Converging in Zero Waste: Divergent Paths in Bogotá (Colombia) and Kiel (Germany)

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By Angela Vejarano-Jiménez (Linkedin), Master Student of the Master in Sustainability, Society and the Environment at Christian-Albrechts-Universität zu Kiel, Germany (e-mail).

Generating waste is an inherent aspect of nearly every human and non-human activity. However, the issue arises when “waste” cannot be effectively reused, recycled, or properly disposed of, leading to pollution across various levels (UNEP, 2015). Moreover, when waste production surpasses the capacity for effective management, it poses a challenge that extends to the imperative need to curb indiscriminate consumption of goods and services. In response to these challenges, a comprehensive approach has emerged in recent years, focusing on

measures to prevent, reuse, and recycle waste, known as Zero Waste. This approach, championed mainly by civil organizations, has also been adopted as public policy at various governance levels, including Bogotá (Colombia) and Kiel (Germany).

This article's initial segment delves into theoretical aspects drawn from political ecology and theories of practice, providing a foundation to underscore the significance and evolution of the forthcoming comparison. Subsequently, the article will delineate the conceptual distinctions between Zero Waste (ZW) and the Circular Economy (CE), shedding light on the potential implications of these concepts on the public policies of both cities. This discussion will incorporate the global guidelines the United Nations and the European Commission set forth concerning Zero Waste and CE. The ensuing section will explore the parallels and variances between Bogotá and Kiel in their transitions toward becoming Zero Waste cities. Ultimately, the conclusion aims to elucidate the extent to which these disparities and commonalities might influence the efficacy of their respective endeavours in achieving their goals.

A place-based approach and waste management practices in Bogotá and Kiel

To examine the significance and viability of comparing disparate cities like Bogotá and Kiel two theoretical frameworks will be used: political ecology and theories of practice. The political ecology framework, which considers the interplay between global and local scales in the study of ecological and political-economic issues (Biersack, 2006), proves beneficial as Zero Waste serves as a global discourse adaptable in diverse ways within distinct local contexts shaped by social, economic, and ecological conditions. In contrast, theories of practice focusing on the nexus between prescriptive statements and practical policies (Warde, 2005) illuminate the interconnection between the global directives of Zero Waste and the practical measures implemented by the governments of Bogotá and Kiel.

While political ecology studies in the 70s and 80s were rooted in the theory of dependency, emphasizing global power structures and social inequalities, contemporary political ecology shifts its gaze toward the local, fostering an approach that acknowledges and validates diverse knowledge, realities, and worlds (Biersack, 2006; Escobar, 2015). Considering the vast geographical, historical, and social disparities between Bogotá and Kiel, an exploration of their

specificities in the context of the global Zero Waste objective can shed light on the feasibility and adaptability of this goal at the local scale.

Contemporary political ecology, examining both local and global scales, intersects with theories of practice (Biersack, 2006), as the latter also delves into the relationship between "lower" and "bigger" scales, analyzing the practices of agents and their interactions within the social structure (Bordieu, 1999; Giddens, 2006). In this essay, the focus extends beyond individual practices to the practices of entire cities, influenced to some extent by global Zero Waste standards.

Drawing on Alan Warde's Consumption and Theories of Practice, practices are defined as coordinated entities of doings and sayings, encompassing practical activities and their representations (Warde, 2005). Three elements characterize practices:

1. **Understandings:** The ability to recognize and address an explanation. Here, the essay considers how the local governments of Bogotá and Kiel currently align with zero-waste precepts.
2. **Procedures:** Rules, principles, and instructions. In the case of the two cities studied, both have planning instruments and institutions forming the foundation of their waste management systems.
3. **Engagements:** The value conferred to something, in this case, the cities' importance or level of engagement with Zero Waste measures.

These theoretical frameworks not only form the basis for analyzing the local contexts of Zero Waste from a place-based approach but also substantiate the argument for the importance of such an analysis.

The "sayings": Global Discourses of Zero Waste and Circular Economy

The realm of Transition Discourses (TDs) in recent literature underscores the imperative need for social-ecological transformations, presenting varied perspectives within academia and civil organizations (Escobar, 2015). One perspective accentuates the role of technology in substituting industrial production methods to sustain existing consumption patterns (Mol et al., 2013). Another contends that addressing the root cause of social and ecological problems involves transforming the growth-based economy (Pellow et al., 2000). Zero Waste, aligning with the call for transformation, provides insights into these perspectives and their counterpart: the circular economy.

Zero Waste, as defined by the Zero Waste International Alliance (ZWIA), revolves around the responsible production, consumption, reuse, and recovery of resources without environmental threats (ZWIA, 2018). This definition contemplates the logics of production and consumption, extending the latter to consumers to reconsider their habits and producers to incorporate waste prevention measures. The movement is rooted in civil organizations and grassroots initiatives, fostering a frugal lifestyle and challenging consumption patterns associated with accumulation.

In contrast, Circular Economy (CE) originates in academia, particularly in disciplines like Industrial Ecology and Ecology Economies (De Angelis, 2018). CE entails the opposite conception to a linear economy, i.e., the notion of "take, make, and dispose" (Sillanpää et al, 2019). However, the literature indicates a predominant focus on recycling within CE, potentially jeopardizing its social and ecological outcomes (Henry et al., 2021). If waste is treated as an exchange value rather than a use value, profit-driven motives may compromise social and ecological well-being (Pellow et al., 2000).

Both Zero Waste and CE concepts are acknowledged in the Global Waste Management Outlook (GWMO) by the United Nations Environment Programme (UNEP), which provides conceptual and practical tools for adopting a holistic approach of waste and resource management (UNEP, 2015). Aligned with the Sustainable Development Goals (SDGs), the GWMO could function as a policy guideline for cities like Bogotá and Kiel. The GWMO recognises the importance of prevention programs akin to Zero Waste and highlights CE trends targeting upstream sectors (i.e., designers and producers). It suggests that lower-income countries increase their control over landfills, integrate informal recycling within mainstream waste management, and reactivate repair and reuse practices. In contrast, higher-income countries should focus on sustainable recycling (UNEP, 2015).

Related measures are established in the Circular Economy Action Plan by the European Commission, nested within the European Green Deal, and reflect intertwined objectives between CE and a growth-based economy (European Commission, 2021). While primarily addressing the production dimension, the plan encompasses measures related to consumers, including access to product information, protection against "greenwashing" and premature obsolescence, and the right to repair" (European Commission, 2020).

These seemingly contrasting emphases between Zero Waste and CE offer valuable context for understanding the waste management transitions of Bogotá and Kiel. While the former aligns with a Circular Economy policy, the latter explicitly embraces the principles of Zero Waste.

The "doings": local practices of Zero Waste in Bogotá and Kiel

Bogotá and Kiel have significant demographic and economic disparities. While in 2018, the population of Bogotá was 7.412.566, in the same year, Kiel was counting almost 30 times fewer inhabitants: 248.792 (DANE, 2018; Kiel, 2021). The unemployment rate in Bogotá was 16,3% in 2020, contrasting with 8,7 in Kiel the same year (DANE, 2020; Agentur für Arbeit Kiel, 2020). In addition, around 42% of Bogotá's residents with an occupation were informal workers (DANE, 2020). Both cities have had explicit Zero Waste policies, with Bogotá's 2012 initiative evolving into the current "Strategy for Green Growth" (Alcaldía de Bogotá, 2021). In turn, Kiel launched its Zero Waste strategy in 2020 with long-term goals envisaged until 2035 (LH Kiel, 2020).

Bogotá's waste management system has traditionally had two sectors, formal and informal, with over 10,000 recyclers operating in challenging conditions. Legal decisions in 2003 and 2011 led to the formal inclusion of recyclers in the system, prompting the creation of a Zero Waste policy in 2012 based on ZWIA principles. Bogotá's current strategy emphasizes waste as a resource within the Green Growth framework, focusing on source separation and waste disposal improvement (Alcaldía de Bogotá, 2021; OECD, 2021).

Kiel's Zero Waste policy, initiated by Zero Waste Kiel e.V., targets reducing waste through specific sector-based goals. Citizens categorize waste into different streams, reflecting the city's formal relations with a local entity and five private companies. Kiel's targets align with Zero Waste principles, emphasizing reuse, repair, and waste reduction (LH Kiel, 2020).

Procedurally, Bogotá is restructuring its waste management system, involving institutional changes, formalization of recyclers, and a public entity for non-recyclable waste collection. Private companies dominate waste management, with an unequal dynamic that disadvantages recyclers (Cortés et al., 2020). In Kiel, formal relations exist between public entities and private companies, focusing on collecting distinct kinds of waste rather than defined areas.

Despite only Kiel having an explicit Zero Waste policy, both cities share common goals of reducing landfill disposal. Kiel's policy aligns more closely with Zero Waste principles, emphasizing waste prevention, while Bogotá's Strategy for Green Growth focuses on waste management post-discarding. Waste generation per capita is higher in Kiel (498 Kgs) than in Bogotá (334-412 Kgs), aligning with the traditional notion that richer countries produce more waste (LH Kiel, 2020; Concejo de Bogotá, 2020; UAESP, 2020; UNEP, 2015; Davies, 2008).

Conclusion: Shaping Local Policies through Global Frameworks

The intersection of global frameworks, such as Zero Waste (ZW) and Circular Economy (CE), significantly influences the trajectory of local waste management policies. Bogotá's (2012) and Kiel's (2020) zero-waste policies shared a joint foundation by addressing production and consumption dimensions and prioritizing waste prevention. However, the current strategic shift in Bogotá towards CE underscores a departure from holistic waste management, emphasizing only the production dimension, distinguishing it from Kiel's approach.

Aligning with recommendations from the United Nations Environment Programme (UNEP), Bogotá recognizes the importance of formalizing recyclers, yet it falls short in adopting measures for waste prevention. Kiel stands out for its ambitious targets, strengthening its commitment to sustainable waste management when complemented with the Circular Economy Plan of the European Green Deal.

While social challenges pose a significant hurdle for Bogotá, hindering the likelihood of achieving a Zero Waste scenario, Kiel's adherence to ZWIA precepts positions it favourably. Kiel's comprehensive practices and ambitious targets enhance its effectiveness in progressing towards the coveted status of a zero-waste city. This comparative analysis underscores the critical role of global frameworks in shaping and differentiating local waste management strategies, ultimately influencing their potential success and effectiveness.

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