Chapter 7
Sustainable Water and Sanitation Management: An Analysis of City Corporations' Challenges

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ABSTRACT

This chapter investigates the challenges faced by Rajshahi and Gazipur City Corporations, Bangladesh, in ensuring sustainable water and sanitation practices. A qualitative method was used to collect data from various sources, including in-depth interviews, key informant interviews, focus group discussions, and existing literature. The study has identified several major challenges faced by City Corporations (CCs) in Bangladesh. These challenges include inadequate infrastructure, population growth, unplanned urbanization, insufficient financial resources, and institutional incapacity, issues related to water reuse and conservation, and improper waste management. These challenges have a significant impact on sustainable water and sanitation management. The study identified that the wastage of water is caused by inadequate infrastructure, population growth, unplanned urbanization, institutional

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incapacity, and poor coordination. Furthermore, the scarcity of safe water is also caused by population growth, unplanned urbanization, and the absence of water reuse and conservation systems.

1.0 INTRODUCTION

Water quality is a critical factor in human physiology (Etim et al., 2013), being one of the essential substances necessary for sustaining life, health, and ecosystems (AL-Dulaimi & Younes, 2017). However, in developing nations like Bangladesh, poor water quality has emerged as one of the most significant challenges (Akoto et al., 2017). Millions of people lack access to a safe and sufficient water supply in these nations (Kimani-Murage, 2007), and historically, developing countries have faced more pronounced water and sanitation problems than developed nations (Pandit & Kumar, 2015).

Bangladesh, as an underdeveloped nation, faces problematic access to clean water and proper sanitation. Over 90 percent of the population relies on unimproved water sources (Bhavnani et al., 2014), and 2.6 billion people do not have access to improved water supplies and 1.1 billion do not have access to adequate sanitation (Robinne et al., 2018). Urbanization and unexpected growth have worsened the issue, leading to extreme poverty and disparities in water service access (Hossen et al., 2024; Angeles et al., 2009). Consequently, water quality has reached an all-time low, posing major health concerns for urban Bangladesh.

The implications of inadequate access to clean water are terrible, with millions in Bangladesh exposed to severe waterborne illnesses, including diarrhea, cholera, dysentery, and typhoid (Hasan et al., 2019). Despite economic challenges and a dense population, Bangladesh has made progress in improving water accessibility and mitigating arsenic contamination (Loewenberg, 2007). The government has taken several initiatives, such as water safety plans, to address water pollution and provide safe drinking water (Alam, 2021).

Nevertheless, in spite of these initiatives, the CCs of Rajshahi and Gazipur are still having difficulty providing better water to their residents. Water quality issues, such as excessive iron, turbidity, hardness, and odor, persist in these areas (Lamia et al., 2018; Pandey, 2009). The water supply in tea shops and restaurants in Gazipur City is not very good (Farooq et al., 2019). High concentrations of iron and manganese, coliform bacteria contamination, arsenic contamination, and total hardness are the main factors limiting the availability of drinking water in these areas (Rasul, 2010). As a result, a considerable proportion of the population refrains from consuming CC-provided water, boiling and filtering it instead (Lamia et al., 2018).