A Feasible Study of Waste Management

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Abstract — Waste is an unnecessary input to or any undesirable output from any system comprising of all types of resources. Waste management is those activities required to manage waste from its final disposal process. These include amongst process such as collection, transport, treatment and disposal of waste and monitoring. It encompasses regulatory and the legal framework that related to waste management encompassing guidance on recycling. The amount of waste generated by humans was insignificant due to low population density and societal levels of the exploitation of natural resources. Some Common waste produced during pre-modern times was mainly ashes and human biodegradable waste and these were released back into the ground locally with minimum environmental impact. Tools made out of metal non-metals etc. were generally passed down through the generations. Emphasis is placed on integrated approaches. These approaches require the blending of technical and non-technical factors. The dissemination and application of innovative technical information is extremely important. The implementation of sustainable waste management practices also requires thorough understanding of the pertinent social, economic, legal and regulatory issues involved.

Keywords—Waste Management Control, Techniques of waste, Sustainability, etc.

I. INTRODUCTION

Waste Management is a Fortune some recycling and environmental services company that uses garbage to generate renewable energy in the industries. Waste Management means provides recycling, food and yard waste and garbage collection. Waste Management is the leading provider of comprehensive waste management services. The company provides collection, transfer, recycling and resource recovery and disposal services for some facilities. It is also a leading developer, operator and owner of landfill gas-to-energy facilities in the different countries and states.

The company’s customers include residential, commercial, industrial, and municipal customers throughout states of international level. Waste Management is designed for engineers, managers and scientists regardless the discipline who are involved in technical, scientific and other issues related to solid waste management by company. Waste is not something that should be disposed of with no regard for future use. It can be a valuable resource if addressed correctly through policy and practice. With rational and consistent waste management practices.
Waste management (WM) is one of the major environmental problems of Indian cities as well as other countries also. Improper management of solid waste (MSW) causes hazards to inhabitants etc. MSW is disposed of unscientifically in open dumps and landfills, creating problems to the environment and public health. Waste management usually relates to all kinds of waste whether generated during the extraction of raw materials the processing of raw materials into intermediate and final products or human activities including sewage, hazardous, agriculture, wastes and municipal. Waste management is extends to reduce adverse effects of wastes on health. Waste Management practices are not uniform among countries, regions and industrial, residential sectors. Waste management is all those activities and action 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.

II. TYPES OF WASTE MANAGEMENT

There are the two ways types i.e. according to waste and waste management.

A. Classification of Waste

In the different areas is presence the waste in the different materials so there are following wastes manages. There could be a four types of waste materials in the different ways are as following:- On the basis of

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*Fig. 1 a) Waste Management b) 3R System*

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*Fig 2 Classification of Waste*
These are some types according to different areas have also some types shown in table below.

<table>
<thead>
<tr>
<th>S No.</th>
<th>Resource Wasted</th>
<th>Sources of Basis</th>
<th>Property basis</th>
<th>Reversibility based</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Waste of material</td>
<td>Industrial</td>
<td>Environment</td>
<td>Services</td>
</tr>
<tr>
<td>2</td>
<td>Waste of Date &amp; Time</td>
<td>Commercial</td>
<td>Hazardous</td>
<td>Manpower</td>
</tr>
<tr>
<td>3</td>
<td>Waste of Capital</td>
<td>Agricultural</td>
<td>Non-Hazardous</td>
<td>Reversible</td>
</tr>
<tr>
<td>4</td>
<td>Waste of Energy</td>
<td>Municipal</td>
<td>Other etc.</td>
<td>Non-Reversible</td>
</tr>
</tbody>
</table>

**B. Functional Classification of Waste Management**

Above all WM types in the first goal we can generate the operation which is main process for control the wastes and manage the plan for reducing wastes and in second process based on reduce the waste, how we can reduce the waste, have different methods are used and what type of benefits to the industry and other waste are available and in next step we collect the material, machine, men, money, methods for, to manage the waste in that field, after collection of all type of data we gone for next step and main step of waste control is used which is recycle here all worker are used for individual material of individual type and then here less material dispose after recycle and control the waste material. An effective waste management at the quick identification of the waste generated, reduction, collection, handling, optimal reuse and recycling and effective disposal of waste management problems. Waste management can functionally classified into five common elements such as

1. Generation  
2. Reduction  
3. Collection  
4. Recycling  
5. Disposal

**III. BASIC PARTS OF WM**

Waste management have some basic parts which are give help for reducing the wastes such as movement of waste, sustainability in waste environment, to reduce waste and dispose the material in different ways are explained below:-

**a) Waste Movement**

Waste movement is defined as how we can change in the industry according to waste control by using some methods. Waste movement is compulsory for all industries and other where we look the waste in small workshops and domestic areas. While waste transport within a given country falls under national regulations, trans-boundary movement of waste is often subject to international treaties. A major concern to many countries in the world has been hazardous waste. The provisions of the Basel convention have been integrated into the EU waste shipment regulation. Nuclear waste, although considered hazardous, does not fall under the jurisdiction of the Basel Convention. Waste management in cities with developing economies and economies in transition experience exhausted waste collection services, inadequately managed and uncontrolled dumpsites and the problems are worsening. Problems with governance also complicate the situation. Waste management is an ongoing challenge and many struggles by different departments due to weak institutions, chronic under-resourcing and rapid urbanization in these countries and cities. All of these challenges along with the lack of understanding of different factors that contribute to the hierarchy of waste management affect the treatment of waste.

**Waste Movement based on industry/domestic/residential areas:-**

Waste movement processes have some basic methods which we can used for change or upgrade the wastes and waste material with the help of waste management. The following some methods are as follows (shown in fig):-

1. Waste  
2. Waste collection  
3. Waste to the plant  
4. Waste process (converted, heated & processed)  
5. Energy (Fuel, Gas & Electricity)
b) Sustainability

Sustainability science is deals with the study of environmental science and sustainable development. Sustainability is defined as a socio-ecological process characterized by the athletic one of a common ideal Sustainability is the endurance of systems and techniques. Sustainability is the capacity to tolerate.

The management of waste is a key component in a business' ability to maintaining ISO-14001 accreditation. Industries are encouraged to improve their environmental efficiencies every year by eliminating waste through resource recovery methods which are sustainability-related activities. One way to do this is by shifting away from waste management to resource recovery methods like recycling materials such as glass, food scraps, paper and cardboard, plastic bottles and metal. An ideal is by definition unattainable in a given time/space but endlessly approachable and it is this endless pursuit what builds in sustainability in the process. Healthy ecosystems and environments are necessary to the survival of humans and other organisms. Ways of reducing negative human impact are environmentally-friendly chemical engineering, environmental resources management and environmental protection. Information is gained from environmental science, green chemistry, earth science, and conservation biology. Ecological economics studies the fields of academic research that aim to address human economies and natural ecosystems. Long-lived and healthy wetlands and forests are examples of sustainable biological systems. The organizing principle for sustainability is sustainable development which includes the four interconnected domains:-

1) Ecology 2) Economics 3) Politics 4) culture
FIG. 4 component of mechanical biological treatment plant in Germany, 2007

c) Waste minimization/Reduction

Waste reduction sometimes called prevention. An important method of waste management is the prevention of waste material being created also known as waste reduction. If given the choice, the best option is to prevent or reduce the amount of waste that is generated in the first place. While recycling is an important component of the overall waste management hierarchy, it is the least preferred option because you first have to generate the waste in order to recycle it. Reuse falls in the middle in that if an item can be reused, either by the original user or by someone else before it is disposed to the recycled then the waste of that item is prevented or at least delayed. Waste reduction also helps conserve resources for future generations and contributes to a cleaner environment.

Waste minimization is a process of elimination that involves reducing the amount of waste produced in society and helps to eliminate the generation of harmful and persistent wastes, supporting the efforts to promote a more sustainable society. Preventive Method include reuse of second-hand products, broken items instead of buying new, designing products to be reusable, encouraging consumers to avoid using disposable products, removing any food/liquid remains from cans and packaging and designing products that use less material to achieve the same purpose. Waste reduction is the preferred approach to waste management because waste that never gets created doesn't have waste management costs. Waste reduction example is reducing unwanted package material from manufactured products and produce. If this excess packaging could be avoided, no one would have to be concerned with the cost and effort of collecting the excess packaging, separating it.
for recycling, breaking it down, transporting it to manufacturers and then integrating the recycled materials back into the manufacturing process. These types of WM for applying the Waste Reduction procedure at each stage separately as according to below sequence:-

1. Recognize the waste
2. Identify the cause
3. Plan corrective action
4. Eliminate the cause

![Reduction of WM](image)

**Fig. 5 Reduction of WM**

d) **Factors of Disposal**
Various factors that should be considered during the all operation in design of waste disposal system are the following:-

1. Litter Control
2. The regional and national policies
3. Fire prevention
4. Environment control
5. Operation plans
6. Worker & Employer facilities
7. Public attitude
8. Equipment requirements
9. Operational Records
10. Maintenance etc

IV. **DIFFICULTIES OF WM**
To the point of view, Waste management has number of difficulties presence in the operations due to lack of capabilities of men, machine areas etc. Few difficulties are shown below.

a. Poor management
b. Less area
c. Rural areas
d. Lack of responsibility
e. Poor maintenance
f. Lack of skills
g. Lack of planning
h. Lack of money
i. Improper methods used
j. Miscellaneous etc.

V. **BENEFITS**
There is an opportunity to reap a range of benefits of waste management. Those benefits include:

- Improving economic efficiency resources such as use, disposal, treatment and creating markets.
- Quality of products produced.
- Eliminating waste generation makes it easier to meet targets of environmental regulations, policies, etc.
• By reducing adverse impacts on health by proper waste management practices the resulting are more settlements.
• Waste minimization can achieve more output of product per unit of input of raw materials.
• Eliminating impacts on the environmental through 3R and minimizing resource.
• Following effective waste management practices can provide subsequent generation’s robust economy.
• More efficient use of products of a company.
• The environmental profile of a company is an important part of its overall reputation.

REFERENCES