

Study on Process of Waste Management

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Abstract: *Waste management is an important part of the urban infrastructure as it ensures the protection of the environment and of human health. It is not only a technical environmental issue but also a highly political one. Waste management is closely related to a number of issues such as urban lifestyles, resource consumption patterns, jobs and income levels, and other socio-economic and cultural factors. Waste prevention and minimization has positive environmental, human health and safety, and economic impacts. Implementing a "less is better" concept provides better protection of human health and safety by reducing exposures, generating less demand for disposal on the environment. Less Waste also lowers disposal cost*

Keywords: Waste management

I. INTRODUCTION

Waste management (or waste disposal) are the activities and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process. Waste can be solid, liquid, or gaseous and each type has different methods of disposal and management. Waste management deals with all types of waste, including industrial, biological and household. In some cases waste can pose a threat to human health. Waste is produced by human activity, for example the extraction and processing of raw materials. Waste management is intended to reduce adverse effects of waste on human health, the environment or aesthetics. Waste management practices are not uniform among countries (developed and developing nations); regions (urban and rural areas), and residential and industrial sectors can all take different approaches

WHAT IS WASTE?

Waste is rubbish, trash, garbage, or junk is unwanted or undesired material. There are a number of different types of waste. It can exist as a solid, liquid, or gas or as waste heat. When released in the latter two states the wastes can be referred to as emissions. It is usually strongly linked with pollution. Waste may also be intangible in the case of wasted time or wasted opportunities. The term waste implies things, which have been used inefficiently or inappropriately.

WHAT IS MANAGEMENT ?

The term "management" characterizes the process of and/or the personnel leading and directing all or part of an organization (often a business) through the deployment and manipulation of resources (human, financial, material, intellectual or intangible).

WHAT IS WASTE MANAGEMENT?

Waste management is the collection, transport, processing (waste treatment), recycling or disposal of waste materials, usually ones produced by human activity, in an effort to reduce their effect on human health or local aesthetics or amenity. A sub focus in recent decades has been to reduce waste materials' effect on the natural world and the environment and to recover resources from them. Waste management can involve solid, liquid or gaseous substances with different methods and fields of expertise for each. Waste management practices differ for developed and developing nations, for urban and rural areas, and for residential, industrial and commercial producers. Waste management for non-hazardous residential and institutional waste in metropolitan areas is usually the responsibility of local government authorities, while management for non-hazardous commercial and industrial waste is usually the responsibility of the generator.

The purpose of waste management is to:

1. Protect people who handle waste items from accidental injury.
2. Prevent the spread of infection to healthcare workers who handle the waste.
3. Prevent the spread of infection to the local community.
4. Safely dispose of hazardous materials
5. Open piles of waste should be avoided because they are risk to those who scavenge and unknowingly reuses contaminate items.

CLASSIFICATION OF WASTE



Challenges in India

Waste management rules in India are based on the principles of "sustainable development", "precaution" and "polluter pays". These principles mandate municipalities and commercial establishments to act in an environmentally accountable and responsible manner—restoring balance, if their actions disrupt it. The increase in waste generation as a by-product of economic development has led to various subordinate legislations for regulating the manner of disposal and dealing with generated waste are made under the umbrella law of Environment Protection Act, 1986 (EPA). Specific forms of waste are the subject matter of separate rules and require separate compliances, mostly in the nature of authorisations, maintenance of records and adequate disposal mechanisms. With rapid urbanisation, the country is facing massive waste management challenge. Over 377 million urban people live in 7,935 towns and cities and generate 62 million tonnes of municipal solid waste per annum. Only 43 million tonnes (MT) of the waste is collected, 11.9 MT is treated and 31 MT is dumped in landfill sites. Solid Waste Management (SWM) is one among the basic essential services provided by municipal authorities in the country to keep urban centres clean. However, almost all municipal authorities deposit solid waste at a dumpyard within or outside the city haphazardly. Experts believe that India is following a flawed system of waste disposal and management.

The key to efficient waste management is to ensure proper segregation of waste at source and to ensure that the waste goes through different streams of recycling and resource recovery. Then reduced final residue is then deposited scientifically in sanitary landfills. Sanitary landfills are the ultimate means of disposal for unutilised municipal solid waste from waste processing facilities and other types of inorganic waste that cannot be reused or recycled. Major limitation of this method is the costly transportation of MSW to far away landfill sites. A report by IIT Kanpur (2006) found the potential of recovering at least 15 per cent or 15,000 MT of waste generated every day in the country. This, the report said, could also provide employment opportunities to about 500,000 rag-pickers. The report added that despite immense potential in big cities in this area, participation from non-profits or community is limited.

The way forward

Around 100 cities are set to be developed as smart cities. Civic bodies have to redraw long term vision in solid waste management and rework their strategies as per changing lifestyles. They should reinvent garbage management in cities so that we can process waste and not landfill it (with adequate provisioning in processing and recycling). To do this, households and institutions must segregate their waste at source so that it could be managed as a resource. The Centre aims to do away with landfill sites in 20 major cities. There is no spare land for dumping garbage, the existing ones are

in a critical state. It is reported that almost 80 per cent of the waste at Delhi landfill sites could be recycled provided civic bodies start allowing ragpickers to segregate waste at source and recycle it. Compost pits should be constructed in every locality to process organic waste. Community participation has a direct bearing on efficient waste management. Recovery of e-waste is abysmally low, we need to encourage recycling of e-waste on a very large scale level so that problem of e-waste disposal is contained.

Waste Disposal Methods



Sometimes, wastes are illegally dumped into rivers and canals or used to fill land depressions without proper consultations. These practices cause a lot of problems in the long run, such as degrading the soil quality, causing suffocation and death of animals inhabiting that area. To prevent these, we must adopt proper waste disposal methods.

Methods of waste disposal

Garbage accumulation has never been much of a concern in the past, but due to globalization and industrialization, there is a need for a more efficient waste disposal method apart from the traditional methods.

Waste Management System in India

Waste management market comprises of four segments – Municipal Waste, Industrial Waste, Bio- Medical Waste and Electronic Waste Market. All these four types of waste are governed by different laws and policies as is the nature of the waste. In India waste management practice depend upon actual waste generation, primary storage , primary collection, secondary collection and transportation, recycling activity, Treatment and disposal. In India, municipality corporations play very important role in waste management in each city along with public health department. Municipal Corporation is responsible for the management of the MSW generated in the city, among its other duties. The public health department is responsible for sanitation, street cleansing, epidemic control and food adulteration. There is a clear and strong hierarchy of posts in the Municipal Corporation. The highest authority of Municipal Corporation rests with the Mayor, who is elected to the post for tenure of five years. Under the Mayor, there is a City Commissioner. Under the city commissioner, there is Executive Officer who supervises various departments such as public health, water works, public works, house tax, lights, projection tax, demand and a workshop, which in turn, all are headed by their own department heads. The staffs in the Public health department are as follows: Health Officer, Chief sanitary and food inspector, Sanitary and food inspectors, Sanitary supervisors, Sweepers, etc. The entire operation of solid waste management (SWM) system is performed under four headings, namely, street cleansing, collection, transportation and disposal. The cleansing and collection operations are conducted by the public health department of city Municipality Corporation. The entire city can be divided in to different zones. These zones are further divided into different sanitary wards for the purpose of solid waste collection and transport operations. Currently waste management in India mostly means a picking up waste from residential and industrial areas and dumping it at landfill sites. The authorities, usually municipal, are obligated to handle solid waste generated within their respective boundaries; the

usual practice followed is of lifting solid waste from the point of generation and hauling to distant places known as dumping grounds and/or landfill sites for discarding. The treatment given to waste once thus emptied is restricted to spreading the heap over larger space so as to take away the waste from the public gaze. Waste collection is usually done on a contract basis. In most cities it is done by rag pickers, small-time contractors and municipalities.

NEED & SIGNIFICANCE OF THE STUDY

1. The problem of waste is increasing so it is important to study about the reason.
2. Waste management is a responsibility of every individual.
3. The improper Waste management and disposal is affecting the individual in many ways

NATURE & SCOPE OF THE STUDY

1. This paper is based on primary as well as secondary researches.
2. Existing reports related to waste management and recommendations of planners/ NGO's/ consultants/ government accountability agencies/ key industry experts/ for improving the systems are studied.
3. It offers deep knowledge about the various waste management initiatives and find out the scope for improvements in the management of waste for the welfare of the society.
4. The project attempts to understand the important role played by the formal sector engaged in waste management in our country. This work is original and could be further extended.

AIMS & OBJECTIVE OF THE STUDY

1. The objective of this project are to study the current practices related to the various waste management initiatives taken for human wellbeing.
2. To create awareness about sustainable waste management and disposing techniques.
3. The other purpose is to provide some suggestions and recommendations to improve the waste management practices in towns.
4. To create awareness about new waste management rules and procedures.

REVIEW OF LITERATURE

Various studies have been conducted from time to time on processed waste management and its export. Brief review of important and related studies presented as below:

1) Business Editors. Business Wire; New York [New York]19 June 2001:

1. (BUSINESS WIRE)--June 19, 2001--Waste Management Inc. (NYSE:WMI) responded today to the announcement that its outside auditor, Arthur Andersen LLP, had reached a settlement with the Securities Exchange Commission regarding audits done for a wholly owned subsidiary of Waste Management Inc. for the calendar years in the period from 1993 through 1996 and the 1998 restatement of such subsidiary's financial statements. The subsidiary, which at that time was known as Waste Management Inc. (Old Waste Management), was merged with a wholly-owned subsidiary of USA Waste Services Inc. in 1998, and changed its name to Waste Management Holdings Inc. USA Waste Services Inc. then changed its name to Waste Management Inc. (New Waste Management). The settlement relates to an investigation by the SEC involving Old Waste Management's 1998 restatement of its prior financial statements for the calendar years from 1993 through 1996, which were audited by Arthur Andersen. Waste Management has cooperated fully with the SEC in the investigation, and does not believe that the SEC will seek any action against Waste Management in connection with the events detailed in the Arthur Andersen settlement.

2) Albu, R G; Chitu, I B. Bulletin of the Transilvania University of Brasov. Economic Sciences. Series V;

This paper approaches an issue of current interest, namely the appropriate waste management. The instruments through which the European Union policy in the field of waste management is implemented in Romania are: Waste Management National Strategy (WMNS) and National Waste Management Plan (NWMP). At regional level, the Regional Waste Management Plans have been drawn up by each Environment Protection Regional Agency in close

cooperation with the representatives of local environmental authorities and of local and county public administration authorities. From our perspective, the waste management represents an issue that should concern not only the authorities, but also each individual Romanian citizen. [PUBLICATION ABSTRACT]

3) By James P. Miller. Wall Street Journal, Eastern edition; New York, N.Y. [New York, N.Y.]10 Dec 1998: B22.

The litigation involves Waste Management when it was based in Oak Brook, Ill. Soon after announcing early this year that it was reversing a total of \$1.32 billion in previously reported profits, Waste Management agreed to be acquired by Houston-based rival USA Waste Services Inc. The combined company adopted the Waste Management name. Also participating in the settlement is Arthur Andersen & Co., which served as the old Waste Management's outside auditor. Neither Andersen nor Waste Management disclosed their respective payments under the settlement. Waste Management, however, said it will take an after-tax charge of \$70 million in the fourth quarter to cover its portion of the settlement.

4) Anonymous. Ecology, Environment & Conservation Business; Atlanta [Atlanta]04 July 2009: 360.

An Overview Industry Structure Waste Management Industry Waste Management Segmentation Waste Generation & Collection Statistics Non-Hazardous Waste Management Waste Treatment & Disposal Revenues Sources of Waste Municipal Waste Equipment Sales Growth Drivers Declining Illegal Dumping Cases Recycling of Waste Solid Waste Generation Market Role of GDP in Waste Management Industry Increasing Carbon-dioxide Level Industry Trends Regulatory Environment Private Sector Participation Opportunity in Solid waste Management Equipment Competitive Landscape Market Share Company Profiles Overview Business Strategies Internationalization of Disposal Facilities Diversified Services Industry Outlook Market Forecast Keywords:

5) Business Wire; New York [New York]08 Nov 2004: 1.

Waste Management Inc. (NYSE:WMI), a proud sponsor of NASCAR, announced today that during the 2005 season, it will sponsor the No. 17 Waste Management Ford Taurus driven by Matt Kenseth in the NASCAR Busch Series, as well as Kenseth's No. 17 NASCAR NEXTEL Cup Series car as an associate sponsor. Waste Management will also support NASCAR in its continued commitment to diversity, through several different initiatives. To begin with, Waste Management will sponsor driver Bill Lester's No. 22 Toyota Tundra in the NASCAR Craftsman Truck Series for the balance of 2004 and throughout 2005. Additionally, Waste Management will support an entry in the NASCAR Dodge Weekly Series as part of the sport's Drive for Diversity initiative.

II. CONCLUSION

1. All the existing landfill sites are running beyond their capacity hence there is emergency need to find new location for disposal.
2. The people should be educated to realize the importance of source segregation at generation point as biodegradables, inert and recyclable material for proper waste management.
3. The waste should be treated as resource and formal recycling sector/ industries be developed to recycle non-biodegradable recyclable component from the waste thereby providing employment to rag-pickers and absorb them in mainstream.

Waste management can be defined as the "collection, removal, processing, and disposal of materials considered waste" (Ecolife Dictionary). Waste can be put into landfills, incinerated, recycled, or composted. The most sustainable way to manage waste is to recycle and compost.

In our research, we looked at how well informed the students at Carleton University are on recycling, as it is an important part of waste management. We decided to ask questions to do with things such as if being more informed would effect their recycling habits, and if they know where to recycle used batteries.

Carleton students had some trouble deciding which items belong in which recycling bin (paper products, plastics, glass). They also generally thought that knowing more about waste management would encourage them to recycle more. These results can be interpreted as a need for educating people more about recycling, why it is important, and how it works.

REFERENCES

- [1]. https://en.wikipedia.org/wiki/Waste_management
- [2]. <https://www.journals.elsevier.com/waste-management/most-downloaded-articles>
- [3]. <https://www.conserve-energy-future.com/waste-management-and-waste-disposalmethods.php>
- [4]. <https://www.globalgiving.org/pfil/8070/WASTEMANAGEMENT>
- [5]. <https://byjus.com/biology/solid-waste-management/>
- [6]. <https://search.proquest.com/docview/445842946?accountid=139598>
- [7]. <https://search.proquest.com/docview/1000455007?accountid=139598>
- [8]. <https://search.proquest.com/docview/398703971?accountid=13959>
- [9]. <https://search.proquest.com/docview/200204565?accountid=139598>
- [10]. <https://search.proquest.com/docview/445549260?accountid=139598>
- [11]. <https://search.proquest.com/docview/446063202?accountid=139598>
- [12]. <https://search.proquest.com/docview/229599222?accountid=139598>
- [13]. <https://search.proquest.com/docview/1899176286?accountid=139598>