

Municipal Solid Waste Management: Challenges And Legislative Framework In India

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Abstract— India has emerged as a fast-developing country in the past few decades, which has led to massive urbanization. As per the 2011 census, the then total population of India was 1.21 billion, 31% of which was urban population and it was predicted that more than half of India's population would be living in urban areas by the year 2050. One of the biggest challenges posed by this is the management of the solid waste generated everyday by the ever-growing urban population, which, if not disposed of scientifically, causes health and sanitation issues besides degrading the environment.

The proper segregation and disposal of this waste is not only important from the point of view of the environment but also for the sustainable development of the cities. This requires a proper legislative framework aimed at providing clearly defined roles and responsibilities of all concerned entities, i.e., the local Government, private sector, Non-Governmental organizations and the public.

Up until the year 2000, Solid Waste Management (SWM) was the chief obligation and duty of the municipal authorities. It was only after a Public Interest Litigation filed in the year 1996, on the issue of solid waste disposal, in the Supreme Court, that an Expert Committee was constituted to consider the all facets of SWM and to provide with solutions to improve the current situation. Based on the findings of this Committee, the Ministry of Environment and Forests was directed by the Supreme Court to expeditiously issue rules regarding Municipal Solid Waste Management and Handling. As a result, thereof, the Ministry issued the Municipal Solid Waste (Management and Handling) Rules 2000 under the Environment Protection Act, 1986. These rules have recently been revised and replaced by the 'Solid Waste Management (SWM) Rules, 2016.'

This Paper attempts to evaluate the current rules and policies for Municipal Solid Waste Management (MSWM), in India, along with the roles and responsibilities of all the stakeholders.

Keywords: - Municipal Solid Waste Management, Solid Waste Management (SWM) Rules, 2016

I INTRODUCTION

Municipal solid waste management (MSWM), is an indispensable component in the direction of sustainable metropolitan development and poses an exacting predicament for fast developing countries like India, where massive urbanization has taken place in the past few decades.

Solid Waste Management (SWM) has largely been viewed as the job of the municipal authorities and "in India also the common man's perception about solid waste management suffers' from "not in my backyard" syndrome and leaves waste to be taken care by urban local municipal bodies only. (Ahmed, 2016).

According to the 2011 census (Census2011)ⁱ, out of the 1.21 billion population of India, 31% is urban population and it is projected that by 2050, more than half of the population of India will live in urban areas. The amount of solid waste generated everyday has, thus, increased causing sanitation and health issues across India. The disposal of solid waste is, therefore not only the responsibility of the municipal bodies but of all the stakeholders including the waste generators.

The Ministry of Environment and Forests and Climate Change issued the first comprehensive rules, Municipal Solid Waste (Management and Handling) Rules 2000, for the effective handling and administration of solid waste in the year 2000 under the Environment Protection Act, 1986, which addressed the issues pertaining to the segregation and disposal of solid waste besides the roles and responsibilities of the various agencies and bodies involved in its management. After 16 years these Rules were recently amended in 2016 and new rules, Solid Waste Management (SWM) Rules, 2016.^v were issued.

Management of solid-waste is not limited to just the segregation, collection and disposal but comprises of all the aspects needed in providing efficient solutions to the problems caused by mismanagement of waste generated. It addresses the issues related to the financial, technical, administrative, legislative and engineering facets to managing solid waste effectively.

II SMW AND CHALLENGES FACED IN INDIA

The biggest challenges in SWM lie in the segregation, collection, and disposal of waste. The bulk of the responsibility

still lies on the shoulders of the municipal bodies with little or no participation from other stakeholders. Many initiatives have been taken by the Central Government towards strengthening municipal solid waste management in cities, like the Swachh Bharat Mission and increasing Public private partnership (PPP).

However, these initiatives though a step forward, are still in their embryonic stage and require responsibility sharing amongst the municipal bodies, corporates and people. The Solid Waste Management (SWM) Rules, 2016 are a step towards providing Legal framework for the better implementation of these initiatives by introducing the concept of Integrated Solid Waste Management System which enunciates the principles of **Reduce, Reuse, Recover, Recycle, Refine and Remanufacture**. Rule 3(57) of the SWM Rules, 2016 embodies this concept and provides for the hierarchy of management of solid waste. The rule defines waste hierarchy as:

“waste hierarchy means the priority order in which the solid waste is to should be managed by giving emphasis to prevention, reduction, reuse, recycling, recovery and disposal, with prevention being the most preferred option and the disposal at the landfill being the least.”

III SWM AND THE LEGISLATIVE FRAMEWORK IN INDIA

In India the regulation and administration of waste management is multitiered with the Ministry of Environment and Forests and Climate Change (MoEF) having the charge of making the policies in this regard, the Ministry of Urban Development (MoUD) providing the technical guidance for the implementation of the policies thus framed, the Central (CPCB) and State (SPCB) Pollution Control Boards are duty bound to constitute the standards of the technologies involved in processing or disposing the waste generated, together with approving the technologies and checking the consistence of norms and the ground level execution duty lies with the municipal authorities or urban local bodies.

“Waste management is not a new concept however, it was viewed as the sole responsibility of the municipal corporations or urban local bodies, with most of the policies and legislations regarding waste management being formulated by State legislation and the Local Acts that govern municipal authorities. However, most of these did not cover the technical or organizational details of SWM. The municipal acts did not specify in clear terms which responsibilities belonged to the citizens and made no mention of collection systems. These legislations were inadequate in detailing the appropriate types of waste storage depots, and did not mention aspects of waste treatment or sanitary landfills”. (Mani, 2008)[2]

It was only in the mid-1990s that the incongruity of the MSWM practices were put to question in various Public Interest Litigations filed in the Supreme Court. The Apex Court in **Almitra H Patel V. Union of India ((1998) 2 SCC 416)** case constituted a committee to consider the existing practices for waste disposal, frame standards and regulations for waste management and to modify the existing policies to ensure effective management of solid waste. The said committee submitted its report pursuant to which, the Ministry of Environment and Forests was directed by the Supreme Court to expeditiously issue rules regarding Municipal Solid Waste Management and Handling. As a result, thereof, the Ministry issued the Municipal Solid Waste (Management and Handling) Rules 2000 under the Environment Protection Act, 1986 which required all municipal bodies to establish a proper waste management system.

However, the Municipal Solid Waste (Management and Handling) Rules 2000, despite providing for strategic plans aimed towards improving the methods of collection, storage, disposal technologies and sustainable fiscal management, were unable to improve the MSWM practices. After 16 years these Rules were replaced with the Solid Waste Management (SWM) Rules, 2016, whereby the gaps found in the previous Rules have been addressed.

SWM Rules, 2016 lay down the roles and responsibilities of the governmental agencies involved in SWM and other stakeholders, clearly defining duties of the waste generators and authorities towards a more integrated solid waste management system.

The Ministry of Urban Development in its manual summarized the SMW Rules 2016 and stated that they manifest the new systems, technology developments, and concepts for an integrated system of managing solid waste. According to the manual, they cover the following aspects:

- “List of authorities involved in MSWM and their corresponding duties;
- Mandatory MSWM policy and strategy to be prepared by the state or the union territory; Mandatory MSWM plans to be prepared by the municipal authority;
- Specific requirements for the MSWM including segregation into wet, dry, and special waste, as well as restriction on material to be disposed in landfills (only non-reactive, inert, and pre-treated waste may be disposed);
- Levy of service fees by the municipal authority to make this service sustainable;
- Provision of on-spot fine on those littering waste at public places;
- Requirements for landfill sites including site selection and mandatory lining system;
- Requirement of environmental clearances for setting up MSW processing and disposal facilities including landfills;
- Standards for composting;

- Standards of treated leachate;
- Emission standards for incineration facilities; and
- Mandatory annual reporting by the municipal authority on MSW operation” (MoUD, 2016)[2]

The definition of solid waste provided in the SWM Rules, 2016 is an inclusive definition and covers what is commonly called as garbage and waste generated by agriculture, industries, hospitals amongst others. Rule 3(46) of the SMW Rules, 2016 defines solid waste and states that it includes the following things, namely: - Waste produced by

- Households including both solid and wet waste;
- Commercial and institutional establishments;
- Sanitary Waste;
- Hotels, Hospitals, markets and street hawkers;
- Cleaning the streets;
- Residual from surface drain cleaning
- Agriculture, horticulture and dairy
- Bio-medical waste and e-waste etc. (Solid Waste Management Rules, 2016)ⁱⁱ

This definition of solid waste is an inclusive definition and covers not only what is commonly called garbage but any residual product from any activity which does not have any further commercial or other use and which is therefore discarded.

Specifically, the SWM Rules, 2016, provide for the entire process of waste management starting from the segregation and storage of waste at source to its final disposal. The first step in the process is the segregation and at source storage of the generated waste, which necessitated the defining of waste generators. Rule 3(56) and 3(8) explain the meaning and entities included in the category of waste generators under the SWM Rules, 2016 as including all persons or group of persons, residential and non-residential properties and all establishments like Railways, Defense etc, which generate waste; bulk waste generators include hospitals, nursing homes, educational institutions, hotels, hostels and boarding houses, market places, temples and other places of worship, sports complexes or other arenas, private companies, buildings and spaces occupied by Central or State government departments or undertakings, public sector undertakings and local bodies who generate at an average 100kg waste per day. (Solid Waste Management Rules, 2016)[3]

The incorporation of the concept of integrated SMW in the SWM Rules, 2016 is reflected in the following rules:

Rule 4 makes it mandatory for the waste generators to:

- Separate and stow the generated waste, separately in three bins namely bio-degradable, non-biodegradable and domestic hazardous wastes.

- Handover the segregated wastes to collection agencies notified for collection by the local authorities.
- Construction and demolition waste to be stored separately in the premises of the generator and dispose of as per the Construction and Demolition Waste Management Rules, 2016; and
- Store the waste generated from horticulture and gardening activities carried out in his premises separately in his own premises and dispose of the same according to the directions issued by the urban local body.

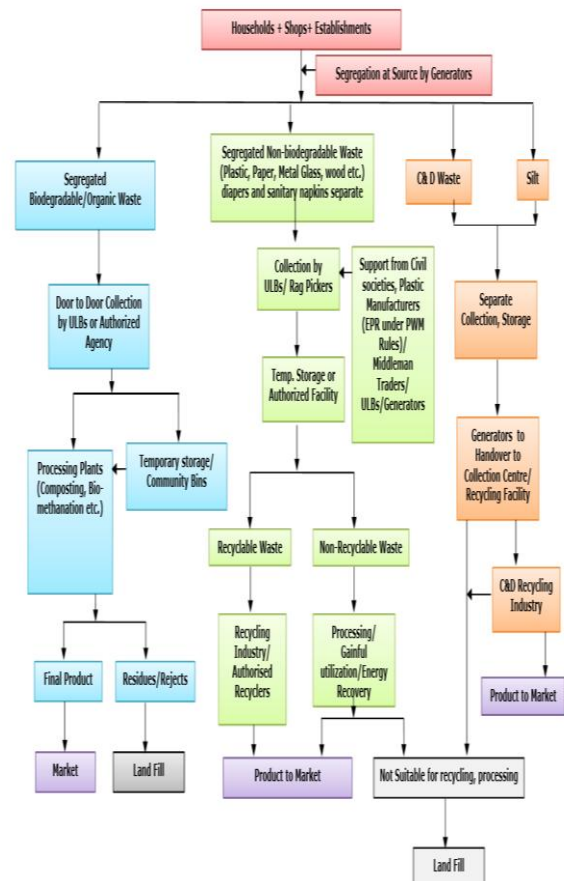


Figure 1:SMW Rules

The SWM Rules, 2016 further provide that the waste generator shall not throw, burn or bury the solid waste generated by them, on public spaces outside or near their premises or in drains or water bodies. Besides the waste generators, the SWM Rules, 2016 also provide that street vendors shall also keep appropriate containers for storing of waste generated during their activity and that it shall be their duty to drop such waste at waste storage depot or container or vehicle as advised by the urban local body.

Resident welfare Associations, Market Associations, hotels and restaurants and all gated communities have been mandated with the task of ensuring segregation of waste generated at source, facilitation of collection of segregated waste, in partnership with the local bodies.

They are also charged with the duty of processing, treating and disposing off all bio-degradable waste through composting or bio-methanation within their premises as far as possible. This SWM Rules, 2016 embodies one of the principles of integrated waste management of reducing and reusing the waste at source.

Rules 5- 16 detail the responsibilities of all the authorities accountable for the management of solid waste. They clearly specify the functions and duties of all the ministries, various departments and bodies encompassed for integrated solid waste management process.

The SWM Rules, 2016 have also enhanced the duties and responsibilities of manufacturers and producers of non-bio-degradable products, making it mandatory for them to provide financial assistance to the local authorities for setting up waste management systems. They further require such producers to also place a system for the collection of any packaging used by them which is non-bio-degradable. The above Flowchart, shown in Fig.1, gives an overview of the SMW Rules, 2016, detailing the incorporation of the basic principles of an integrated waste management system.

IV CONCLUSION

The SWM Rules, 2016 are, thus, wide-ranging and have enacted the requisite polices and legislative framework, which paved the way for the implementation of an effective and integrated system of managing solid waste generated. This is based on the hierarchy of managing the waste in a manner which minimizes the need of disposing while incorporating ways to increase the recycling and reuse of the waste products. The ISWM concept is associated with the Reduce, Reuse, Recover, Recycle, Refine and Remanufacture approach, which is designed at augmenting the current management of waste from all segments that are responsible for the generation of waste, for example the individual homes, institutions both commercial and non-commercial, waste from construction activities, hospitals, gardening etc., involving all the parties engaged in the process of managing solid waste, i.e, the generators, the policy makers and the agencies responsible for the implementation of the procedures and policies.

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