

Chapter 17

Local Government Challenges in Implementing the 3R Strategy for Sustainable Waste Management

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ABSTRACT

This research delves into the multifaceted landscape of sustainable waste management in the context of Barisal City Corporation, emphasizing the challenges of implementing the 3R strategy. The city's waste management practices and perceptions among its residents are examined through a comprehensive primary data collection process, offering critical insights into the current state of waste management. The study

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reveals formidable challenges such as insufficient local government initiatives and supervision, irregular waste transportation and segregation, insufficient manpower, unconventional waste storage and disposal practices, unaddressed environmental impact, and the lack of a secondary transfer station. At the same time, the research uncovers promising prospects, including source segregation, energy-efficient waste transportation, and an emerging recycling culture. By addressing these challenges, the city can significantly advance its waste management initiatives, aligning them with the 3R strategy and striving for a cleaner, more sustainable urban environment.

1.0 INTRODUCTION

Waste management is a fundamental component of urban development, affecting every aspect of public health, environmental sustainability, and the quality of life for urban inhabitants (Mesjasz-Lech, 2014). The problem of waste management in metropolitan areas is closely connected with the ongoing urbanization process (Hossain et al., 2024a; Hossen et al., 2024). The increasing number of people living in cities around the world has put more pressure than ever on cities to manage waste effectively (Hossain et al., 2024d; Oteng-Ababio et al., 2013). The percentage of people who live in urban areas worldwide is predicted to increase from 55% in 2021 to 68% in 2050 (Klohe et al., 2021; United Nations, 2019). Cities and governments face a challenge in managing the increasing volumes of waste as a result of ongoing urban growth and the resulting increase in waste generation (Mesjasz-Lech, 2014).

The management of waste in urban areas has become a critical task in the fast-paced urbanization period, requiring innovative thinking, responsible leadership, and comprehensive plans (Marshall & Farahbakhsh, 2013). According to Zhang et al. (2021), policymakers, urban planners, and researchers share a critical concern regarding the sustainable management of waste materials and water, particularly in metropolitan areas (Hossain et al., 2024b). The amount of solid waste produced worldwide has increased by 50% in just ten years, from 0.68 billion tons in 2000 to an unbelievable 1.3 billion tons in 2010 (Hoorweg & Bhada-Tata, 2012). Alarming estimates indicate that this tendency will continue, with predictions of 2.2 billion tons annually by 2025 and an alarming 4.2 billion tons annually by 2050 (Hassan et al., 2019). These numbers highlight the challenges growing urban populations face when trying to dispose of waste in an eco-friendly manner. Bangladesh's cities are facing a growing waste problem as a result of increased urbanization. Bangladesh had a growth in urbanization from 28.97% to 36.63% between 2008 and 2018, with a peak in waste creation of 0.41 kilos per person per day in 2012 (Mostakim et al., 2021). The current growing trend indicates that the daily generation of waste might reach an estimated 47,064 tons, or 0.602 kg per person (Mostakim et al., 2021). The

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