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## Sustainable Municipal Solid Waste Management in India: A Policy Agenda

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### Abstract

Municipal solid waste management (MSWM) has emerged as a big challenge not only because of the health and environmental concerns but also due to huge quantities of waste generated. It is observed from many research documents that most urban local bodies (ULBs) in India are unable to handle such huge quantities of solid waste due to financial and institutional debilities. Furthermore, ULBs rarely have sufficient funds, resources, infrastructure and appropriate strategies for improved solid waste management. Segregation of waste, door to door waste collection, technologies for the treatment of waste, land resources and scientific disposal methods are some of the major challenges. Recognizing these challenges, the two ministries of Government of India namely Ministry of Environment, Forest and Climate Change and Ministry of Urban Development (MoUD) have initiated several policies and programmes to improve the current scenario of MSWM in India. Environment Ministry had promulgated the Municipal Solid Waste Management Rules in 2000 which is now being revamped as Solid Waste Management Rules 2015 while the MoUD has prepared a draft manual on MSWM to support cities and towns on planning and implementing a proper MSWM system in line with the SWM Rules being promulgated in 2015. It is observed that many policies and programmes fail to achieve their objectives due to lack of clarity and awareness among the stakeholders and poor enforcement by the regulators. The present paper provides a comprehensive view of SWM and most importantly highlights some major points of the policies/programmes initiated by the Government of India to overcome the challenges of solid waste management in our country.

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## Introduction

Rapid urbanization, urban growth and economic development have not only changed the physical size of the cities but is also exerting significant additional pressure on the infrastructural services across Indian cities. India is experiencing high urbanization, currently 31 percent as per Census 2011, contributing to 11 percent of the world population and having 53 metropolitan cities which may jump to 87 in 2031. Urban growth is phenomenal and important for the development of the country but unbridled growth may present a glimpse of chequered pockets of ghettos and high class areas (Gupta, 2015). These factors influence consumption rates that accelerate waste generation and change waste composition. The increasing trends in per capita waste generation puts immense pressure on urban local bodies (ULBs) who are mandated to provide this service in India. It is observed from the recent research that most ULBs are unable to handle such huge quantities of solid waste due to financial and institutional debilities. While, daily collection efficiency is around 50-60 percent and 90 percent in few ULBs, only 10 percent of the collected waste receives treatment and virtually nothing is scientifically disposed in engineered landfills (NIUA, 2013). Indian cities are facing the problem of limited availability of land for waste disposal especially in large cities. Furthermore, the ULBs rarely have sufficient funds, resources, infrastructure and appropriate strategies which have resulted in poor collection, transportation, treatment and safe disposal of solid waste.

Recognizing these challenges, the Indian government and key stakeholders have been deliberating upon mechanisms and arrangements to facilitate compliance of ULBs with requirements for treatment and safe disposal of solid waste (MoUD, n.a). The two ministries of Government of India namely, the Ministry of Environment, Forest and Climate Change (MEF&CC) and the Ministry of Urban Development (MoUD) have initiated several policies and programmes to improve the current scenario of solid waste management (SWM) system in India. The Environment Ministry had promulgated the Municipal Solid Waste Management Rules in 2000 which is now being revamped as Solid Waste Management Rules 2015 while the MoUD has prepared a draft manual on MSWM to support cities and towns on planning and implementing a proper MSWM system in line with the SWM Rules being promulgated in 2015. While the MSWM Rules 2000 prescribed the manner in which the authorities have to undertake solid waste management activities within their jurisdiction, it was observed that it failed to achieve its objectives due to lack of clarity, awareness among the stakeholders and poor enforcement by the regulators.

The present paper is an endeavour to provide a comprehensive review of the solid waste management system and most importantly highlight some major points of the government's policies and programmes required to overcome the challenges of municipal solid waste management in India. The paper has been divided into four sections. Section 1 provides the comprehensive review of the current municipal solid waste management in India including the issues and key challenges faced by the ULBs in making MSWM more sustainable. Section 2 discusses the technological options available for the treatment and disposal of solid waste. It also highlights the government's incentives and financial supports i.e. grants and subsidies to the ULBs for the improved SWM in the country. Section 3 of the paper provides the comprehensive review of the legal and policy framework for MSWM. The gaps in the SWM Rules 2015 and suggestions on it are discussed in the last section 4 of the paper before a brief conclusion.

## Section 1: Current Scenario of Municipal Solid Waste Management

Solid waste management includes managing activities associated with collection, transportation, treatment and disposal of solid waste in an environmentally compatible manner with due consideration of the principles of economy, aesthetics, energy and conservation. These activities are briefly discussed in the following section:

### *1.1 Municipal solid waste generation*

According to the Central Pollution Control Board (2015), India generated 1,43,449 tons per day (TPD) of municipal solid waste during 2014-15, with an average waste generation of 0.11 kg/capita/day (GIZ, 2015). It does not include waste picked up by Kabadiwalas from households and from the streets by rag pickers. Whereas

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