

# Government Initiatives and Activities to combat the issues of Municipal Solid Waste Management in India

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**Abstract:** The term, waste can be defined as, the items or materials which are no more in use and also not expected to be used in future. The waste is classified mainly in two forms which are solid and liquid. It is the responsibility of the local authority to collect, transport, treatment and disposal of waste in India. State and Central government are also responsible to overcome the issues of MSWM in India. In the last some decades, the waste management issue is increasing day by day with the increase of population. The Government has assigned roles and responsibilities to various ministries, boards, departments and local authorities for better management of municipal solid waste. Some major initiatives and activities like Swachh Bharat Abhiyan, Swachhata app, Mahatma Gandhi Swachhata Mission, Swachhata Helpline and Swachhata Survekshan has been initiated to involve the public to reduce the gap between the public and local body or government. Lack of technical knowledge is commonly found in most of local authority and because of this government has revised the Municipal Solid Waste Management Manual 2016 to assist States and cities to understand and effective implementation of Municipal Solid Waste Management System. With this, the government has also revised the Rules associated with the MSWM to improve solid waste management practices in India. The government was specially allocated the funds for the MSWM for all the states and local authorities. An entire review revealed that there is no doubt to say that the government are working and tries best at their level to reduces the problems of municipal solid waste management in India.

**Key Words:** Municipal Solid Waste Management, Role of Government, Rules, India

## 1. INTRODUCTION

Municipal Solid Waste is can be defined as all types of solid waste generated by households and commercial establishment or activities which are collected, transported, processed or treated and disposed by urban local bodies with proper planning. Besides domestic and commercial waste, there are many other wastes are available in municipal solid waste in developed countries because it report for a relatively small part of the total solid waste pour <sup>[1]</sup>. The major sources of municipal solid waste are households, commercial shops, educational institution like schools, colleges and universities, temples and road sweeping with this hospital waste became one of the major environmental troubles in the urban as well as in rural areas <sup>[2]</sup>. Waste is a burning issue in India as

well as for the entire world. With the rapid urbanization and high population growth, the MSW quantities are increasing in India at the alarming rate. According to the census of India 2011, the population growth rate in India in the last decade was 17.6% <sup>[3]</sup>. India generates 1,27,486 TPD municipal solid waste and out of this 89,334 TPD waste collected for treatment and disposal, but from this, only and only 15,881 TPD waste treated by the government in 2012 which clearly revealed that approx. 30% municipal solid waste is not collected by the authority which remains in the urban areas. It also shows that only 12 % waste was treated by the authority that means the remaining waste was dumped in open dumping sites. All the Indian cities have waste treatment facilities of 2637.20 TPD and for this they received and treated only 1505 TPD

means only 5.6 % of the total MSW generated. It reveals that only 57 % of whole the installed capacity is utilized, which indicates a remaining quantity of untreated waste directly dumped into open without any treatment <sup>[4]</sup>. Though, the local authority is affording for clean city, they are going fails into it mainly due to the lack of the Public Participation, the communication gap between local authority and Public etc. <sup>[5]</sup>. It is essential to initiate some activities at national level with planning to combat the problems of MSWM in India so government must have to initiate it because the government is having the all kinds of power, authority and rights to do anything. Many things are having the limitation to do for the citizen or local body due to the effecting of various factors or conditions. To reduce the problems, the government has assigned the responsibilities to various authorities and also initiated some activities in India.

## **2. ROLE AND RESPONSIBILITIES**

As the municipal solid waste management became the major issue for the country, the government must have the role in it. Indian government assigned the role and responsibilities of some ministries, board and local authorities in MSW management in India. Ministry of Environment and Forests is responsible for general aspects of MSW management and to draws up, directs the policy and legislation regarding waste management. Government of India gave the responsibility to the Ministry of Urban Development to prepare the Municipal Solid Waste Management Manual for Urban Local Body for easy and the environmental friendly municipal solid waste management. The Central Pollution Control Board has the responsibilities to coordinate SPCB's activities; to provide technical assistance and training to the personnel; to circulate information or order relating to waste management; to execute tasks given by the Government. The State Pollution Control Board have to plans a full program for prevention and control of air and water pollution; to inspect all realistic times, control equipment and process; to provide the permission to install landfill or incinerator. Local Authority is responsible to provide the service of municipal solid waste

management including waste collection from generation sources and road sweeping, transportation, treatment and disposal of municipal solid waste at the local level to operate disposal, recycling or composting facilities. Help to e-market development on city compost should be provided by the Department of Fertilizer, Ministry of Chemicals and Fertilizer and also to ensure promotion of Co-marketing of compost to companies. The Ministry of Agriculture will provide flexibility in Fertilizer control for manufacturing and selling of compost, circulate uses of compost in farm and to set up the laboratories for testing of compost prepared by local authorities. Ministry of Power should fix the rate of power generated from solid waste to energy plant and make sure to purchase power generated from these plants. It is the responsibilities of the Ministry of New and Renewable Energy Sources to support infrastructure development for waste to energy plant and also to provide the subsidy or incentive for it.

## **3. MAJOR INITIATIVES AND ACTIVITIES:**

### **A. Swachha Bharat Mission:**

Today, our country facing one of the biggest challenges of management of MSW not only in the term of environmental and aesthetic problems, but also has the potential risk to public health due to the improper and non scientific handling of municipal solid waste. Accepting the importance of this challenge in India, behalf of the government of India, our Indian Prime Minister Shree Narendrabhai Modi launched "Swachha Bharat Mission" on 2<sup>nd</sup> October 2014 with the goal to make our country clean and open defecation free by 2<sup>nd</sup> October 2019 as a mark of tribute to Mahatma Gandhi on his 150<sup>th</sup> birth anniversary. It is also the goal to achieve the 100 % scientific management of municipal solid waste by 2019.

### **B. Mahatma Gandhi Swachhata Mission:**

The Government of Gujarat has launched Mahatma Gandhi Swachhata Mission to achieve the mission, goals and objectives which is same as the Swachha Bharat Abhiyan launched by the Government of India. The dream of the Mahatma Gandhi was all the cities, towns and villages should be clean, to

have completely worked sewerage system important for improved health. The environment of the cities, towns and villages should be clean for their living. Under the Mahatma Gandhi Swachhata Mission, Government has released the of Rs. 1 crore to all the Municipal Corporations of Gujarat State and Rs. 55 lakh, Rs. 45 Lakh, Rs. 30 Lakh and Rs. 20 Lakh released to the A, B, C and D category on Municipalities of Gujarat. The Government has released this fund to initiate the mega cleanliness movement in the respected cities. The Government is also working in a full flag to achieve the goal of SBM with reference to municipal solid waste management <sup>[6]</sup>.

#### **C. Swachhata App:**

**The Swachhata App** is a 4<sup>th</sup> generation mobile and web application by which is initiated by the Ministry of Housing and Urban Affairs with the association of Swachha Bharat Mission. This app is initially launched in 4041 corporations, towns and cities of India. Anyone can download the app from the Google Play Store or from other sources and file complaint on app if he/she found dumped waste or overflowing dustbins or other cleanliness regarding problems and want to clear it and for that person need to just click the picture and post it to on the Swachhata App. Once a complaint has been posted, it will automatically forward to the concerned municipal authority. For this, all the urban local authority mapped to this app. For the quick resolution of the complaints, the time was fixed for various activities like overflowing dustbins, garbage dumps and sweeping has to done within 12 hours of filing of a complaint; 12 hours for no water supply or electricity or blockage in public toilets; 48 hours for dead animal lying on the road. All the complaints received will the regular updates and notifications on the status of their complaint <sup>[7][8]</sup>.

#### **D. Swachhata Helpline:**

The Government also started the four digits Swachhata Helpline “1969” to involve more citizens to reduce solid waste management or swachhata regarding issues through one call. Here the citizen can call and file the complaint, inquire about information of Swachh Bharat Mission in

urban areas including the current status of their complaint and also for their applications for construction of toilets <sup>[8]</sup>.

#### **E. Swachha Survekshan:**

Ministry of Housing and Urban Affairs (a former Ministry of Urban Development) conducting the Swachha Survekshan since 2016. This is introduced to encourage cities to improve their urban sanitation, including open defecation and to reduce the problems regarding solid waste management by improving waste management practices. The objectives of survekshan are to encourage large level participation of citizens; to create awareness among all segments of society; to work together to make towns and cities a better place to survive. It is also encouraging a spirit to the cities and towns to improve their service for society to create city clean through healthy competition between them. The Ministry conducted “**Swachh Survekshan-2016**” for the rating of 73 cities in January 2016; “**Swachh Survekshan-2017**” for 434 cities in January-February 2017. “**Swachh Survekshan-2018**” is scheduled to assess more than 4000+ cities or towns in January 2018-March 2018. Participation of citizen is reinforcing in survey in to ensure significantly higher levels of citizen participation <sup>[9]</sup>.

#### **F. Municipal Solid Waste Management Manual:**

Ministry of Urban Development with the partnership of The Government of Germany published the revised **Municipal Solid Waste Management Manual 2016** to assist States and cities to understand and effective implementation of Municipal Solid Waste Management System with the association of Solid Waste Management Rules, 2016. This manual is prepared as a practical handbook and guideline for the Local Urban Body as well as it can also useful to the policy makers, planners and professionals to achieve the goals of the Swachha Bharat Mission. It can also help to take effective decision for MSW management in the urban as well as rural areas. This manual provides the comprehensive information on municipal solid waste generation, segregation, collection, transfer, transportation, treatment and disposal. The

Municipal Solid Waste Manual 2016 broadly categorized into three sections which is briefed as below

**Part I: An overview**

Part-I provides the most important features of the Municipal Solid Waste Management Manual particularly for decision makers, designated office bearers and senior administrator at various phases of authority. It has also made available to the decision makers with a summary of the main problems of municipal solid waste management. The manual encourages thoughtful challenge and chances by providing information to them to initiate require processes to achieve the goals<sup>[10]</sup>.

**Part II: The Manual**

This part is the main section of the manual which is essential for the financial and technical heads of the department of Urban Local Body, health officers, technical staff, and private workers. It provides the comprehensive explanation of technologies for solid waste treatment and processing; applicability of developing technologies and planning to carry out solid actions in the direction of institutional strengthening and financial management foremost to sustainable municipal solid waste management. This part comprises of seven chapters<sup>[11]</sup>.

**Part III: The Compendium**

This section consists the rules and guideline regarding solid waste management, practices carried out at international level to minimize the waste, the significant and full details and designs of landfill and compost plants. In this, the example of integrated municipal solid waste management of Andhra Pradesh State is included. It is mainly for the working staff, private operators, experts and training institutes, who want to know in details about various rules and specifications of design to take the up to date decisions<sup>[12]</sup>.

**G. Funds Allocation:**

It is essential to allocate the funds to the state or local urban bodies to enhance the goals and objectives of Swachha Bharat Mission to fulfill before 2<sup>nd</sup> October, 2019. Implementation of Swachha Bharat Mission (Urban), the estimated cost

based on unit and per capita costs for its various components is Rs. 62,009 Crore. The GoI contribute to according to the approved funding pattern the amounts is Rs. 14,623 Crore. A minimum additional amount is equivalent to 25% of GoI funding and Rs. 4,874 Crore to be contributed by the States Government<sup>[13]</sup>.

The Government of India allocated Rs. 4,260 crore in year 2014-15; in 2015-16, a budget was allocated just Rs. 2,625 crore, but it was increased upto Rs. 6,525 crore in revised estimates; Rs. 9,000 crore was allocated in the year 2016-17 but it was revised to Rs. 10,500 crore by the end of the year; Rs. 14,000 crore allocated in year 2017-18 and to achieve Swachh Bharat by October 2, 2019, Rs. 30,000 crore would be required in 2018-19<sup>[14]</sup>.

**H. Rules Regarding Municipal Solid Waste Management in India**

Some of the rules associated with Municipal Solid Waste Management revised by the Indian Government to implement better solid waste management practices in India which are discussed below:

**i. Solid Waste Management Rules, 2016**

Ministry of Environment, Forest and Climate Change has revised the Municipal Solid Waste (Management and Handling) Rules, 2000 to Solid Waste Management Rules, 2016. There are several important modifications like applications of rules extended to the other than municipal areas, duties of waste generator for solid waste management, collection and disposal of sanitary waste like diapers, sanitary pads and other disposal items separately and not to dump with common waste, Duties of Ministry of Urban Development, Central Pollution Control Board, State Pollution Control Board and Urban Local body have been assigned, responsibility of government to support in marketing and utilization of compost, promotion of waste to energy plant to reduced waste and with this to recover energy from waste, criteria and standards for waste treatment facility and pollution Control has been mentioned and added newly in the rules. There are many other things described in the rules which can very helpful to reduce the solid waste

management problems and may improve the SWM system with effective management <sup>[15]</sup>.

#### **ii. Plastic Waste Management Rules, 2016**

Plastic waste and their management became the major issue for the world as well as in the India. For the reduction of plastic use and better plastic waste management, Plastic Waste (Management and Handling) Rule, 2011 which is only applicable to the Municipal area that is revised by the Ministry of Environment, Forest and Climate Change into Plastic Waste Management Rules, 2016 which is applicable to every waste generator, local body, Gram Panchayat, manufacturer, importers and producer. The main changes or features of the rules are prohibition on thickness of plastic carry bag made of virgin or recycled plastic which increased from 40 micron to 50 microns in new rules; responsibilities of waste generator is assigned and in case of failure, spot fine is in the provision; responsibilities also given to the plastic producer and brand owner to work out for waste collection system for collecting back the plastic waste within a period of six months in consultation with concerned authority and the department and implement within two years after that; street vendor and retailers can't give the plastic carry bag free to the consumer. If they wish to give carry bag to the consumer then they have received the license from the local municipal authority and for that they have to pay Rs. 48,000 per year in Local Municipal Authority. After getting the license, retailers or vendor can take the charge from consumer assigned by local authority <sup>[16]</sup>.

#### **iii. Construction and Demolition Waste Management Rules, 2016**

The Construction and Demolition Waste Management Rules, 2016 is applicable to individual or organization or any authority that generates construction and demolition waste like building materials, debris and other waste generated from new construction, repair and demolition of any civil structure. According to this rule, waste generators are responsible to collect the waste generated by them and have to hand over the local authority or concerned agency. Who are generating more than 20 tons in a day or 300 tons waste per month, they have

to submit a waste management plan and need to receive approvals from the local authority before starting the work. Responsibility also given to the service providers like local authority is responsible for appropriate waste management of construction and demolition in its jurisdiction with insertion of proper containers for collection, transportation, processing and disposal. The site of C & D waste processing or recycling should be away from habitation clusters, forest areas, water bodies, monuments, National Parks, Wetlands and places having the important cultural, historical or religious interest. In this, the duties of State Government or Union Territory Administration, SPCB/PCC, the Central Pollution Control Board and the Central Government described and also gave the timeframe for implementation of the provisions of the rules <sup>[17]</sup>.

#### **iv. Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016**

Hazardous and Other Wastes (Management & Transboundary Movement) Rules, 2016 have been published by the Ministry of Environment, Forest and Climate Change in 2016. The hierarchy of Hazardous and other waste is in the sequence of prevention, minimization, reuse, recycling, recovery, co-processing and safe disposal has been included because it should not be mixed with municipal waste. According to the rules, source recovery and disposal of hazardous waste will be environmental as well as industry friendly manner. It is first time prepared to differentiate between hazardous waste and other wastes. The waste which is recognized as a source for recycling and reuse like waste tyre, paper waste, metal scrap, used electronic items, etc. are defined as the other waste. Some kinds of wastes are prohibited for import. Due to this resource, the industrial processes will be enhanced and reduce the load on the virgin source of the country <sup>[18]</sup>.

#### **v. E-Waste Management Rules, 2016**

The said rule is applied to components, consumables, spares and parts and equipments listed in schedule I. The responsibility of manufacturer, dealer, refurbisher and Producer Responsibility Organization (PRO) is introduced into the rules. E-

waste collection approaches also are mentioned in these rules. Provision of authorization of Pan India EPR replaced from CPCB to state wise EPR authorization. As an economic instrument, Deposit Refund Scheme has been bringing in where the producer takes the extra amount from consumer as a deposit at the time of sale and returns this amount with interest at the end-of life when electrical and electronic equipment is returned. The manufacturer is responsible to collect e-waste generated for recycling or disposal and look for approval from the State Pollution Control Board. If Producer can give the responsibility to the dealer then the dealer can collect the E-waste and refund the amount of Deposit Refund Scheme on behalf of the producer. State Government's role has been introduced to ensure the safety, health and skill development of the workers working in the dismantling and recycling activity. The various responsibilities have been also assigned to the State's Department of Industry, Department of Labour and local urban body. The State Government is responsible to set up incorporated plans for effective execution of the provisions and have to submit an annual report to MoEF. The transportation of e-waste should be carried out with a document in three copies from sender having the details. Provision of penalty for violation of the Rules has also been introduced as a Legal responsibility to cause damage to the environment or third parties because of improper e-waste management<sup>[19]</sup>.

#### **vi. Bio-Medical Waste Management Rules, 2016**

The bio-Medical waste management approach of the country will be changed through implementation of this new rule. The coverage has increased for pre-treatment of lab waste, blood samples, etc. in the new system which will help the Clean India Mission. According to the rule, biomedical waste should not be mixed with municipal waste or other waste so its scientific disposal should be done through the segregation, collection and treatment in an environmental friendly manner which minimize the adverse effect on the health of workers as well as on the environment. For the proper disposal of bio-medical waste, hospitals needs to set up an effective management system for common bio-

medical waste treatment and disposal. The responsibilities of the Central Government, State Government, Local Authority, waste generator, treatment and disposal facility provider assigned in the rules. There are total 198 common bio-medical waste treatment facilities are in working manner and 28 are in under construction. There are 21870 HCFs are having the own treatment facilities with them and 1,31,837 HCFs are using the common bio-medical waste treatment facilities<sup>[20]</sup>.

### **3. CONCLUSION**

It is fact that Municipal Solid Waste Management problems are everywhere in India and in many other countries that become the burning issue of the India as well as the entire World. It is essentially required the participation of Government to combat the MSWM problems. After reviewing, it was revealed that the Indian Government has initiated many good activities and initiatives that may improve the solid waste management practices in India and can reduce the problems of municipal solid waste management in India with the proper planning and using resources made available by Indian Government. There is no doubt that the Indian Government is doing at their level best.

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