

17. Issues of Solid Waste Management in Maharashtra

T. U. Kendre

Department of Chemistry, Toshniwal Arts Commerce and Science College, Sengaon,
Dist - Hingoli (MS) India.

V. D. Shinde

Department of Zoology, Toshniwal Arts Commerce and Science College, Sengaon,
Dist - Hingoli (MS) India.

Abstract

Present paper discuss on the opportunities and challenges of waste management system. The major challenges for waste generation and inadequate waste collection, transport, treatment and disposal and proper recovery, reuse and recycle system for non-biodegradable waste. As continuously increase the population, technology, industrialization, digitalization and urbanation rapidly create large volume of biodegradable waste and non-biodegradable, hence it causes hazardous effect on environment and humans. The composition of the wastes within the cities is heterogeneous it consist of biodegradable and non-biodegradable materials like e-wastes, plastic, synthetic resin materials, hair designer's wastes, and domestic waste. The processing of waste create opportunity start business for preparation of manure from biodegradable waste, generation biogas, recovery of metals and reuse of electronic parts from E-waste. Waste separation at collection and use of specialized waste treatment to separate recyclable components has important role. Design engineered landfill sites for dumping of waste to generate waste-to-energy. The potential for energy generation from landfill via methane extraction or thermal treatment is a major opportunity. The proper disposal of solid waste need environmental professionals to improved waste management systems.

Keywords:- Environmental Pollution, Biodegradable, non-biodegradable, E-waste.

Introduction

Maharashtra state is economic engine of the country and has played a significant role in the development of nation. Maharashtra is also leading state in the country in terms of agriculture, Industrial products, trade and transport, education, tourism, culture, politics as well. As a result Maharashtra remains one of the best developed and prosperous state in the nation. Mumbai, Pune, Nagpur, Kolhapur, Solapur, Aurangabad have emerged as manufacturing, finance service sector, automobile hub, dynamic centre of growth and development.

In the Maharashtra state more than 802.38 lakh metric tonnes of waste was generated per annum of which only more than 44 % were treated. In Maharashtra state there is no arrangement for segregation of municipal waste in various categories. Today Maharashtra state is in need of participation of various NGO's as well as citizens to take part actively in the segregation and treatment on the hazardous waste as an employmental opportunity in the present era.

According to the American veterinary Medical Association "waste is everything that is no longer has a use or purpose and need to be disposed of". This means that waste is anything which we cannot store with us. But by proper processing it can be stored or reused for many purposes. Waste is a potential energy which can be converted into kinetic energy by simply converting it in different forms.

Maharashtra has highest level of urbanization in India. Mumbai, Nagpur, Pune Nashik, Aurangabad, Kolhapur, Solapur, Amravati, Nanded are the most urbanised districts in the Maharashtra. The increasing rate of urbanization lead to industrial growth among the state. Both urbanization and industrial growth in the state creates tonne of various kinds of waste in the environment. The various waste from household or industry thrown in the environment depending upon the the constitution of waste it hazard the environment and destroy the environmental balance.

Types of Waste

Depending upon the sources, its properties and its effect on environment it can be classified as:

1. **Industrial waste** - These are the waste created in small scale or large scale industry. e.g. glass, chemicals, plastic etc
2. **Commercial waste** - Commercial waste are produced in the schools, colleges offices, shops etc. e.g. papers, used stationary etc.
3. **Domestic waste** - The different household waste which are collected during household activity like cooking, cleaning etc. e.g. vegetables, foods etc
4. **Agricultural waste** - various waste produced in the agriculture field. e.g. cattle waste, weed, husk etc
5. **Biodegradable waste** - These are the waste come from our kitchen or any from other household activity. Biodegradable waste decompose them self as they contain some amount of moisture in it over a period of time depending on the material. The biodegradable waste can be decompose through microorganism convert in to simple forms which could be used as manure in agriculture.

6. **Non Biodegradable waste** - These are the waste which include old newspapers, Broken Glass pieces, plastics etc. Non biodegradable waste is also called dry waste. It can be recycled and can be reused. Non biodegradable waste do not decompose by themselves it can be degraded by adopting some methods but the process is too long and hence are major pollutants in the environment.
7. **E - waste** - since from last decade a big issue of e-waste also became a big problem to the environmental pollution. Electronic waste includes computers, televisions, mobiles, copiers, fax machines etc. The E- waste consist of precious metal like silver, gold, platinum and various metals, hence E -waste act as artificial mine for recovery of metals. It contains hazardous metals which dump on nature causes the ecological and environmental problems. It is need to recycle, reuse and recovery of metals to minimize the effect of E-waste. Extraction of metals by chemical methods is the best way for collecting heavy metals from the waste.

Apart from this animal by-products waste, bulky waste, business waste, chemical waste, clinical waste, construction and demolition waste, gaseous waste, human waste, nuclear waste, packaging waste material waste are some other types of waste which enhance the hazardous effects on the ecosystem.

Waste Collection and processing

The collection system includes various equipments such as vehicles, containers some health precautionary kits. During collection of waste segregation is a major part which avoids many problems in further processing. For the purpose of segregation government or private company can offered some expenditure along with some bonus to the society, company or the other sources from which collection of waste occurs. By adopting this method it became easy task to distinguish the waste in different parts like organic waste, decomposable, non-biodegradable, and hazardous. Depending upon the distinguished waste material it is easy to process and convert it into recycled process. Though it look like a simple task but there are several problems and concerns like labour incentives, labor unskilled, high turn-over rates, few prospectus for mechanical replacement of manual labour, injuries and poor working conditions, Limited career opportunities, frequency of services, containers and storage issues particularly for commercial and industrial waste, location of pickup the waste, special waste system along with this there are technology issues. The separated waste has properly transport to engineer landfilling site, recovery plants, and incineration sites. By adopting proper managing skill this offers a best opportunity for employment in the present era.

Conclusion

As population increases, technological development, urbanization, industrialization specifically in the development of solid waste collection and processing through inadequate landfilling incineration methods. The general people does not aware the effect of solid waste on environment and human health. There is generally a lack of responsibility towards waste in the community. There is a need to cultivate community awareness and change the attitude of people towards waste, as this is fundamental to developing proper and sustainable waste management systems. Government has prepared strict law for solid waste management, Most of solid waste properly extracted valuable material which has economic value. Biodegradable waste can be treated with the development of engineered landfill and waste-to-energy facilities. The availability of appropriately trained people in the waste management sector. Sustainable processing of biodegradable solid waste get methane and alcohol etc. The strategy for non-biodegradable solid waste processed to minimize the effect of reduces the biohazards chemical through recycle, reuse and recovery of precious part from it. It is need all citizen to know responsibility and effect of solid waste on human and environment. Even all school children should know the effect of hazardous waste and waste management. The monitoring and evaluation of solid waste system by specific agencies for sustainable waste treatment plants.

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