

## **1. Solid Waste Management: Challenges and Way Forward**

### **Why in News?**

- Solid waste management is a major problem in India, where urbanisation, industrialisation, and economic growth have resulted in increased municipal solid waste generation.
- The burgeoning population and the improvement in living standards of the people have only compounded this problem.

### **Legal Framework in India:**

- Solid Waste Management Rules, 2016 delineate the responsibility of the different stakeholders including the Ministries, Pollution control Boards, Local bodies, etc.
- The responsibility of the waste generator lies essentially in proper segregation of the waste which is the core requirement of effective solid waste management.
- The rules demarcate the requirements of the key components of the solid waste management system besides fixing the timeline for achieving the same.

### **SWM – Key Components:**

- Stage 1: segregation of waste by waste generator into dry and wet waste
- Stage 2: Door-to-door collection of waste and transportation of segregated waste
- Stage 3: setting up of material recovery facilities for dry waste to recover recyclables like Plastic, Paper, Metal, Glass, etc.
- Stage 4: setting up of waste processing facilities viz. Compost, bio methanation and waste-to-energy plants for resource recovery and energy generation
- Stage 5: setting up of waste disposal facilities – Landfills.
- The main objective of an efficient SWM system is to maximise resource recovery and energy generation from waste and minimise waste disposal in landfill.

### **Status of Solid Waste Management:**

- The overall solid waste generated in the country is 1, 52,076 tons per day. Of this, 98.5% of waste is collected, only 35% of waste is treated and 33% of waste is land filled and one-third of the total waste generated in the country remains unaccounted.

### **SWM Initiatives:**

#### **1. Initiatives taken by CPCB:**

- ✓ Guidelines on Legacy waste

- ✓ Guidelines on Buffer Zone
- ✓ Guidelines for Management of Sanitary Waste
- ✓ Selection Criteria for Waste Processing Technologies.

## **2. Setting up of Waste-to-Energy Plants**

### **3. Development of Model Cities:**

- ✓ Model cities which include Pune, Indore and **Ambikapur (Chhattisgarh)** have been developed which have implemented efficient methods for collection, segregation, and waste processing facilities.

### **4. Increased Judicial Intervention:**

- After the enactment of the NGT Act, 2010, in past few years increasing judicial intervention in ensuring compliance with the provisions of SWM Rules by the various stakeholders. Some of the orders include:
  - ✓ Every State and Union Territory shall enforce and implement the Solid Waste Management Rules, 2016 in all respects and without further delay.
  - ✓ It shall be mandatory to segregate prior to incineration relating to the quantum of the waste.
  - ✓ It shall be mandatory to provide for a buffer zone around plants and landfills sites.
  - ✓ It will be obligatory on the part of the State, Local authorities to create a market for consumption of RDF.
  - ✓ There shall be complete prohibition on open burning of waste on lands, including at landfills sites.

### **Challenges:**

1. Segregation of waste at source by waste generators.
2. Lack of infrastructure for collection and transportation of waste
3. Availability of land for setting up of waste collection and transportation facilities
4. Budgetary provisions for the waste Management
5. Techno-economically viable solutions for fresh and legacy waste
6. Management of legacy waste
7. Rural areas not covered in most of the States/UTs
8. Enforcement issues

### **Way Forward:**

1. Creating public awareness for involvement of different stakeholders for SWM.

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2. Development of ULB-wise action plan for collection, segregation, transportation and processing of waste.
  3. Emphasising on setting up of waste processing facilities rather than waste disposal facilities as in the case of Chhattisgarh
  4. Giving fillip to research and development activities with focus on resource recovery from waste
  5. Capacity building in various regimes of SWM
  6. Laying down of an appropriate governance framework at State and district levels.
  7. Clear allocation of responsibility to ULBs and waste generators for setting up of infrastructure and for involving informal sector in waste collection/segregation
  8. Adequate technical support to ULBs for processing technology and best practices in waste management.

