

A CASE STUDY OF MUNICIPAL SOLID WASTE (MSW) DUMPSITE MANAGEMENT FOR AN URBAN LOCAL BODY (ULB)

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Abstract

Uncontrolled and unscientific way of dumping municipal solid waste (MSW) is one of the major adverse environmental issues in Indian cities across the country. The shift of rural area to urban conglomeration, conversion of agricultural land for industrial and residential use, rampant urbanization and rapid growth of consumerism and unexpected colonization has led to an increase in uncontrolled dumping of MSW, has led to serious health issues. Comprehending the necessity of efficient MSW waste collection & treatment methods, a waste management system / facility needs to be developed / established in a systematic and scientific way. The rise in waste generation and indiscriminate dumping in the absence of effective waste management results in contamination of land, groundwater and surface waters, and significant amounts of pollutants are released into the air due to open burning of the waste. The main objective of this study is to identify suitable treatment methods specifically with reduce, reuse and recycle concepts. A case study of Urban Local Bodies (ULBs) in Madhya Pradesh which are currently practicing an unorganized dumping in MSW is considered for proposing MSW management strategies.

Keywords: Municipal Solid Waste, Dumpsite, Waste Management, ULBs, Recycle & Reuse.

1. Introduction

India is the seventh largest country by area and the world's second highest inhabited country after China with a population of 1210 million. Municipal solid waste in India creates a huge environmental problem, generating around 62 million tons of MSW waste annually (Ghosh, 2016). As per the Census of India, the 2011 annual growth rate of the urban population was 3.35%. The urban population from 1951 to 2011 has been augmented from 17.35% to 31.2% (Vij, 2012). Rapid increase in urban population directly contributes to the generation of a massive amount of municipal solid waste. With increasing urbanization, municipal solid waste management has been augmented in India (Dutta et al., 2019; Guerrero et al., 2013; Narayana, 2008). The technical assistance for development of infrastructure for municipal solid waste management in urban areas is provided by Central and State Governments by framing rules and regulations. The government plays a vital role in conducting various programs planning to create awareness among the people for proper management of solid waste (Rajesh & Bindhu 2018; Agarwal et al., 2015). Following this, in 2014, the Government of India introduced a drive, namely Swatch

Bharat Mission (SBM), which focuses on systematic waste collection and its proper disposal (<http://cpheeo.gov.in/upload/uploadfiles/files/Part2.pdf>). Though municipal solid waste management is an important service to be carried out by each ULBs, it is still being dumped unscientifically and irregularly giving rise to environmental degradation and serious health problems making it essential to develop or establish systematic and scientific way of municipal solid waste processing & disposal facilities (Asnani, 2006; Goyal, 2014). This clearly defines that every ULB must perform the mandatory functions and prepare a strategic plan considering their current status, scarcities and address the concerns of MSWM (CPHEEO, 2016).

2. Objective

To study is to examine the current environmental compliance, rehabilitation/resettlement of old dumping yards, suitability and application of site selection criteria as per environmental guidelines, thus quantifying the municipal solid waste and to identify suitable treatment methods for efficient waste management of MSW generated in Katni town in Madhya Pradesh.