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TWENTY-FIRST CENTURY AND WASTE MANAGEMENT SYSTEM IN INDIAN PERSPECTIVE

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Abstract

Paper and plastic, which have shorter lifespans and larger quantities, are consumed at a faster rate due to urbanization and changes in people's lifestyles, particularly for those with better incomes. These goods are contributing to the amount of waste that local authorities must deal with, along with dietary shifts. India has been extremely aware of the importance of environmental safety and health in recent years, and it has begun investing time and resources on solid waste management.At every level, the government and private groups are working to reduce waste as much as possible. Additionally, the public has begun to participate in efficient garbage management. From an Indian viewpoint, this paper provides a detailed explanation of the zero waste idea and the integrated waste management approach.

Keywords - waste management, environmental pollution, disease

Introduction

Man is the messiest animal on earth. The earth itself disposes of the dirt that is spread apart from humans on the earth. If the filth made by humans is not disposed of in time, then it can undoubtedly become the reason for the destruction of various living beings and human civilisation.

Geographically, it is the seventh-largest country in the world, while in terms of population; it is the second-largest country after China. If we talk about the economy in the world, now India has become the fifth largest economy in the world, leaving Britain behind. Due to having such a vast land, big economy and uncontrolled population, the emission of dirt will also be in excess here.

If we talk about the type of dirt generated, then dirt can be generated in two ways, one generated by nature and the other by humans. Nature itself is a very great cleaner, the dirt that is created by nature, it cleans it itself with time, for example, if all the plants are destroyed due to fire in the forest, then there is a very rapid growth in the plants and soon the forest turns green. But

the dirt generated by humans is also of two types, one which can be destroyed automatically and the other which cannot be destroyed.

If there is a natural imbalance on the earth, then there is a huge contribution of human beings in it, that dirt which is capable of being destroyed should be properly destroyed in a systematic and proper way, if this is not done, then it is itself diseases, disorder and natural imbalance also causes. For, before understanding management, we have to understand what waste is and what its types are.

Waste And Its types

The earth is full of different substances, which are being exploited irregularly and uncontrollably, not the object of man's work or after work, which is of no use, called waste. If we study the definition of Waste/s we find that waste/s is unwanted or unusable materials. According to the dictionary meaning Waste is unwanted or unusable materials. Waste is any substance which is discarded after primary use, or is worthless, defective and of no use. A by-product by contrast is a joint product of relatively minor economic value. If we talk logically, then no product on earth is waste or waste, the only difference is how we use and manage it. Simply, the things which we keep to throw in the dustbin is waste is domestic waste. In this way, we can say in simple language that the thing which is of no use to the human being, we keep it in the category of waste.

There are many types of waste and it is also necessary to understand the type of waste properly because it is only by the type of waste that we determine its disposal. Here we are describing the types of garbage generated by humans in large quantities. We can mention the type of waste in different ways. First of all, we can divide waste into three parts on its state that is solid, liquid and gaseous. Secondly, it can also be divided on the basis of its destruction like biodegradable and non-degradable. Thirdly on the basis of where the emission has come from, it can also be divided like Domestic Waste, Industrial Waste, Commercial Waste, Agricultural Waste, etc. Here we are discussing jointly few important types of wastes which is emitting in a huge amount and society,

authorities and government all are responsible whole responsibility to reduce and manage it.

A - Biodegradable Waste

The first is biodegradable means that has the ability to be destroyed automatically with time and the second is non-degradable which is not destroyed automatically. It defines biodegradable waste as “any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, and paper and cardboard.” Biodegradable wastes decompose themselves over a period of time depending on the material. Biodegradable waste is generated from our daily routine in daily life.

B - Non Bio-Degradable Waste

Non-degradable waste can also be divided into several parts according to emissions. Wastes that cannot be broken down by other living organisms come under non-biodegradable waste. Non-

biodegradable substances affect the environment. They may enter the food chain and harm the organisms in the higher trophic levels, e.g., pesticides, like DDT, non-biodegradable substances like radioactive wastes, lead, mercury etc., affect the health of all living organisms. Non-biodegradable waste is known as dry waste. Dry wastes can be recycled and can be reused. Non-biodegradable wastes do not decompose by themselves and hence are major pollutants. There are also many types of non-degradable wastes, which we are discussing below.

C - Domestic Waste

Generation of waste is a part and parcel of day-to-day human life. Wastes can be generated from various sources. This includes trash or garbage from households, schools, offices, marketplaces, restaurants and other public places. Although generally, domestic waste is solid, this is being a big problem to manage. Due to uncontrolled increase in population, domestic waste is also being emitted in unlimited quantities, it also includes all other types of waste, in simple language, if we say, there is a mixture of almost every type of waste in domestic use.

D - Medical or Clinical Wastes

Medical, healthcare or clinical waste is defined as any waste which may cause infection to any person coming into contact with it. It can be generated from a number of sources including clinics, doctor's surgeries, dentists, hospitals and laboratories. there are four major types of medical waste: General, Infectious, Hazardous And Radioactive. The method of waste management of all these types of waste is different, according to the type; they come under the category of very dangerous waste. In the Corona tragedy, there was an uncontrolled increase in the amount of emissions of these subsystems and we also realized that we are still lagging far behind in the technological development to destroy them.

E - Agricultural Wastes

Agricultural waste is unwanted material resulting from agricultural operations directly related to growing crops or raising animals solely for commercial use or for livelihood. Various wastes produced in the agricultural field are known as agricultural wastes. The lack of proper disposal of agricultural waste, either due to ignorance of its disposal or the problem of its transfer and re-use, affects not only the economy of the local farmers but also the economy of the whole country, as well as being harmful to the environment. Reusing these wastes reduces the import of fossil fuels and other agro-based fertilizers.

F - Industrial Wastes

Industrial waste is waste produced by industrial activity that includes any material that becomes waste during the manufacturing process such as factories, mills, and mining operations. Industrial waste can be in all three states of matter and also may be hazardous waste. or non-hazardous waste.

G - Electronic waste

Electronic-Waste means electrical and electronic equipment, whole or in part discarded as waste by the consumer or bulk consumer as well as rejects from manufacturing, refurbishment and

repair processes. These are also called e-waste, e-scrap, or waste electrical and electronic equipment. Most of the time Electronic scrap components contain potentially harmful materials. Some e-waste contains lead, mercury and cadmium, which are harmful to humans and the environment. It may involve significant risk to the health of workers and their communities; therefore it is necessary to dispose of it very carefully.

H - Recyclable Waste

Recycling is the process of converting waste materials into new materials and objects. The basic phases in recycling are the collection of waste materials, their processing or manufacture into new products. *Recyclable materials* include many kinds of glass, paper, cardboard, metal, plastic, textiles, batteries, and electronics . Recycling can help reduce the quantities of solid waste and also reduces the pollutions of air, water, and land resulting from waste disposal.

I - Hazardous Waste

A hazardous waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment. Hazardous waste is generated from many sources, ranging from industrial manufacturing process wastes to batteries and may come in many forms, including liquids, solids gases, and sludge.

All types of waste have the potential to cause different side effects. Along with the origin of all, the method of disposal is also almost different; mostly we can recycle it properly, for all these we have to understand the waste management system and laws for their enforcement.

Laws For Waste Management in India

If any kind of waste disposal is not regulated and managed properly, it can lead to serious environmental issues and serious diseases. Just as there are many types of waste, according to the type of waste, there are many ways to dispose of it, in the same way, in India, whatever you want, for the cleanliness of the environment, for the cleanliness of the garbage, for the disposal of different types of waste, there are many laws for regulation, decomposition, transfer, handling and storage.

Spreading dirt causes maximum damage to the environment. All people have a fundamental right to clean and clean air, which is enshrined in the right to life provided under Article 21. There was no provision in the original constitution of India for the protection of the natural environment. This was added as a fundamental duty by the 42nd amendment, in which, the fundamental duty of all citizens to protect the environment. There are a large number of laws and judicial precedent for environmental protection and waste management, some of which are as follows.

These laws are The Environmental Protection Act, 1986, The Environmental Protection Rules, The Ozone Depleting Substances (Regulation and Control) Rules, 2000, The Noise Pollution (Regulation and Control Rules) 2000, The Water (Prevention and Control

of Pollution) Cess Act, 1971, Air (Prevention and Control of Pollution) Act, 1981, Amended 1987 and the Air (Prevention and Control of Pollution) Rules, 1982, The Municipal Act, 1956 and Municipal Solid Wastes (Management and Handling) Rules, The Hazardous Wastes (Management,

Handling and Transboundary Movement) Rules, 2008, The Plastic Waste (Management and Handling) Rules, 2011, Bio-Medical Waste (Management and Handling) Rules, 1998 and The E-Waste (Management and Handling) Rules, 2011, The Batteries (Management and Handling) Rules, 2001.

There are a lot of laws in India, as many types of waste as many types of rules and laws. There are the Municipal Act, 1956 and Municipal Solid Wastes (Management and Handling) Rules for domestic waste, and polluting the environment is also punishable in the Indian Penal Code, 1860. Sections 268, 269, 270, 277, 278, 284, 285, 286, 287, 288 and 289 of the Indian Penal Code, 1860 relating to cleanliness of the environment, contaminating human health, water or air and spreading any kind of filth But the provisions of punishment have been given. Similarly, in many sections of Part 11, Chapter 38 of the Municipal Act, 1956, the corporation has also been given various rights to impose fines in connection with cleanliness.

Where the Environmental Protection Act, 1986 has been made for the protection of the environment, rules have also been made to implement it properly. Polluter Pays Principle" which states that any expense which has been incurred to restore the environment to its natural state shall be paid by the person who is responsible for such degradation. This concept of a continuing punishment is very important. The Environmental Protection Rules, 1986, were formulated by the government under the power conferred to them by the Environmental Protection Act. Through these powers, the government has the authority to give specific directions, without changing the principle Act.

According to the Municipal Solid Waste (Management and Handling), 2000, the corporation is fully responsible for the waste generated in the urban area. The corporation cannot cite lack of resources, facilities or budget regarding waste management regulates the transportation, treatment, storage, and disposal of many other types of waste, including municipal solid waste, hazardous waste, and nuclear waste.

"Waste control or waste disposal is all the behaviours and acts necessary to handle the waste from its inception to its final disposal. This involves, but is not limited to, storage, transport, management and recycling of waste along with control and enforcement. It also covers the legislative and regulatory system for waste control, including recycling guidelines, etc."

Waste management or waste disposal includes the processes 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 and waste-related laws, technologies, economic mechanisms. Waste management deals with all types of waste, including industrial, biological, household, municipal, organic, biomedical, radioactive wastes. In some cases, waste can pose a threat to human health. There are multiple waste management strategies and methods available. These strategies can be combined or rearranged to form a waste management system that fits an organization. Modern waste management strategies are geared towards sustainability. Other alternatives for waste

management is to reduce, reuse and recycle waste. Disposal standards in India govern the permission, method and place of disposal of a particular waste. Here different types of settlement are regulated by different types of law.

Current Status of Sanitation In India And Its Side Effects

Today we are living in the twenty-first century and at this time we are talking about technological development; we have reached beyond the moon to Mars. But if we talk about cleanliness, then maybe we are going in the opposite direction.

India is one of the largest garbage producing countries in the world. About 62 million tonnes of waste is produced in India every year. According to this figure, about 1.7 lakh tonnes of waste are being generated every day. About 1300 tonnes of garbage is being collected daily in the national capital Delhi alone.

In India, rivers are considered goddesses, but if we talk about filth, then rivers are neat and clean in those countries, where it is considered only as a river. If we talk about the main rivers of India, Holy River the Ganga and the Yamuna, come in the top 5 rivers of the world due to pollution and their condition is getting worse and worse. If we talk about the Yamuna River in the capital Delhi, then more than 50 percent of the dirty water either remains untreated or is not disposed of properly and is discharged directly into the Yamuna. Due to which the river Yamuna was not fit to drink or even take a bath.

Even today in India, toilets have been made free of cost by the government under the Swachh Bharat Mission, yet people in India still defecate in the open. There is a risk of spreading many diseases due to open defecation, including waterborne diseases and diarrhea. About 100,000 children under the age of five died of diarrhea in India, this number is horrifying.

Damage to the environment, impact on life cycle, threat to life of various species, ill-effects of mismanagement. If we see as an example, due to this misadministration, vultures, the scavengers of nature, have become extinct.

When polythene was invented by humans, at that time we felt that we have found a priceless treasure in our hands and perhaps it was also true to some extent, but due to overuse and lack of disposal over time, the problems created by polythene are uncontrolled today. It has become more frightening, even the molecules in polythene have been found in our blood and may cause Cancer and Heart attack like deadly disease.

Due to the mismanagement of such waste, the harmful elements present in it spread through the air, polluting the environment with harmful gases in large quantities, garbage being eaten by animals and falling ill, due to its mixing with soil and water, contamination of drinking water, encircling the place with garbage heaps as well as causing accidents, affecting the ecosystem are all side effects of its mismanagement.

The Planning Commission committee headed by K. Kasturirangan in its 2014 report found that 0.45 kg per capita for India's urban population. On a daily basis, 62 billion tonnes of public solid waste is generated annually.

Gradually, we are also using many such products which are banned in many countries, either they can become the cause of dangerous disease or they can become the cause of biological mutation by entering the jeans of the organisms. Johnson and Johnson baby powder in India which is also a cause of cancer is banned in many countries but is being used in India. This was just an example;

there is a long list of many such products which are very harmful and non-bio degradable. These are emitted and adversely affect the entire aquatic life, together with the aquatic products, they reach us again, and the government should ban such products and should also pay attention to the waste management of those who are in use.

Recommendations

If we talk about the level of pollution in India, then India's capital is at number one among polluted cities in the world. If we blame urbanization for all this, then we have to learn from those countries, which are on top in urbanization but zero in spreading dirt. If we talk about waste management in India we are in dangerous position due to population and unplanned system. Many states do not have any policy regarding the disposal of garbage, they use a simple method. They collect garbage from place to place and are going to pile it on some empty place, in this way neither the garbage will be disposed nor is the problem end. A simple example of this, we can imagine the terrible situation by looking at the garbage mountain in national capital Delhi. According to the type of garbage, we can dispose of it, if we use the wrong way of disposal, then it gives rise to many other types of problems. There is a saying "prevention is better than cure" meaning, it is better to prevent something bad from happening than to correct it after it has happened. This simply means that before finding a way to dispose of the waste, we should give more emphasis on the reduction/ minimisation of waste. In fact, by focusing on waste reduction, businesses can manage both business and environmental objectives simultaneously.

Secondly we must In-house utilization will have to be promoted. The meaning of in-house utilization is to use it again in any way at the place where the waste is generated. In-house utilization can be done at both small and large scale, in small scale we can do it at domestic level and in large scale we can do it in large organizations as well.In the third phase, we have to do the segregation of garbage smoothly everywhere. According to the type of garbage, we have to separate it unnecessarily; the municipality and the disposal agency will also have to properly dispose of it separately. In the disposal of garbage, along with education, morality is also of special importance, from the very beginning in the schools. The biggest problem in India is with the disposal of domestic waste, it is not kept separately according to the type of garbage in the house, nor does the waste taker take it apart. It is said that a big change starts with a small star; the family is a small unit of society, if the garbage is collected in the right way, and then this beginning will be a commendable step. After this, the municipality will also have to fulfil its responsibility to make compost of what is going to be destroyed, what is recyclable, send it to the converter for re-use and how to dispose of what is of no use also manage. In many countries, people consider

themselves as their own responsibility, if someone takes the animal for a walk on the road, then they clean its dirt themselves and dispose it at the proper place. All these things show their good behaviour and duty of cleanliness whereas in India they leave the cleanliness on the government and always blame others.

To keep the river clean, it would be better for us to stop polluting it, instead of trying to clean the rivers, the rivers themselves will do it themselves. Every drop of sewage should be treated before drain water is released directly into the rivers, waste treatment plan and management should be implemented properly. There are many thermal power plants in India, in which electricity is generated from coal, as well as ash is generated, which we can use to make bricks, this will also work for soil mining and recycle it.

Subsidy and space should also be given to new start-ups to make compost from the waste, farmers should also be motivated to use more organic manure. Motivate the farmers not to burn stubble in the fields, make them aware that they have many options like it can also be converted into manure and can also be made part of early crop. The above waste disposal system should also be implemented in the villages.

The manufacturers or brand owners of sanitary napkins are responsible for awareness for proper disposal of such waste by the generator and shall provide a pouch or wrapper for disposal of each napkin or diapers along with the packet of their sanitary products.

As per the rules, brand owners who sale or market their products in packaging material which are non-biodegradable, should put in place a system to collect back the packaging waste generated due to their production.

There are two broad types of recycling operations: internal and external. Internal recycling is the reuse in a manufacturing process of materials that are a waste product of that process. External recycling is the reclaiming of materials from a product that has been worn out or rendered obsolete. An example of external recycling is the collection of old newspapers and magazines for repulping and their manufacture into new paper products.

Even with a small effort, we can get great success, if we adopt all the things in life, then maybe like other countries, India will also be on top in terms of cleanliness. We should also learn some practical things from those countries which used to come under the category of dirty countries, but by bringing changes in themselves, today they are on top in terms of cleanliness.

Conclusion

Therefore, if the earth is to be made clean, then one has to learn to organize all kinds of filth in a planned way and bring it down in life. Since ancient times, water, one of the five elements, has always been considered sacred and of great importance, traces of which we find in our ancient texts such as the Vedas. Rivers have been the basis of life, as many big cities and mythological places are located on the banks of some river; we should make a continuous effort to keep it clean as a duty. If we talk about old religious literature, a lot of emphasis has been laid on cleanliness. All rivers, trees, animals, birds, earth and air have all been worshiped. Directions have been given

for cleaning the body and environment. It is everyone's moral and legal responsibility to spread awareness on cleanliness and implement it in our lives. Everyone should pay attention to the cleanliness, the importance of the method of disposal and the damage caused by dirt, knowledge of all these is very important.

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