cham: Springer International Publishing (International Handbooks of Quality-of-Life), pp. 85–104. Available at: https://doi.org/10.1007/978-3-319-31416-7_5.

Dieleman, H. (2012) 'Transdisciplinary Artful Doing in Spaces of Experimentation and Imagination', *Transdisciplinary Journal of Engineering & Science*, 3, pp. 44–57. Available at: https://doi.org/10.22545/2012/00028.

Duxbury, N. (2019) *Thoughts on future directions: Art and culture in transformations toward greater sustainability*. Heng Mui Keng Terrace, Singapore: Asia-Europe Foundation, pp. 9–14. Available at: https://estudogeral.uc.pt/bitstream/10316/87560/1/Thoughts%20on%20future%20directions.pdf (Accessed: 15 August 2023).

Ellery, P.J. and Ellery, J. (2019) 'Strengthening Community Sense of Place through Placemaking', *Urban Planning*, 4(2), pp. 237–248. Available at: https://doi.org/10.17645/up.v4i2.2004.

Enqvist, J.P. *et al.* (2018) 'Stewardship as a boundary object for sustainability research: Linking care, knowledge and agency', *Landscape and Urban Planning*, 179, pp. 17–37. Available at: https://doi.org/10.1016/j.landurbplan.2018.07.005.

Erfani, G. (2022) 'Reconceptualising Sense of Place: Towards a Conceptual Framework for Investigating Individual-Community-Place Interrelationships', *Journal of Planning Literature*, 37(3), pp. 452–466. Available at: https://doi.org/10.1177/08854122221081109.

Fish, R., Church, A. and Winter, M. (2016) 'Conceptualising cultural ecosystem services: A novel framework for research and critical engagement', *Ecosystem Services*, 21, pp. 208–217. Available at: https://doi.org/10.1016/j.ecoser.2016.09.002.

Goopy, S. and Kassan, A. (2019) 'Arts-Based Engagement Ethnography: An Approach for Making Research Engaging and Knowledge Transferable When Working With Harder-to-Reach Communities', *International Journal of Qualitative Methods*, 18, p. 160940691882042. Available at: https://doi.org/10.1177/1609406918820424.

Gordon, E., Davila, F. and Riedy, C. (2022) 'Transforming landscapes and mindscapes through regenerative agriculture', *Agriculture and Human Values*, 39(2), pp. 809–826. Available at: https://doi.org/10.1007/s10460-021-10276-0.

Gottwald, S., Albert, C. and Fagerholm, N. (2022) 'Combining sense of place theory with the ecosystem services concept: empirical insights and reflections from a participatory mapping study', *Landscape Ecology*, 37(2), pp. 633–655. Available at: https://doi.org/10.1007/s10980-021-01362-z.

Grenni, S., Soini, K. and Horlings, L.G. (2020) 'The inner dimension of sustainability transformation: how sense of place and values can support sustainable place-shaping', *Sustainability Science*, 15(2), pp. 411–422. Available at: https://doi.org/10.1007/s11625-019-00743-3.

Guo, R.-Z., Song, Y.-B. and Dong, M. (2022) 'Progress and Prospects of Ecosystem Disservices: An Updated Literature Review', *Sustainability*, 14(16), p. 10396. Available at: https://doi.org/10.3390/su141610396.

Hahn, J. (2010) 'Creative Cities and (Un)Sustainability – Cultural Perspective', in. (Cultura21 eBooks Series on Culture and Sustainability). Available at: https://www.cultura21.net/wp-content/uploads/2011/01/Julia-Hahn-c21-ebook-vol3.pdf (Accessed: 14 August 2023).

Haley, D. (2010) 'Ecology and the Art of Sustainable Living', *Ecology Field Journal*, 4(1).

Hawkes, J. (2003) *The fourth pillar of sustainability: culture's essential role in public planning*. Victoria: Cultural Development Network.

Hawkins, G. (2006) *The Ethics of Waste: How We Relate to Rubbish*. Sydney, Australia: Rowman & Littlefield Publishers, Inc.

Hedley, L. (2022) 'How to adopt an illegal dumping site'. Available at: http://www.pikitup.co.za/how-to-adopt-an-illegal-dumping-site/how-to-adopt-an-illegal-dumping-site-3-1/ (Accessed: 10 March 2023).

Heinrichs, H. and Kagan, S. (2019) 'Artful and Sensory Sustainability Science: Exploring Novel Methodological Perspectives', *Revista de Gestão Ambiental e Sustentabilidade*, 8(3). Available at: https://doi.org/10.5585/geas.v8i3.15734.

Heras, M. *et al.* (2021) 'Realising potentials for arts-based sustainability science', *Sustainability Science*, 16(6), pp. 1875–1889. Available at: https://doi.org/10.1007/s11625-021-01002-0.

Herrmann-Pillath, C. *et al.* (2023) 'Nature-based solutions as more-than-human art: Co-evolutionary and co-creative design approaches', *Nature-Based Solutions*, 4, p. 100081. Available at: https://doi.org/10.1016/j.nbsj.2023.100081.

Hesse-Biber, S.N. and Leavy, P. (2008) 'Pushing on the Methodological Boundaries: The Growing Need for Emergent Methods within and across the Disciplines', in S.N. Hesse-Biber and P. Leavy (eds) *Handbook of emergent methods*. New York: Guilford Press, pp. 1–15.

Iqani, M. (2020) *Garbage in popular culture: consumption and the aesthetics of waste*. Albany: SUNY Press.

Iqani, M. (2021) *Background to the Jukskei, Water for the Future*. Available at: https://www.waterforthefuture.co.za/background-to-the-jukskei (Accessed: 28 February 2023).

Johal, R.K. and Kaur, A. (2020) 'Local Governance for Sustainable Solid Waste Management: A Case Study of Chandigarh (Union Territory), India', in S.K. Ghosh (ed.) *Sustainable Waste Management: Policies and Case Studies*. Singapore: Springer Singapore, pp. 91–105. Available at: https://doi.org/10.1007/978-981-13-7071-7_8.

Kagan, S. (2011a) 'Aesthetics of Sustainability: A Transdisciplinary Sensibility for Transformative Practices', *Transdisciplinary Journal of Engineering & Science*, 2. Available at: https://doi.org/10.22545/2011/00014.

Kagan, S. (2011b) *Art and sustainability: connecting patterns for a culture of complexity*. Bielefeld : New Brunswick, U.S.A: Transcript ; [Distributed by] Transaction Publishers (Image, v. 25).

Kagan, S. (2012) *Toward global (environ)mental change: transformative art and cultures of sustainability*. Berlin: Heinrich-Böll-Stiftung (Publication series on ecology, 20).

Kagan, S. (2017) 'Artful Sustainability: Queer-Convivialist Life-Art and the Artistic Turn in Sustainability Research', *Transdisciplinary Journal of Engineering & Science*, 8(1). Available at: https://doi.org/10.22545/2017/00092.

Kagan, S. (2019) 'Artful Sustainability in Transdisciplinary Spaces of Possibilities', *Transdisciplinary Journal of Engineering & Science*, 10. Available at: https://doi.org/10.22545/2019/0117.

Kagan, S. and Hahn, J. (2011) 'Creative Cities and (Un)Sustainability: From Creative Class to Sustainable Creative Cities', *Culture and Local Governance*, pp. 11–27. Available at: https://doi.org/10.18192/clg-cgl.v3i1.182.

Kaprow, A. and Kelley, J. (2003) *Essays on the blurring of art and life*. Expanded ed., [Nachdr.]. Berkeley, Calif.: University of California Press.

Kerber, H. and Kramm, J. (2021) 'On- and offstage: Encountering entangled waste–tourism relations on the Vietnamese Island of Phu Quoc', *The Geographical Journal*, 187(2), pp. 98–109.

Kountouris, Y. (2022) 'The influence of local waste management culture on individual recycling behavior', *Environmental Research Letters*, 17(7), pp. 1–14. Available at: https://doi.org/10.1088/1748-9326/ac7604.

Küpers, W. (2016) 'Phenomenology of embodied and artful design for creative and sustainable inter-practicing in organisations', *Journal of Cleaner Production*, 135, pp. 1436–1445. Available at: https://doi.org/10.1016/j.jclepro.2016.07.088.

Landman, K. (2020) 'Gated Communities in South Africa: An Emerging Paradox', in R. Massey and A. Gunter (eds) *Urban geography in South Africa: perspectives and theory*. Cham, Switzerland: Springer (GeoJournal library), pp. 55–74.

Langemeyer, J. and Gómez-Baggethun, E. (2018) 'Urban Biodiversity and Ecosystem Services', in A. Ossola and J. Niemelä (eds) *Urban biodiversity: from research to practice*. London New York: Routledge (Routledge studies in urban ecology), pp. 36–53.

Lau, J.C.-H. (2022) 'Towards a care perspective on waste: A new direction in discard studies', *Environment and Planning C: Politics and Space*, 0(0), pp. 1–17. Available at: https://doi.org/10.1177/23996544211063383.

Leavy, P. (2020) *Method meets art: arts-based research practice*. Third edition. New York: The Guilford Press.

Lee, K.E. and Kendal, D. (2018) 'Managing Biodiversity Through Social Values and Preferences', in A. Ossola and J. Niemelä (eds) *Urban biodiversity: from research to practice*. London New York: Routledge (Routledge studies in urban ecology), pp. 121–133.

Leigh, J. and Brown, N. (2021) *Embodied inquiry: research methods*. London ; New York: Bloomsbury Academic (Bloomsbury research methods).

Lephondo, D. (2021) *Have Mega Projects Achieved What They Have Set Out To Do? A Case Study of Savanna City*. Thesis. University of the Witwatersrand. Available at: https://wiredspace.wits.ac.za/server/api/core/bitstreams/ae481333-25de-4937-95c4-dcf28e95d0bb/content (Accessed: 14 April 2023).

Letaba Herald (2016) *Process to rehabilitate Joburg's watercourses under way*. Available at: https://letabaherald.co.za/lnn/217944/process-to-rehabilitate-joburgs-watercourses-under-way/ (Accessed: 10 March 2023).

Loh, C.G. *et al.* (2022) 'Placemaking in Practice: Municipal Arts and Cultural Plans' Approaches to Placemaking and Creative Placemaking', *Journal of Planning*

Education and Research, p. 0739456X2211005. Available at: https://doi.org/10.1177/0739456X221100503.

Lyytimäki, J. *et al.* (2008) 'Nature as a nuisance? Ecosystem services and disservices to urban lifestyle', *Environmental Sciences*, 5(3), pp. 161–172. Available at: https://doi.org/10.1080/15693430802055524.

Lyytimäki, J. and Sipilä, M. (2009) 'Hopping on one leg – The challenge of ecosystem disservices for urban green management', *Urban Forestry & Urban Greening*, 8(4), pp. 309–315. Available at: https://doi.org/10.1016/j.ufug.2009.09.003.

MacDonald, S. (2017) 'The city (as) place: Performative remappings of urban space through artistic research', in A. Arlander et al. (eds) *Performance as research: knowledge, methods, impact*. First edition. New York: Routledge, pp. 275–296.

Malpass, M. (2019) *Critical Design in Context: History, Theory, and Practices*. New York, United States of America: Bloomsbury Academic.

Martínez, F. (2017) 'Waste is not the end. For an anthropology of care, maintenance and repair', *Social Anthropology*, 25(3), pp. 346–350. Available at: https://doi.org/10.1111/1469-8676.12436.

Matos, S. *et al.* (2022) 'Cultural probes for environmental education: Designing learning materials to engage children and teenagers with local biodiversity', *PLOS ONE*. Edited by P.T. Sano, 17(2), p. e0262853. Available at: https://doi.org/10.1371/journal.pone.0262853.

McCracken, J. (2007) 'The Aesthetics of Playtime Recycling', in A. Berleant and A. Carlson (eds) *The aesthetics of human environments*. Peterborough (Ont.): Broadview press, pp. 190–202.

McLaren, D., Niskanen, J. and Anshelm, J. (2020) 'Reconfiguring repair: Contested politics and values of repair challenge instrumental discourses found in circular economies literature', *Resources, Conservation & Recycling: X*, 8, pp. 1–11. Available at: https://doi.org/10.1016/j.rcrx.2020.100046.

Mehaffy, M.W., Haas, T. and Elmlund, P. (2019) 'Public Space in the New Urban Agenda: Research into Implementation', *Urban Planning*, 4(2), pp. 134–137. Available at: https://doi.org/10.17645/up.v4i2.2293.

Mehring, M. *et al.* (2021) 'Urban Social Ecology', in C.M. Shackleton et al. (eds) *Urban Ecology in the Global South*. Cham: Springer International Publishing (Cities and Nature), pp. 79–105. Available at: https://doi.org/10.1007/978-3-030-67650-6_4.

Meireis, T. and Rippl, G. (eds) (2019) *Cultural sustainability: perspectives from the humanities and social sciences*. Abingdon, Oxon ; New York, NY: Routledge is an imprint of the Taylor & Francis Group, an Informa Business (Routledge environmental humanities).

Merrick, K. (2012) 'The Power of Art to Engage the Public on the Impacts of Climate Change on the Coast'. Coastal Collaboration Cluster. Available at: https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=3c4a74a18b97080315bd27333b5d1b37a94bce4f (Accessed: 9 December 2023).

Michèle, F.P. *et al.* (2017) 'The Gauteng Conservation Plan: Planning for biodiversity in a rapidly urbanising province', *Bothalia*, 47(2). Available at: https://journals.abcjournal.aosis.co.za/index.php/abc/article/view/2182 (Accessed: 26 March 2023).

Millennium Ecosystem Assessment (ed.) (2005) *Ecosystems and human well-being: synthesis*. Washington, DC: Island Press.

Mji, Z. (2018) '"Those graves were our title deeds"', *Mail & Guardian*. Available at: https://mg-co-za.cdn.ampproject.org/v/s/mg.co.za/article/2018-04-18-those-graves-were-our-title-deeds/?amp=&amp_gsa=1&amp_js_v=a9&usqp=mq331AQIUAKwASCAAgM%3D#amp_tf=From%20%251%24s&aoh=16830074858245&csi=1&referrer=https%3A%2F%2Fwww.google.com&ampshare=https%3A%2F%2Fmg.co.za%2Farticle%2F2018-04-18-those-graves-were-our-title-deeds%2F (Accessed: 14 April 2023).

Mreiwed, H. *et al.* (eds) (2023) *Making Connections in and Through Arts-Based Educational Research*. Singapore: Springer Nature Singapore (Studies in Arts-Based Educational Research). Available at: https://doi.org/10.1007/978-981-19-8028-2.

Muhammad, M. *et al.* (2015) 'Reflections on Researcher Identity and Power: The Impact of Positionality on Community Based Participatory Research (CBPR) Processes and Outcomes', *Critical Sociology*, 41(7–8), pp. 1045–1063. Available at: https://doi.org/10.1177/0896920513516025.

Muhr, M.M. (2020) 'Beyond words – the potential of arts-based research on human-nature connectedness', *Ecosystems and People*, 16(1), pp. 249–257. Available at: https://doi.org/10.1080/26395916.2020.1811379.

Olsen, C.S. (2022) 'Co-Creation Beyond Humans: The Arts of Multispecies Placemaking', *Urban Planning*, 7(3). Available at: https://doi.org/10.17645/up.v7i3.5288.

Oluwatoyin, T., Otieno, F. and Venter, C. (2008) 'Towards Attaining the Polokwane Waste Reduction Goals - where are we?', *Town and Regional Planning*, (53), pp. 25–31.

Orr, D. and Pyle, R.M. (2008) 'The Extinction of Natural Experience in the Built Environment', in S.R. Kellert, J. Heerwagen, and M. Mador (eds) *Biophilic design: the theory, science, and practice of bringing buildings to life*. Hoboken, N.J: Wiley, pp. 213–223.

Parameswara, A. and Utama, M.S. (2020) 'Exploring the approaches of culture on sustainable development', *South East Asia Journal of Contemporary Business, Economics and Law*, 21(5), p. .177-185.

Pariatamby, A., Bhatti, M.S. and Hamid, F.S. (2020) 'Waste Management in Developing Countries: An Overview', in A. Pariatamby, F. Shahul Hamid, and M.S. Bhatti (eds) *Advances in Environmental Engineering and Green Technologies*. IGI Global, pp. 494–519. Available at: https://doi.org/10.4018/978-1-7998-0198-6.ch020.

Pearson, K.R. *et al.* (2018) *Arts-Based Methods for Transformative Engagement: A Toolkit*. Wageningen: SUSPLACE.

Pongoma, L. (2018) *Riverside View Mega City is the new beginning to Gauteng's densification projects*. Sunnyside, Pretoria: Department of Human Settlements, pp. 24–25. Available at: https://www.dhs.gov.za/sites/default/files/u16/EDITION%2003_WV%2007-05_REDUCED.pdf (Accessed: 14 April 2023).

Potschin, M. *et al.* (eds) (2016) *Routledge handbook of ecosystem services*. London ; New York: Routledge, Taylor & Francis Group.

Prawata, A.G. (2020) 'Playful urban intervention as creative placemaking strategy in Jakarta', *IOP Conference Series: Earth and Environmental Science*, 426(1), p. 012083. Available at: https://doi.org/10.1088/1755-1315/426/1/012083.

Ramani, S.V. and Hettiarachchi, H. (2022) *SDG 11, Sustainable Cities and Communities: Moving Forward with the Circular Economy*. 1st edn. London: Routledge India. Available at: https://doi.org/10.4324/9781003205975.

Raven, P.G. (2021) 'Experts in their own tomorrows: Placemaking for participatory climate futures', in C. Courage et al. (eds) *The Routledge handbook of placemaking*. London New York: Routledge, Taylor & Francis Group (Routledge International Handbooks), pp. 148–158.

Samson, M. *et al.* (2020) *Lessons from Waste Picker Integration Initiatives: Development of Evidence Based Guidelines to Integrate Waste Pickers into South African Municipal Waste Management Systems*. Johannesburg, South Africa: Department of Science and Innovation. Available at: http://wasteroadmap.co.za/wp-content/uploads/2020/03/1-Wits_Final_Report_Johannesburg-Technical-Report.pdf (Accessed: 14 April 2023).

Sanders, E.B.-N. (2002) 'From user-centered to participatory design approaches', in J. Frascara (ed.) *Design and the Social Sciences*. London and New York: CRC Press (Contemporary Trends Institute Series), pp. 18–25. Available at: https://doi.org/10.1201/9780203301302.ch1.

Sanders, E.B.-N. and Stappers, P.J. (2012) *Convivial toolbox: Generative research for the front end of design*. Bis.

Sanders, E.B.-N. and Stappers, P.J. (2014) 'Probes, toolkits and prototypes: three approaches to making in codesigning', *CoDesign*, 10(1), pp. 5–14.

Saunders, M.N.K., Lewis, P. and Thornhill, A. (2019) *Research methods for business students*. Eighth Edition. New York: Pearson.

Schrag, A. and McKinnon, C. (2022) 'Exploring the boundary-crossing nature of "Creative Placemaking": The Stove as "adaptor/converter"', *FIELD: A Journal of Socially-Engaged Art Criticism*, pp. 1–18.

Schwanen, T. and Kempen, R. van (eds) (2019) *Handbook of urban geography*. Cheltenham, UK ; Northampton, MA, USA: Edward Elgar Publishing (Research handbooks in geography).

Sepp, H.R. and Embree, L. (eds) (2010) *Handbook of phenomenological aesthetics*. Dordrecht ; New York: Springer (Contributions to phenomenology, v. 59).

Sholette, G., Bass, C. and Social Practice Queens (eds) (2018) *Art as social action: an introduction to the principles and practices of teaching social practice art*. New York, New York: Allworth Press, An Imprint of Skyhorse Publishing, Inc.

Singh, R.P.B., Niglio, O. and Rana, P.S. (2023) 'Interfaces Among Placemaking and Cultural Landscapes: Review and Appraisal', in R.P.B. Singh, O. Niglio, and P.S. Rana (eds) *Placemaking and Cultural Landscapes*. Singapore: Springer Nature Singapore (Advances in Geographical and Environmental Sciences), pp. 3–21. Available at: https://doi.org/10.1007/978-981-19-6274-5_1.

Sithole, K. (2023) 'New Road in the Final Stages', *Riverside Outpost*, February. Available at: https://www.riversideoutpost.co.za/post/new-road-in-the-final-stages.

Soini, K. and Birkeland, I. (2014) 'Exploring the scientific discourse on cultural sustainability', *Geoforum*, 51, pp. 213–223. Available at: https://doi.org/10.1016/j.geoforum.2013.12.001.

South African Cities Network (2020) *The State of the Expanded Public Works Programme in South African Cities 2019/20*. Johannesburg. Available at: https://www.sacities.net/wp-content/uploads/2021/06/EPWP_AR_pages_2808_WEB.pdf (Accessed: 8 February 2021).

South African Planning Institute (2016) *7th Planning Africa Conference 2016: Making Sense of the Future*. Johannesburg, South Africa. Available at: https://www.academia.edu/43793489/Making_Sense_of_the_Future_Planning_Africa_2016_Disruption_and_Reinvention_CONFERENCE_PROCEEDINGS_Years_of_Planning (Accessed: 17 November 2022).

Steyn, C. (2021) 'Steyn City donates thousands of trees to the residents of Riverside View Mega City', *I Love Fourways*, 29 April. Available at: https://ilovefourways.co.za/steyn-city-donates-thousands-of-trees-to-the-residents-of-riverside-view-mega-city/ (Accessed: 27 February 2023).

Storey, J. (2017) *Theories of consumption*. London ; New York: Routledge, Taylor & Francis Group.

Stucker, D. and Bozuwa, J. (2012) 'The Art of Sustainability: Creative Expression as a Tool for Social Change.', *Reflections*, 12(2), pp. 45–54.

Tandarić, N., Ives, C.D. and Watkins, C. (2020) 'Can we plan for urban cultural ecosystem services?', *Journal of Urban Ecology*, 6(1), p. juaa016. Available at: https://doi.org/10.1093/jue/juaa016.

Thoring, K., Luippold, C. and Mueller, R.M. (2013) 'Opening the Cultural Probes Box: A Critical Reflection and Analysis of the Cultural Probes Method', in. *5th International Congress of International Association of Societies of Design Research (IASDR)*, pp. 1–12.

Thornberg, R. and Charmaz, C. (2014) 'Grounded Theory and Theoretical Coding', in U. Flick (ed.) *The SAGE handbook of qualitative data analysis*. Los Angeles: SAGE, pp. 153–169.

Turvey, R.A. (2019) 'Place-Making and Sustainable Community Development', in R.A. Turvey and S. Kurissery (eds) *Intellectual, Scientific, and Educational Influences on Sustainability Research:* Hershey, Pennsylvania: IGI Global (Practice, Progress, and Proficiency in Sustainability), pp. 253–273. Available at: https://doi.org/10.4018/978-1-5225-7302-9.

UN-Habitat (2018) *SDG Indicator 11.7.1 Training Module: Public Space*. Nairobi, Kenya: United Nations Human Settlement Programme.

UN-Habitat (2020) *The New Urban Agenda*. Nairobi, Kenya: United Nations Human Settlements Programme. Available at: https://unhabitat.org/sites/default/files/2020/12/nua_handbook_14dec2020_2.pdf.

UN-Habitat (2021a) *Global Public Space Programme: Annual Report 2021*. Nairobi, Kenya: United Nations Human Settlements Programme. Available at: https://unhabitat.org/sites/default/files/2022/02/20220207_annual_report_gpsp_2021.pdf (Accessed: 27 May 2023).

UN-Habitat (2021b) *The Block by Block Playbook: Using Minecraft as a participatory design tool in urban design and governance*. Nairobi, Kenya.

United Cities and Local Governments (2008) *Agenda 21 for culture*. Barcelona, Spain. Available at: https://www.agenda21culture.net/sites/default/files/files/documents/multi/ag21_en.pdf (Accessed: 15 July 2023).

United Cities and Local Governments (2015) *Culture 21: Actions*. Barcelona, Spain. Available at: https://www.agenda21culture.net/sites/default/files/files/documents/multi/c21_015_en_0.pdf (Accessed: 15 July 2023).

United Cities and Local Governments (2018) *Local and Regional Governments' Report to the 2018 HLPF*. Barcelona, Spain. Available at: https://knowledge-uclga.org/IMG/pdf/towardsthelocalizationofthesdgs2018.pdf (Accessed: 15 June 2023).

United Cities and Local Governments (2022) *Local and Regional Governments' Report to the 2022 HLPF*. Barcelona, Spain. Available at: https://gold.uclg.org/sites/default/files/hlpf_2022.pdf (Accessed: 15 July 2023).

Wang, M. (2019) *Socially engaged art in contemporary China: voices from below*. New York: Routledge, Taylor Francis Group (Routledge research in art and politics).

Ward, J. and Shortt, H. (2020) 'Using Arts-Based Methods of Research: A Critical Introduction to the Development of Arts-Based Research Methods', in J. Ward and H. Shortt (eds) *Using Arts-based Research Methods*. Cham: Springer International Publishing (Palgrave Studies in Business, Arts and Humanities), pp. 1–13. Available at: https://doi.org/10.1007/978-3-030-33069-9_1.

Wenger, É. (2008) *Communities of practice: Learning, meaning, and identity*. 18th printing. Cambridge: Cambridge University Press (Learning in doing social, cognitive, and computational perspectives).

World Commission on Culture and Development (1995) *Our Creative Diversity*. Available at: unesdoc.unesco.org/in/rest/annotationSVC/DownloadWatermarkedAttachment/attach_import_5a04cff0-025e-4d3f-87b5-f62fc0ef458c?_=101651eng.pdf&to=292&from=1 (Accessed: 14 August 2023).

Zeng, F. (2019) 'The Implications of Ecological Aesthetics (Part III): The Basic Categories of Ecological Aesthetics', in Zeng, F., *Introduction to Ecological Aesthetics*. Singapore: Springer Singapore, pp. 227–279. Available at: https://doi.org/10.1007/978-981-13-8984-9_12.

Zheng, X. *et al.* (2021) 'Consideration of culture is vital if we are to achieve the Sustainable Development Goals', *One Earth*, 4(2), pp. 307–319. Available at: https://doi.org/10.1016/j.oneear.2021.01.012.