

Chapter 2

Sustainable Solid Waste Management in Bangladesh: Issues and Challenges

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ABSTRACT

Solid waste management is a grave concern for Bangladesh as by 2025 waste generation per capita will be 0.75 kg/capita/day and total amount of waste will reach 21.07 million tons per year. This chapter attempts to uncover the facts regarding waste management along with the policies and regulations existing in Bangladesh by reviewing published secondary documents. The chapter also contains emerging issues of agricultural, industrial, hazardous, construction, and electronic generation and 3R practices in Bangladesh. Legal instruments for waste management in Bangladesh are also examined. It has been found that enforcing authorities lack the capacity to implement their strategies regarding 3R practices for waste management. Case studies about community-based approach, waste recycling sector, and medical waste management have been exemplified in this chapter. Finally, the authors apprised the issues and challenges of sustainable solid waste management practices and proposed the way forward for Bangladesh to have sustainable solid waste management.

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INTRODUCTION

Waste is inevitable as it is generated by daily human activities through discarded materials of domestic chores, agriculture, business, industry, natural and man-made disasters, and medical services, etc. According to Bangladesh Environment Conservation Act, 1995, waste is, “any solid, liquid, gaseous, radioactive substance, the release, disposal, and throwing away of which may cause deleterious changes to the environment.” Management of waste comprised of collection, carrying, treating or disposal of discarded materials and substances (Unnisa & Rav, 2012). Sustainable solid waste management is one of the prerequisites for sustainable environmental management because the unsafe disposal of solid waste pollutes the environment and causes human health hazards.

Bangladesh is considered as a densely populated country where 162.7 million (BBS, 2018) people live in an area of 147570 square kilometers and 1,115.62 people live in per square kilometer (Kormoker et al., 2017). The population growth rate of the country is 1.37% (BBC Monitoring, 2019), where the urban and rural populations are 23.3% and 76.7%, respectively. The urban population of the country will be 38% by the year 2020 (Population Division of the UN, 2016). This quick advancement in urbanization, industrialization, and consequently improved lifestyles generate the bulk of solid wastes. The per capita national income of Bangladeshi people reached USD 1,751, with 7.86% GDP growth in the fiscal year 2017-18 that has overcome its status from the least developed to a lower-middle-income country (BBS, 2017, 2018a, 2018b). Appreciable economic development has ushered considerable changes in the lifestyle leading towards urbanization and lavish living standard. Previous studies (Abedin & Jahiruddin, 2015; Rahman, 2017; Shams et al., 2017) showed that fast urbanization and population growth are liable for a large volume of solid waste production in Bangladesh. The volume of waste generated in 1970 was 11,00,000 tons which in 2015 amplified to 52,00,000 tons with an annual increase rate of 1,34,300 tons (Shams et al., 2017). In two separate studies, it was found that in 2013 the total amount of municipal solid waste (MSW) generated in urban areas of Bangladesh was 52,00,919 ton/year by 3,69,86,768 urban inhabitants (rate 0.35 Kg/cap/day) whereas in 2015 the total amount of urban wastes was 5,11,000 ton/year by 3,94,88,000 residents (0.32 Kg/cap/day) (Shams et al., 2017; Islam, 2017). Another source reports MSW generation of 1,47,78,497 ton of waste in 2012 with the country's population of 15,57,27,053 (Kaza et al., 2018). The average per capita MSW production in different municipal areas ranges from 0.2 to 0.56 kg/cap/day (Ahsan et al., 2014). In the urban areas of Bangladesh, the waste generation is expected to raise 0.6 Kg/cap/day (Bhuiyan, 2010) where the total generated waste volume would be 57,718 tons/day (Hoornweg & Perinaz, 2012) by 2025.

Since waste is the ever-present issue for every society, the management of solid waste is also an ancient phenomenon. Bangladesh has had a traditional waste management system since its independence in 1971. Early waste management in Bangladesh allowed indiscriminate open dumping and burning, disposal of wastes into water bodies, landfilling, and direct disposal into agricultural land in rural areas. Night soil collection was handled through Bullock Cart for solid waste, along with nighttime waste collection, house-to-house collection performed by the Water Supply and Sewerage Authority (WASA) in urban areas. With the advent of time, the country shifted its waste management system from traditional to a modern approach. Wastes are now considered resources, so Bangladesh has shifted from waste management to resource management.

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