A Process on Solid Waste for Reutilization: A Review

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Abstract **- Solid waste management is a term we can defined as the doing regular things with discipline which is control of generation of waste materials, storage of waste, collection of waste, transport or transfer of waste, processing and disposal of solid waste materials in a way that best addresses the range of public health, conservation, economic, aesthetic, engineering, and other environmental conditions. In the result of its scope, solid waste management includes planning of the proper waste management, financial in waste management, engineering, and legal functions of the waste. Solid waste management practices can differ for rural and urban areas, for residential and industrial producers and for developing and developed nations. The paper is based on the comprehensive review of available literature on the reutilize and management of solid waste.**

Index Terms **- Solid Waste Management, Reutilization, Environment, Effect, Planning.**

I.INTRODUCTION

Municipal solid waste disposal and management is the most common problem in many countries. Rising incomes, rapidly growing but unplanned urbanisation, and changing lifestyles have resulted in increased volumes and changing composition like increasing use of plastic, use of paper and other inorganic materials of municipal solid waste in India. The volume of waste is projected to increase from 64-72 million tonnes at present to 125 million tonnes by year 2031. The decomposition of organic matter in the airless dark of waste at these dumpsites contributes to global warming by Green House Gas emissions. Planning and management of solid waste in the developing countries has remained a tough task due to the unchecked exponential growth of the urban population, lack of training in modern solid waste management practices, unplanned urbanisation, lack of awareness on the dangers of unsustainable waste management poverty, illiteracy, practice and poor government support amongst other factors.

An effective way for managing waste has to start with separation of solid waste at the source of generation and the treatment of different components of the waste in different ways, thereby reducing the residual waste that may or go to landfills. Once separation of biodegradable waste is accomplished and decentralised processing of this waste through composting. Solid Waste Management Rules (2016) provides a reasonable framework to address the different or multiple challenges of municipal solid waste management in India. This paper is reports the overview of solid waste and its management.

Objectives

- To assess the activities involved for the purposed and determine the type of nature and estimated volume of waste to be generated.
- To identify any potential environmental impact from the generation of waste at the site.
- To recommend appropriate waste handling and disposal measure routings in accordance with the current legislative and administrative requirement.
- To categorise waste materials where practicable for disposal considerations i.e. public filling area.
- To environmental protection, productivity, improvement, resource recovery, welfare needs of the huge population, and so on are also important with respect to waste management.
- reuse of residential, commercial, and industrial solid waste and waste from other sources.

- Reduce the improper disposal and littering of waste through a education, local governments and law enforcement.
- To waste prevention, recycling, reuse and recovery in waste management

Scope of Study

- A typical system of solid waste management includes separation, reuse, and recycling at the household level, waste collection and transport.
- The waste management is basically includes all those activities, which are required to manage waste from its beginning to the final disposal.
- Waste management mainly includes things like collection, transport, treatment, and the ultimate disposal of waste with a high level of monitoring and regulation.

II. EFFECT OF SOLID WASTE

Municipal solid wastes gather on the roads due to improper disposal system. People clean their own houses and litter their surroundings which give may result affects the community including themselves.

This type of dumping methods allows biodegradable materials to decompose under uncontrolled and unhygienic conditions. This produces foul smell and breeds various types of insects like mosquito and infectious organisms besides spoiling the aesthetics of the site. Industrial solid wastes are mainly sources of toxic metals and hazardous wastes, which may spread on land and can cause changes in physicochemical and biological characteristics thereby affecting productivity of soils with Toxic substances may leach to contaminate the ground water. In decline mixing, the hazardous wastes are mixed with garbage and other combustible wastes. This makes segregation and disposal all the more risky and difficult.

A) Health Hazard

If the solid wastes are not collected and allowed to accumulate, they may create unsanitary and unhygienic conditions. This may can lead to epidemic outbreaks.

Many diseases like cholera, diarrhea, dysentery, plague, jaundice, or gastro-intestinal diseases may spread and cause in loss of human lives.

In addition, improper handling of the solid wastes is a health hazard for the workers who work with waste cleaning process and come in direct contact with the waste.

B) Environmental Impact

If the solid waste are not treated or handled properly, then decomposition and putrefaction (decay) may take place.The organic solid waste during decomposition may generate obnoxious or intolerable odors.

III. KEY CONCEPT OF SOLID WASTE

The waste is any substance which is throw away after primary use, or is valueless, defective and of no use. Examples - include municipal solid waste like trash refuse and household, hazardous waste, wastewater such as sewage, which contains bodily wastes excrement, urine, feces and surface runoff, radioactive waste, and other waste.

- Zero Waste
- Cradle-to-Cradle & Cradle-to-Grave
- Eco-Efficiency
- Environmental Impact

Zero waste:

The New Zealand was one of the first countries to adopt a national goal of achieving zero waste and with their strategy the country was able to make considerable progress. There were faced some difficulties in measuring progress and success with regard to their goals, and so today New Zealand has replaced their zero waste vision with a strategy that focuses on reducing harm and increasing efficiency (Ministry for the Environment, 2010).

Cradle-to-Cradle or Cradle-to-Grave:

Cradle-to-grave (C2G) is the term used to describe a linear, one-way flow of materials from raw resources into waste that requires disposal. Cradle-to-cradle (C2C) focuses on the designing industrial systems so that materials flow in closed loop cycles it meaning that waste is minimized, and waste products can be recycled and reused. C2C mainly focuses on the going after simply dealing with issues by addressing problems at the source and by re-defining problems (McDonough et al., 2003). There are a three key tenets to C2C - waste equals food, celebrate diversity and make use of solar income.

Eco-Efficiency

An eco-efficiency structure focuses on the integrating economic and environmental dimensions of developments, activities processes, or activities, encouraging the creation of value with minimum impact. Eco-efficiency is not a specific framework or management system that can be used to manage the waste (WBCSD, 2000). It is a management belief that can be used in conjunction with other frameworks to measure the environmental and economic performance (Hellweg et al., 2005), showing how economic activity deals the with nature (Schoer & Seibel, 2002). Eco-efficiency can be described mathematically as follows:

$$\text{Eco-Efficiency} = \frac{\text{Value added}}{\text{Environmental Impact}}$$

Industrial Ecology

Industrial ecology (IE) is defined as the "An approach to the design of industrial products and processes that assess such activities through the dual perspectives of product competitiveness and environmental interactions" (Graedle & Allenby, 2010, p. 391). IE is similar to eco-efficiency in that it examines environmental and economic aspects of activities and processes, but it has a strong engineering-oriented focus on redesigning, integrating, and accepting the technology to be more sustainable in a fashion similar to the C2C. The discipline of IE has a some specific tools and techniques which are practical for use in waste management, particularly with the development of eco-industrial parks through industrial team effort.

IV. BASIC CONCEPTS 0F THE WASTE MANAGEMENT

1. Basic Concepts of the Waste Management is the result of the daily activities of humans gets introduced into the environment. The any type of waste management refers to a different methods of the waste and processes of how to manage the waste in an effective way starting from generation to the collection of waste to final disposal. The main purpose of waste management is to isolate different kinds waste and prevent it from spreading into the environment in order to protect the health of individuals, community and the families. The aesthetic value of a better perspective and a clean physical environment is also the important part to our emotional well-being.
2. The waste we produce each day can be classified under - Hazardous waste and Nonhazardous waste, liquid waste, biodegradable and non biodegradable waste, etc.

V. CONCLUSION

It is found that the with increases in the global population and rising demand for food and other essential, there has been a increase in the amount of waste being generated daily by each and every household. Waste that is not properly managed, especially solid waste, liquid waste from household and the community, are a serious health hazard and lead to the spread of infectious diseases. Management and disposal of solid waste has been investigated and the findings show that the municipal solid wastes are mostly composed of the biodegradables and non-biodegradable materials.

In summary, waste management is an important issue that needs governmental action quickly. At present there is very little awareness exists regarding this issue in our society. The practices of bringing fourth waste are too risky not only for today but they could be dangerous for our future generation.

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