

Waste Management in India- A Growing Problem

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ABSTRACT:

Waste has always been a perennial problem and its management remains a big predicament up to this day, since the amount of solid waste increases as populations rise and economics develop. Today, the total amount of waste generated annually worldwide is more than 4 billion tones; the municipal solid waste is between 1.6 to 2.0 billion tones. At present, India produce more than 62 million tones of solid waste annually, of which 80 percent is disposed of indiscriminately at dump yards in an unhygienic manner by the municipal authorities leading to problems of health and environmental degradation.

KEYWORDS: waste management, disposal system, municipal communities.

INTRODUCTION:

Waste management is the generation, prevention, characterization, monitoring, treatment, handling, reuse and residual disposition of solid wastes. There are various types of solid waste including, municipal, agricultural and special like hazardous and household etc. The term usually relates to materials produced by human activity, and the process is generally undertaken to reduce their effect on health, the environment, or aesthetics.

The initiative was first done by Waste Management Inc. in 1971. It is mainly based in North America. The major services include the waste, recyclables, yard debris, and hazardous materials collection, hauling, treatment and disposal, Dumpster rental, Portable toilet rental and security services.

Today, not only abroad, but, even India has several start-ups for waste management.

WASTE MANAGEMENT:

“Waste management or Waste disposal is all the activities and actions required to manage waste from its inception to its final disposal. This includes amongst other things, collection, transport, treatment and disposal of waste together with monitoring and regulation. It also encompasses the legal and regulatory framework that relates to waste management encompassing guidance on recycling etc.”

OBJECTIVE OF STUDY:

The study has been undertaken with the following main objectives:

- To define Waste Management and disposal system.
- To analyse the Waste problem faced by public/ private sector.
- To analyse the impact of waste on environmental conditions.
- To suggest measures for overcoming the problems of waste management.

METHODOLOGY:

The study is primarily based upon the secondary data. For this extant literature related to the topic from different databases, websites and other available sources were collected. A systematic review of collected literature was done in detail.

WASTE MANAGEMENT HIERARCHY:

We should follow the waste management hierarchy when choosing a waste option. The waste hierarchy can help you to choose the least environmentally damaging option:

- **Reduce:** The most cost-effective option is to cut the amount of waste we produce in the first place- see reduce your business waste to save money.
- **Reuse:** Products and materials can be reused by your own business or another organization- see reuse your business waste to boost profits.
- **Recycle and Compost:** These options ensure that benefits is still gained from goods and materials that have reached the end of their useful life- see how to recycle your business waste and about producing and selling compost.

- **Recover energy:** Some facilities use waste to generate energy or produce biofuel- see recovering energy and producing fuel from waste.
- **Dispose:** The least sustainable option is to bury waste at landfill sites or burn it without recovering energy, as these do not lead to any benefit from the waste- see how to dispose of your waste.

You must declare on your waste transfer note or hazardous waste consignment note that you have applied the waste management hierarchy.

METHODS OF WASTE DISPOSAL:

Although, there are many methods available to disposal off waste. Let's take a look at some of the most commonly used methods that you should know about waste management.

- **LANDFILLS:** Throwing daily waste/ garbage in the landfills is the most popularly used method of waste disposal used today. This process of waste disposal focuses attention on burying the waste in the land. Landfills are commonly found in developing countries. Landfills give rise to air and water pollution which severely affects the environment and can prove fatal to the lives of humans and animals.
- **INCINERATION or COMBUSTION:** Incineration or Combustion is a type of disposal method in which municipal solid wastes are burned at high temperatures so as to convert them into residue and gaseous products.

The biggest advantages of this type of method is that it can reduce the volume of solid waste to 20 to 30 percent of the original volume, decreases the space they take up and reduce the stress on landfills.

This process is also known as thermal treatment where solid waste materials are converted by Incinerators into heat, gas, steam and ash.

➤ **RECOVERY and RECYCLING:**

Resource recovery is the process of taking useful discarded items for a specific next use. These discarded items are then processed to extract or recover materials and resources or convert them to energy in the form of useable heat, electricity or fuel.

Recycling is the process of converting waste products into new products to prevent energy usage and consumption of fresh raw materials. Recycling is the third component of Reduce, Reuse and Recycle waste hierarchy. The idea behind recycling is to reduce energy usage, reduce volume of landfills, reduce air and water pollution.

➤ **PLASMA GASIFICATION:**

Plasma is a primarily an electrically charged or a highly ionized gas. Lighting is one type of plasma which produces temperatures that exceed 12600° F. with this method of waste disposal, a vessel uses characteristic plasma torches operating at + 10000°F which is creating a gasification zone till 3000° F for the conversation of solid or liquid wastes into syngas.

➤ **COMPOSTING:** Composting is a easy and natural bio-degradable process that takes organic wastes i.e. remains of plants and garden and kitchen waste and turns into nutrient rich food for your plants. Composting, normally used for organic farming occurs by allowing organic materials to sit in one place for months until microbes decompose it. Composting is one of the best methods of waste disposal as it can turn unsafe organic products into safe compost. On the other side, it is slow process and takes lot of space.

➤ **WASTE TO ENERGY (RECOVER ENERGY):** Waste to energy process involves converting of non-recyclable waste items into useable heat, electricity or fuel through a variety of processes. This type of source of energy is a renewable energy source as non-recyclable waste can be used over and over again to create energy. It can also help to reduce carbon emissions by offsetting the need for energy from fossil sources. Waste – to-energy also widely recognized by its acronym WTF is the generation of energy in the form of heat or electricity from waste.

➤ **AVOIDANCE/WASTE MINIMIZATION:** The easier method of waste management is to reduce creation of waste materials thereby reducing the amount of waste going to landfills. Waste reduction can be done through recycling old materials like jar, bags, repairing broken items instead of

buying new one, avoiding use of disposable products like plastic bags, reusing second hand items and buying items that uses less designing.

There are certain waste types that are considered as hazardous and cannot be disposed of without special handling which will prevent contamination from occurring, Biomedical waste is one example of such. This is found in health care facilities and similar institutions.

INITIATIVES BY GOVT.OF INDIA:

- Bio-Medical Waste Handling Rules, 1998- Notified
- Municipal Solid Waste Management Rules, 2000- Notified
- Reforms Agenda (Fiscal, Institutional, Legal)
- Technology Manual on Municipal Solid Waste Management
- Technology Advisory Group on Municipal Solid Waste Management
- Tax Free Bonds by ULBs permitted by Govt. of India
- Inter- Ministerial Task Force on Integrated Plant Nutrient Management from city compost
- Income Tax relief to Waste Management agencies
- Public-Private Partnership in SWM
- Capacity Building
- Urban Reforms Incentive Fund
- Guidelines for PSP and setting up of Regulatory Authority
- Introduction of Commercial Accounting System in ULBs & other Sector Reforms

- Model Municipal Bye-Laws framed/ circulated for benefit of ULBs for adoption
- Financial Assistance by Govt. of India- 12Th Finance Commission Grants

RECOMMENDATIONS:

- Outsourcing of all activities under Solid Waste Management Services recommended by 12th Finance Commission for using grants
- ULBs to concentrate on segregation of waste at source
- Waste processing like composting, bio-methantion should be done through public-private partnerships/ private sector
- Final disposal viz. sanitary landfilling to be done under public private partnerships/ private sector
- Bio- medical waste to be managed by Central Bio- Medical Waste Management Facilities

CONCLUSION:

There is a need for a complete rethinking of “waste”- to analyse if waste is indeed waste. A rethinking that calls for

WASTE to become WEALTH

REFUSE to become RESOURCE

TRASH to become CASH

For clean India to work, country needs to solve its waste disposal problem. Instead of constructing new landfill sites, experts say the government should be looking into innovative methods to recycle waste. There is a clear need for the current approach of waste disposal that is focused on



municipalities and uses high energy/ high technology, to move more towards waste processing and waste recycling that involves public-private partnerships, aiming for eventual waste minimization- driven at the community level, and using low energy/ low technology resources. As you can see there are plenty of important things that you should waste management and disposal in order to ensure that you are safe, as well as that you are keeping the environment safe. It is your choices as to how you will dispose of waste, however it is always in your best interest to take a look at all of the options that you have available before making the choice.

REFERENCES:

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- Waste to Resources: A Waste Management Handbook