


## Chapter 5

# Waste Governance and Sustainable Urban Logistics: Exploring the Case of Izmir in the Context of Environmental Justice

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### ABSTRACT

*Waste management poses a multifaceted challenge, particularly in metropolitan areas, where complex processes of waste collection, transfer, and disposal unfold. The increasing environmental and waste challenges in urban areas necessitate a thorough investigation of waste management through the lenses of reverse logistics and sustainable urban logistics paradigms. This chapter delves into the realm of sustainable urban logistics within the framework of waste governance, emphasizing the perspective of environmental justice. Izmir's solid waste governance, considered an unsuccessful case in sustainable urban logistics, is critically analysed. The chapter examines the unsustainable urban logistics in waste governance, emphasizing resulting injustices and socio-environmental risks. Employing a mixed-methods approach with quantitative, qualitative, and geographical data, the study highlights the environmentally, socially, and economically unsustainable facets of urban logistics, presenting a distinctive example through the lenses of environmental justice and waste governance.*

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## INTRODUCTION

Sustainable urban logistics can be defined as the transport of all types of goods in urban areas, considering the networks of production-consumption and supply-demand. Cities are centres where human environments and natural ecosystems survive, and the need for all these goods/substances is increasing and becoming complex. Building sustainable logistics systems in cities is also crucial for the three main dimensions of sustainability: environmental justice; social equity and economic vitality (Gonzales-Feliu, et. al., 2014). Particularly in countries with fast-growing urban populations like Turkey, it is of great importance to establish sustainable urban logistic systems and articulate them to cities through the operation of just environmental governance regulations and sustainable urban planning practices.

The chapter will address the issue of sustainable urban logistics through the lens of environmental justice and the governance of waste collection-transfer-disposal processes. In the mainstream literature, most studies of urban logistics mainly focus on industrial production networks and the distribution of goods to markets for consumption (Browne, et. al., 2018). The governance of waste collection-transfer-disposal processes is often examined within the framework of the “reverse logistics” approach (Bing et al., 2016). The collection of waste after consumption processes in the city and their transportation from transfer centres to disposal facilities do not receive adequate attention in urban logistics research. However, in fast-growing metropolitan cities, investigating the collection-transport-disposal processes of waste and revealing the environmental injustices caused by these processes are of great importance for sustainability (Tuçaltan, 2019; Kaya & Erol, 2016; Swyngedouw, 2015; Watson et. al., 2005). In addition, as well as successful case studies, it is necessary to reveal unsuccessful/failed cases in terms of sustainable urban logistics (that have not achieved their goal, and have triggered environmentally unsustainable or unjust results). Thus, it is essential for urban policy-makers to learn from unsuccessful/failed cases and to redesign urban logistics systems accordingly to ensure sustainability and equitable urban development.

The case study elaborated in our chapter is the solid waste governance processes in Izmir which could be considered as an unsuccessful/failed case in terms of sustainable urban logistics. The collection-transfer-disposal processes of waste in Izmir lead to an uneven geographical structure and are unsustainable. To describe in numbers, according to 2019 data, 93% of the solid waste in Izmir is transported to a peripheral urban area (Harmandalı Solid Waste Storage Disposal Facility in Çiğli District, located in Cumhuriyet Neighborhood) where poor and low-income people live in unqualified spaces, deprived of many basic urban services. The storage and disposal facility in Çiğli has continued for over 30 years and the landslide risk appeared in Cumhuriyet Neighborhood, triggered by the density of waste in this geologically risky area. 11 households are evicted from their homes in this area owing to the landslide risk. The initial findings of the research indicate that the unsustainable form of urban logistics in waste governance has severely exacerbated living conditions for the people and caused further socio-environmental risks by the time (Ministry of Environment and Urbanization, 2020; Çiğli City Council, 2022).

The research employs a mixed method including a combination of quantitative, qualitative, and geographical data. Based on Geographic Information Systems (GIS), the collection-transfer-disposal of waste has been mapped and analysed in the light of quantitative data. In addition, the quantitative data on waste have been comparatively analysed concerning the urban geography of wealth and income, consumption, and poverty. The correlation between waste and urban poverty has been explicated via quantitative and GIS-based analysis. Furthermore, this analysis has also indicated the landslide risk triggered by the waste storage-disposal facilities. To support all these quantitative and geographical data with qualitative data,

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