

Waste Management and Impact on Surrounding Environment

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Abstract

Environment is the natural world that surrounds us. It is very important to keep it clean in order to live peaceful life. Waste is useless material that has no further use and so it is thrown away. Waste may be generated during the production of raw materials by processing them into intermediate and final products, the consumption of these final products and other human activities. Technology is advancing at very fast pace, life is upgrading, cities are becoming prodigious. Growth in population along with social economic growth lead to complexwaste management problems. Major one is solid waste management, as the problem of waste disposal in metropolitan cities is multiplying, with huge quantity of biodegradable waste been generated. The impact of uncontrolled waste on environment is disastrous. The man-made waste not only has an adverse effect on the surroundings but also causes health hazards all around in air, water and land. It is related to various dimensions of our society and needs all our involvement, social awareness, minimization of waste generation and changes in behavioural patterns in society.

The process of waste management involves the waste collection, waste reduction, recycling and reuse. It also involves transformation and conservation of resources. It aims to provide an eco-friendly environment to maintain the vast habitual cycle. The value of waste products, as an important resource is being recognized. So, the society should minimize the generation of waste competently and try to make use of alternatives it offers.

Keywords-*Waste management, surrounding, environment, dimensions, reduce, reuse, recycle, restoration*

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Introduction-

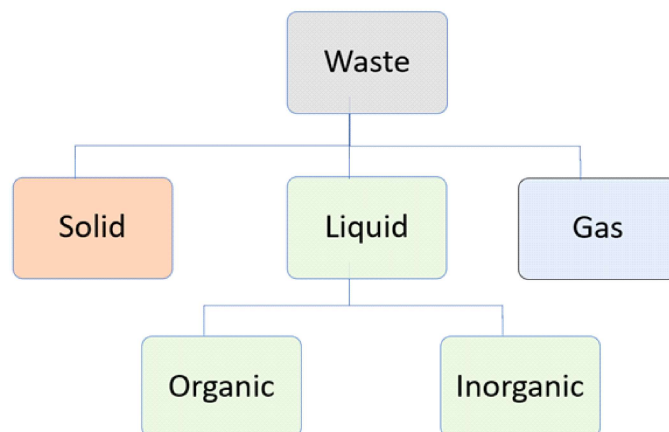
Ever since the first human being, there has been a relationship between humans and the environment surrounding them. Much of what is done by humans directly affects and shapes the relationship with the environment. Waste management in India falls under the preview of the Union Ministry of Environment, Forest and Climate Change (MOEF&CC). Waste management rules (2016) in India are based on the principles of sustainable development, precaution and polluter pays. Wherever there is life, there is activity; and in most cases, wherever there is activity, it generates waste.

The rapid growth of population and industry, number of vehicles and airplanes has made pollution of environment a serious problem in the surroundings. Increasing urbanization has led to overcrowding of cities. Thus, the lack of space for disposal of garbage and the increase in air, water and soil pollution is affecting quality of life on earth. There is an increase in airborne and waterborne diseases, spoilage of landscape and fear of radioactive waste is affecting all life, humans, plants, animals and marine life, due to environmental pollution.

Environmental pollution is defined as an unfavourable alteration of our surroundings through direct or indirect efforts of changes in the physical chemical and biological characteristics of land, air or water, that harmfully affect human life. Thus, there is an urgent need to find ways of waste management and to reduce impact on the surrounding environment. Now it is our duty to take some important steps to save the environment for future generations. The waste must be recycled, reduced and reused to conserve our resources and protect our environment.

Sources of waste

Ever increasing growth in population, rapidly increasing urbanization, rising standards of living due to technological innovations have contributed to a tremendous increase both in quantity and variety of waste generated by industries, mining, domestic and agricultural activities of human beings. The types of waste can be solid, liquid and gaseous by products resulting from human biological processes, manufacturing, material processing, consumption of goods and any other human activities.



All types of waste are caused due to inefficient management of waste. Hence there are many sources of waste which are broadly categorised as follows-

- Domestic wasteà sewage, kitchen and household garbage
- Agricultural wasteà fertilizers Chemicals pesticides and insecticides
- Industrial wasteà solid liquid and gaseous by product
- Municipal wasteà transport, offices, packaging, clothing, furniture waste; bottles, paints and batteries
- Biomedical Wasteà blades, plastic, surgery and dressing waste etc
- Radioactive wasteà radioactive materials, fuel, coal, minerals, electrical power generation etc.

Impact on surrounding environment

Human activities have been affecting the environment for thousands of years. We have been modifying the environment around us through agriculture, travel and eventually through urbanisation and commercial networks. Our impact on the environment is so substantial that the scientists believe 'Pristine Nature', which is untouched by human interaction, no longer exist. There are many tangible positive and negative impacts our species has on the environment, and we are the ones who will either advance these impacts, or intercede to halt them. Earlier the impact human activities were not very significant because the technology used was not capable of modifying the environment on a large scale. But today human activities use advanced technologies, and these human activities can be grouped into two types-

1. Use of natural resources such as land, food, water, soil, minerals, plants and animals.
2. Production of waste from range of activities including agriculture, industry, mining, as well as waste from our bodies.

Production of waste and pollutants

Following on from our use of natural resources, it is inevitable that waste produced. from the WASH sector, the most important of these all is our own bodily waste. The impacts of open defecation and inadequate sanitation on human health and wider environment are profound. Water borne diseases are caused by pathogens (disease causing agents) in water and food that has been contaminated by the waste from infected people. Preventing this connection between human waste and the intake of contaminated water is the primary goal of this WASH services.

Industry, agriculture and energy production, all generate waste that can pollute air, water and soil. Pollution means introduction into the environment of substances liable to cause harm to humans and other living organisms. For example, the leather industry produces large amount of liquid wastes from the tanning process. These wastes can contain organic material such as fats from the hides, toxic chemicals including some human carcinogens (cancer-causing agents). Another example is the release of so-called greenhouse gases such as carbon dioxide, Methane and nitrous oxide, which contribute to human induced climate change.

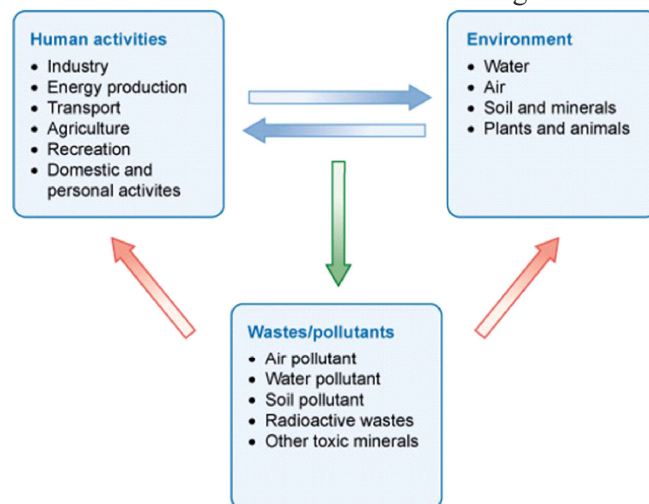


Fig:Human- environment interaction and generation of waste and pollutants.

In the figure above, the green arrow indicates the waste generation as a product of this interaction. The red arrows indicate the negative effect on the environment and humans if the waste is not managed properly.

Technology and the environment

Technology has transformed transport industry, communications and our lives at home and work. For instance, gadgets such as mobile phones, computers, televisions, microwave ovens and refrigerators have improved standard of living for those people who can afford them. Technology can also improve the quality of our

environment. For example, energy can be generated from renewable sources such as wind and solar power, which reduces our reliance on non-renewable energy resources such as fossil fuels, and also helps to reduce the release of polluting gases into the atmosphere.

Another example of the benefits from technology is the highly advanced eco-friendly wastewater treatment plant at the St. George Brewery in Addis Ababa. This plant recovers nutrients and wastewater from the brewery that would otherwise be released into the environment. This type of technology can help to elevate the problem of water shortage, prevent surface water pollution and protect the environment.

Although technology has many positive impacts on people and environment, it also has negative impacts, including the production of toxic waste from technological processes and electronic gadgets that are thrown away when they reach the end of their useful life. Agriculture also plays a role in causing climate change through the release of greenhouse gases into the atmosphere. For example, fertilizers added to the soil release nitrous oxide and livestock production releases methane from the digestion process in cattle and the decomposition of manure. The use of fossil fuels to power agricultural machines and burning trees to clear agriculture land both release carbon dioxide.

Conclusion

Lack of waste management is becoming a universal problem for surrounding environment. People all over the world are looking for more sustainable ways for disposal of the waste to save the environment. There are two ways to solve this problem- Firstly, reduce generation of waste sources, and secondly, find suitable ways to turn waste into wealth, i.e. turn into potential resources.

Hence the basic concept of three R's- reduce reuse and recycle, play the most important role in the waste management strategy for sustainable surrounding environment. Waste can be converted into wealth provided the three R's are effectively implemented. So, to face these environmental challenges it will be necessary to further develop international environmental cooperation for our well-being. We assure the effectiveness of voluntary agreements to peoples' will. It is highly recommended that the effective management for the recovery of wasted resources should be implemented. This include reduce, reuse, recycle and restoration.

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