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WASTE MANAGEMENT TODAY

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ABSTRACT

Today waste management has become a major issue that needs to be carefully dealt with. As urbanization continues to take place, the management of solid waste is becoming a major public health and environmental concern in both the urban as well as rural areas of most of the developing countries. There are evolving certain trends and patterns which define how the waste management industry will proceed in doing the much needed aspects of waste management and the procedures by how it will evolve. Across the waste and recycling industry, substantial changes are happening at daily rate that are allowing vast economic and environmental improvements. A greater focus on positive goals such as reduction of waste transported to landfills and increased organic disposal techniques are keeping the industry on a path towards growth. In India, a proper waste management system is an urgent necessity for a variety of reasons, some of which are as follows:-

- (a) To control the different types of pollution, i.e., air pollution, soil pollution, water pollution, etc.
- (b) To stop the spread of a variety of infectious diseases resulting from an accumulation of waste materials.
- (c) To make way for the notion of the use of garbage as a valuable and an important resource for energy production.
- (d) For the recycling of waste for further usage and to reduce the burden of production, which still lies on our environmental resources, including forests, minerals, etc.

Keywords- Waste Management.

I. WHAT IS WASTE MANAGEMENT?

Waste management as such is broad term encompassing the generation, prevention, characterization, monitoring, treatment, handling, reuse and residual disposition of the generated waste. To implement proper waste management policies, a successful and safe disposal of solid and liquid waste is very necessary. In this rapidly changing world what will come can

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only be predicted and for doing so in the case of waste management we have to look at the current trends in this field. Putting these trends together and considering the consequences they will have for waste management will help us to understand the emerging new challenges and will help us to see the current situation in a different light. Our waste management systems and our market conditions today, even at their very best, are incapable of handling the growing amounts of waste. So unless we adopt new measures to our current waste control methods, it will be very difficult to solve our problems concerning waste disposal.

Recent trends in waste management:

Here are the few recent trends that have come to reduce the amount of waste generated and also to minimise problems concerning waste disposal:-

1. CNG fuelled vehicles are being widely used to cut costs and increase efficiency. CNG is the solution to the increase in airborne dust caused by petrol engines. In all ways, it is a lot greener. The CNG fuelled vehicles are cleaner burning, quieter and also less expensive than petrol or diesel. The CNG model is one that needs to be applied to reduce the air pollution that is corroding not only houses and buildings, but also lives in most urban localities.
2. Cities are themselves taking initiatives to reduce production of waste and a cleaner and better environmental practice. By implementing new recycling programmes, banning specific products and producing more energy from waste, municipalities and municipal corporations are able to push their communities forward in achieving their desired goals in the next few years. This can be achieved by an increase in citizen awareness programmes which will allow citizens to learn more about how to achieve their goal, which will be enormously beneficial jointly to the community as well as the environment.
3. Bans are being placed on common and dangerous products such as plastic bags to prevent them from reaching landfills. The goal of such bans is to decrease the probability that these products, being non-biodegradable will reach landfills and pollute the environment. Various legislations have been put in

place to check the growth of plastic bags that are non-biodegradable and take thousands of years to degrade naturally in the soil.

4. The concept of converting waste to energy is growing as more ways are being available to turn refuse and waste to reusable products and useful energy. Companies are beginning to find new and innovative ways to produce renewable energy from municipal solid waste and natural gas, which is truly pushing the waste management industry towards a more sustainable future. By building waste-to-energy plants, focusing on alternative and profitable waste disposal methods, and testing various technologies, the waste industry is on track for making a greener footprint on the environment. The waste-to-energy efforts and utilisation can save finances which would have otherwise been used in the production of energy by other methods. Examples such as in the gasification of Municipal Solid Waste (MSW), instead of paying to dispose off and manage waste for years in a landfill, using it as a feedstock for gasification reduces disposal costs and landfill space, converts such refuse and wastes to electricity and fuel.

Traditional practices:

Apart from the newer trends that have come up in the waste management industry, the older and more conventional techniques are still used to combat the daily increase in the waste phenomena:-

1. **Landfill:** The landfills are still the most popularly used methods of waste disposal today. This process of waste disposal focuses on burying the waste products into the soil in specifically designated areas, which are branded as landfills, in which the waste is slowly degraded into the natural products constituting the soil. However this process requires a lot of space and renders the land unsuitable for agricultural uses, as well as contaminates the soil through the leachate that seeps into the lower layers of soil following rains and does much to contaminate the underground water by addition of heavy metals into the underground water basin.
2. **Incineration:** In this method of waste disposal the municipal wastes are burned at high temperatures so as to convert them into residue and gaseous products. The biggest advantage of this method is that it reduces the volume of solid waste to about 20 to 30 per cent of the original volume, which further decreases the space they take up and the stress on landfills.
3. **Recycling:** Recycling is almost always the best way to get rid of waste, as it is not merely a method to get rid of wastes, but one in which the wastes are converted into forms that are useful and can be used by the members of society and at a cost which is much lower than the actual production cost of that material. The idea of recycling is to reduce energy usage; reduce volume of landfills; reduce air, water and soil pollution; reduce greenhouse gas emissions and to preserve natural resources for future use.
4. **Composting:** Composting is just another form of recycling, this time naturally by the elements of the soil. Composting occurs by allowing the organic materials to sit in one place for months, in the soil, until microbes decompose into manure. It is an easy to adopt and a natural biodegradation process that takes remains of plants and garden and kitchen waste and turns it into nutrient rich food for the plant life, which is healthier, more natural and keeps the soil non-toxic, unlike fertilisers which gradually increase the toxicity of the soil and makes it unfit for plant growth and reduces vegetation cover, besides polluting rivers as the fertiliser-laden soil flows down into the rivers during rains. Composting also is an essential component for organic farming which provides for a healthier growth of fruits and vegetables. Composting is one of the best methods for waste disposal as it can turn unsafe organic materials into safe compost.
5. **Waste to Energy processes:** Waste to Energy (WTE) processes involve converting of non-recyclable waste into useable energy forms, such as heat, electricity or fuel, through a variety of processes. This type of energy source is a type of renewable energy source, as the non-recyclable waste can be used over and over to create energy. It can also help to reduce carbon emissions by offsetting the need for energy from fossil fuels.

II. WHAT IS HAPPENING CURRENTLY?

According to the Centre for Science and environment, instead of constructing new landfill sites, more attention should be given to looking into innovative methods to dispose and recycle waste materials. The reason why most landfills sites are over-flowing is because the current waste disposal system is flawed.

In the present scenario, the segregation of biodegradable waste from non-biodegradable waste is not done properly. New models should be developed which would ensure betterment of the above scenario.

In addition, at many landfill sites, due to the lack of an effective waste recycling system, solid waste is burned without segregating biodegradable waste from non-biodegradable waste. This leads to the release of toxic gases that cause acute respiratory diseases and environmental degradation.

III. FUTURE OF THE INDUSTRY AND IT'S NED FOR EVOULTION

Now let us discuss how recent trends in waste production, generation and disposal will affect the future of this industry. Amounts of waste are largely determined by two factors: first, the population in any given area, and the second, its consumption patterns – which are controlled by the developments surrounding the Gross Domestic Product per Capita (GDP/c). According to a United Nation report, between now and 2025, the world population will reach at least 8 billion inhabitants (from about 7 billion today). Moreover, by 2050, the world population will be around 9.5 billion, unless specific control measures are adopted to curb population growth. This is also expected to boost urbanization of population, and the extended zones of poverty around and inside megacities and metropolitans. The number of slum inhabitants will double around 2025 to reach 1.5 billion. Beside overpopulation, a remarkable increase in GDP/c is also on its way. Obviously, both the increase in population and the remarkable growth of global GDP/c will drive an increase in waste volumes. Also the bigger the GDP/c, the more advanced and effective waste management systems and technologies will be put into place. So this increase in global GDP/c will certainly multiply modern landfills, efficient collection systems and waste-to-energy facilities around the world.

The rapidly growing stream of electric and electronic equipments waste (WEEE) is also to be considered. As the world becomes more and more networked and interconnected, and as electronic and electric products are rapidly devalued and become waste due to fast updates, the WEEE stream will become a major challenge for future waste management. As the electronic goods become less and less expensive, the willingness to throw them away will also increase, and which will make reuse more difficult.

As the time passes by, our world will be overpopulated and more and more interconnected. This increased capability demands new forms of global cooperation. And although there are appropriate waste management solutions, the main problem is the global framework that should put them in place in an effective manner, which will help counter the increasing amount of waste-related problems and will achieve the target of a system with a maximum potential to deal with waste related issues.