

Green Solid Waste Management

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Abstract – Solid Waste Management refers to the process of minimizing the volume of solid waste generated, recycling unwanted supplies, collecting solid waste, handling hazardous solid waste, and ultimate discarding of solid waste. We intend to evaluate the key MSWM criteria while also give a complete analysis of Waste generation rates, characterization, collection, and treatment options in India in this study. MSWM's current situation in Indian states and major cities is also discussed. The study indicates that in developing countries like India, the installation of decentralised solid waste processing units in metropolitan cities/towns and the development of the formal recycling industrial sector are critical. Whether domestic, industrial, or other wastes are of higher or lower values, they should be regenerated. In this work, we aim to evaluate the primary MSWM criteria, as well as provide a full analysis of MSW creation, characterization, collection, and treatment alternatives in India.

Key Words – Solid Waste Management, Scientific Landfill, Solid Waste Collections, Green Solid Waste.

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I. INTRODUCTION

“Solid Waste” comprises unwanted and discarded materials from houses, street sweeping, and commercial and industrial operations. Increase in urban population and changing life styles lead to the generation of solid waste. Solid waste is normally diverse, consist of a variety of vegetables, food items, paper, plastics, rags, & glass, among many other materials. While solid garbage is discarded in open areas on land, this has an adverse effect on the environment, ground water, and human and animal health. Wastes are resources that are no longer mandatory and could be economically utilized. This can change the form of a solid, a liquid, or a gas. They come from internal activities of agriculture, industry, as well as household activities, among several others. Domestic, industrial, commercial, clinical, construction, nuclear, and agricultural waste are classified into the following categories based on its origin. Waste is classified as inert, noxious, or flammable predicated on it's own traits. If these toxins really aren't treated, those who damage the environment, water, land, and solid waste.

1.1 Solid Waste Management:

Solid-Waste Planning is the technique of collecting, treating, and eliminating solid waste that has served its purpose or is no longer useful. Unsanitary conditions could occur due to improper municipal solid waste disposal. These scenarios can lead to serious environmental degradation and epidemics of

vector-borne disease, which seem to be diseases spread by rodents and insects. The technical challenges with solid-waste management include numerous. They also present dozens of new administrative, economic, and social challenges that are faced.

1.2 Collection and Transport:

Waste collection is the method of waste management that includes collecting waste from a premises of source to one of several final disposal sites. As part of a municipal landfill diversion programme, kerbside collection of recyclable materials that are technically not waste is already included in bin collection.

1.3 Problems Caused Due to Solid Waste Management:

- Soil, Land, Air and Water Pollution
- Unscientific treatment
- Improper collection of waste
- Ethical problem of waste
- Insect, flies, and mosquitoes
- Spread of diseases- animals and human

- Harmful effects on waste pickers and other humans
- Affects socio-economic conditions
- Loss of biodiversity
- Description of astatic and commercial values
- Global warming – methane production.

1.4 Needs of Solid Waste Management:

- To stop the spread of infectious diseases
- To control different types of pollution, i.e., air pollution, soil pollution, water pollution etc.
- To conserve all our environmental resources, including forest, minerals water etc.
- To recycling of hazardous wastes for further production.
- Recovery and resources
- Overcomes the problems

1.5 Environmental and Health Impact of Waste Dumping

- Waste dumps have adverse impacts on the environment and public health.
- Open dumps release methane from the decomposition of biodegradable waste under anaerobic conditions. Methane causes fires and explosions and is a major contributor to global warming.
- There are also odour challenges along with leachate flow onto receiving environments.
- Odour is a major challenge, particularly during the summer, when temperature in India can exceed 45°C.
- At dumps, discarded tyres collect water, allowing mosquitos to reproduce and spread diseases like malaria, dengue fever, and West Nile fever.
- Foul smell and accidental fire hazards

2. GREEN SOLID WASTE (INTEGRATED APPROACH TO CLEAN MECHANISM):

The virtual revolution of society and culture already has proven itself with a crucial development of the 21st century, affecting every area of daily life, the economy, policy, and so on. This extends to debris

management, but also waste prevention and the improvement in the way of a circular economy.

Digital technologies promise a more effective waste management regime, including safer, more transparent, more cost-effective, and resource-efficient operations, better sourcing of valuable materials in waste streams, and a strong relationship to other sectors in a future circular economy.

2.1 Green concept:

Digital Technologies in Current Waste Management: The mass acceptance of digitalisation technologies is mainly due to significant gains in miniaturisation, enhanced computing capabilities, and lower costs. Waste management is no exception, and it is benefiting from the advancement of digital technologies too though.

Digital Transport: Driving forces can take the form of opportunities, where the application of digital technologies directly improves a given context or process, or challenges, where current negative developments can be countered or alleviated. Most of these drivers are not uniformly distributed, instead they act differently in different regions.

According to their unique characteristics such as population, economic strength, etc. Drivers identified in this regard are urbanisation, demographic change, skill shortages, novel legislation, cost pressures, expectations from citizens and customers, and new business models

2.2 Digital collection:

Research techniques of digital objects are known as the digital collections. These could be in any of following categories:

- Digital Transport.
- CNG vehicles.
- Electric Battery based Ghanta Gadies.
- Digital Software like, google Maps.

2.3 Awareness of digital green solid waste:

- Raising people's awareness about municipal solid waste management is an essential component of environmental strategy implementation.
- It's crucial for key stakeholders are aware of a city's waste management activities and understand the benefits of proper solid waste management.
- While raising awareness about solid waste management presents several issues, a

range of communication approaches can be employed to solve them.

- Raising awareness about a city's municipal solid waste management activities and the benefits of proper solid waste management can result in increases in:
 - Use of city waste collection services by the public and private sectors.
 - Funding for waste management from local elected officials.
 - Adoption and enforcement of local waste management policies.
 - Support for local-level activities from national or provincial governments.
 - Role in community awareness efforts leading towards waste segregation at its original place and a reduction in waste.
 - Each of these outcomes can assist the waste management authority reduce waste management's adverse effects on health, the economy, the environment, and society.
 - Raising public awareness of a city's waste collection and disposal activities and the benefits of proper solid waste management can relate to:
 1. Social Media
 2. Bulk Message
 3. Television advertainment
 4. Street Play
 5. Mobile Van
 6. Digital Marketing
 7. Awards and Competition.

2.4 Awareness in current scenario:

- a. Spread needs of waste management
- b. In every school society need one guess lecture
- c. Banners holders
- d. Public transportation
- e. In every ticket print

- f. Newspaper.
- g. Qr code

2.5 Working model:

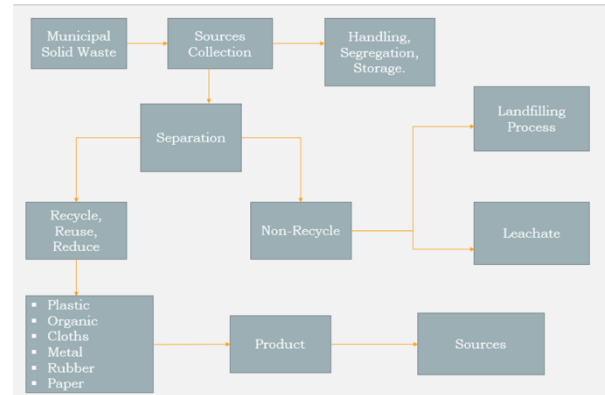


Figure: Working Model.

2.6 Employment Generation:

- In Current scenario there is very rare in employ is generated. India's workforce ratio While generating a cleaner environment and ensuring dignity and safety for millions, 1,50,000 tonnes of municipal waste might produce 6,00,000 to 7,50,000 jobs. In most cities, our waste is collected and managed by understaffed organisations with numerous mandates (one of which is solid waste management). There are no financial incentives to switch to the more complex segregated waste system. Users are frequently given little or no training. Contractors' present incentive structure, which pays more for weight carried and distance travelled, encourages dumping rather than management.





Figure: Employment Generation.

3. CONCLUSION:

- To implement the environmental management plan.
- Needs of Technology.
- To understand of Green Technology and needs of it.
- To ensure regular operation and maintenance of pollution control devices.
- To minimize environmental impacts of operations.

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