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Waste Management and Public Health Concern: A Socio-Legal Study

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ABSTRACT

Waste management in India is governed by a variety of laws and regulations at the national, state, and local levels. The waste management laws in India provide a complete framework for waste management practices and handle a variety of waste management issues, such as solid waste, plastic trash, hazardous waste, electronic waste, and others. However, the efficiency and adequacy of these regulations in practice might vary depending on several circumstances. Waste management rules must be properly implemented and enforced to be effective. Waste management rules in India are enforced differently in different states and municipalities. Due to insufficient resources, a lack of knowledge, or poor monitoring methods, enforcement may be lacking in some places. Improving enforcement procedures can assist guarantee that waste management rules are followed. With India's huge and rising population, solving waste management issues is critical for long-term growth. India can safeguard the environment, promote public health, save resources, generate economic opportunities, and contribute to a more sustainable and liveable future by prioritizing waste management and implementing holistic methods. The Solid Waste Management Rules and the Plastic Waste Management Rules in India strive to solve these difficulties and encourage sustainable waste management practices. However, implementation efficacy, infrastructure development, public awareness, and resource availability may all be enhanced. Best practices from other nations can help inform and improve waste management policies in India. Waste management in India poses a number of public health issues due to insufficient infrastructure, poor waste management practices, and a lack of knowledge. India requires a multifaceted strategy. In this article, the researcher tried to identify the key issues related to waste management and their impact on public health in India

***Keywords**: waste management, public health, issues of waste management.*

I. INTRODUCTION

In general, waste refers to anything or material that has been abandoned or is no longer needed and useful. This can include waste, junk, scrap, and other sorts of undesired leftovers. Waste can be created by families, businesses, industries, and other sources and can have a variety of

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environmental, economic, and social consequences if not effectively handled. Effective waste management procedures attempt to limit the quantity of trash created, encourage recycling and reuse of resources, and guarantee that any leftover garbage is securely disposed of or processed to minimize its negative effects on the environment and public health. Waste is defined as any item or substance that is wasted or deemed useless by its owner or maker. Individuals, corporations, and entire communities can create waste in a variety of ways, including solid, liquid, and gas waste. Waste is classified into several kinds, including home waste, industrial waste, hazardous waste, electronic waste, and organic garbage.

(A) Classification of waste:

The Environment Protection Act classifies hazardous waste into three types. The first group consists of source-specific wastes, the second of generic wastes, and the third of commercial chemical products.[3] Waste is divided into several sorts depending on its source, content, and possible influence on the environment and human health. Some examples of common waste are municipal solid waste, hazardous waste, bio-medical waste, agricultural waste, industrial waste, etc. The waste produced by homes, institutions, and businesses. Food waste, paper, plastic, glass, metal, and other items are all included in Municipal Solid Waste. Waste created by industries and enterprises such as manufacturing, building, and mining is referred to as industrial waste. Hazardous waste, building and demolition trash, and electronic waste are all included. Hazardous waste is waste that is poisonous, reactive, or combustible and constitutes a risk to human health or the environment. Chemicals, batteries, and medical waste are a few examples.

Biomedical Waste is produced by healthcare establishments such as hospitals and clinics. It consists of contagious and non-infectious garbage, sharps, and expired medications. Electronic Trash (e-waste) is Waste produced by electronic devices such as computers, cell phones, and televisions. It contains hazardous compounds such as lead, cadmium, and mercury. Waste created during building and demolition operations, such as concrete, wood, bricks, and asphalt, is classified as construction and demolition trash. Agricultural waste includes crop wastes, manure, and pesticides, and is created by farming and agricultural operations.

(B) Waste management system in India:

the Municipal Corporation is in charge of managing the MSW created in the city. Sanitation, street cleaning, epidemic prevention, and food adulteration are all responsibilities of the public health department. The Municipal Corporation has a defined and robust hierarchy of positions.

[3] WASTE MANAGEMENT INITIATIVES IN INDIA FOR HUMAN WELL BEING by Dr. Raveesh Agarwal

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The Mayor wields the most power in the Municipal Corporation and is elected for a five-year term. A City Commissioner reports to the Mayor. There is an Executive Officer that reports to the city commissioner and oversees several departments such as public health, water works, public works, house tax, lighting, projection tax, demand, and a workshop, all of which are headed by their respective department heads. The following people work in the Public Health Department: Chief sanitary and food inspector, Sanitary and food inspectors, Sanitary supervisor, Sweepers, and so on.

The whole functioning of the solid waste management (SWM) system is divided into four categories: street cleaning, collection, transportation, and disposal. The cleaning and collecting activities are handled by the city Municipality Corporation's public health department, while transportation and garbage disposal are handled by the city Municipality Corporation's transportation department. The city as a whole may be split into zones. These zones are further subdivided into sanitary wards for solid waste collection and transportation activities. Currently, waste management in India consists mostly of collecting garbage from residential and industrial areas and disposing it at disposal sites. Authorities, generally municipal, are mandated to handle solid waste created within their respective limits; the typical practise is to extract solid trash from the source of origin and carry it to distant locations known as dumping grounds and/or landfill sites for disposal. Once the garbage has been discharged, the treatment is limited to spreading the heap across a greater area to keep the waste out of sight of the public. Waste collection is mainly done under contract. Rag pickers, small-time contractors, and governments do it in most cities.[4]

To reduce the impact of waste on the environment and public health, proper waste management procedures such as recycling, reuse, and disposal at specified facilities are required. The process of collecting, transporting, processing, and disposing of waste products in a safe and ecologically sound manner is referred to as waste management. It entails a variety of tasks, including waste reduction, recycling, reuse, recovery, and efficient trash disposal. The goal of waste management is to reduce the environmental and human health effects of waste. It entails putting in place methods and technology that encourage sustainable waste management practices and minimize waste generation. Waste management systems might differ based on the type of waste and where it is generated. Municipal waste management, for example, may entail collecting garbage from homes and businesses, sorting items, and processing at designated facilities such as landfills or recycling centers. Hazardous waste management, on the other hand,

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necessitates the use of specialist treatment and disposal facilities to guarantee that the waste is handled properly and does not endanger the environment or public health.

Proper waste management is critical for long-term growth and environmental protection. Governments, corporations, and individuals must all work together to implement appropriate waste management methods in order to maintain a cleaner, safer, and healthier Earth for future generations. Waste management is largely the duty of local municipal councils, or panchayats, in India. The Municipal Solid Waste (MSW) Regulations, 2016, promulgated by the Ministry of Environment, Forestry, and Climate Change, establish the legislative framework for waste management in the country. Municipal authorities or panchayats are responsible for different areas of waste management under the MSW laws, including waste collection, transportation, segregation, processing, and disposal.

They must build ecologically sound and economically successful solid waste management systems, as well as ensuring that waste is managed in a way that does not endanger public health or the environment. Aside from municipal bodies and panchayats, additional stakeholders in waste management in India include waste management businesses, non-governmental organizations (NGOs), and the private sector. The national and state governments also give policy and financial assistance to ensure that waste management methods are implemented effectively across the country. The optimal approach to deal with solid waste is to manage it, which normally entails efficient segregation and scientific recycling of its components. Solid waste management (SWM) is a generally used term that refers to the use of procedures to assure the orderly execution of the many tasks of solid waste collection, transport, processing, treatment, and disposal.[5]

At present, so many villages are lacking proper waste segregation sources. Surrounding small villages are merged with city sanitation and municipal bodies but no additional workers are appointed to do that work. The waste collection is negligible so waste is piling in the city suburbs.

Improper waste disposal procedures can have serious consequences for human health. Here are some of the ways that waste disposal can harm public health.

- Water Source Contamination: Poor garbage disposal may contaminate water sources such as rivers and lakes with dangerous chemicals and bacteria. Water-borne infections such as cholera, typhoid, and hepatitis A can result from this.

[5] Robinson, 1986

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- Air Pollution: Landfills and incinerators can emit hazardous chemicals and particle matter into the air, causing respiratory issues like asthma, lung cancer, and heart disease.
- Vector-borne illnesses: Improperly discarded garbage can serve as a breeding ground for pests such as mosquitos, rodents, and flies, which can transmit diseases such as dengue fever, malaria, and leptospirosis.
- Hazardous Chemicals and Biological Agents: Waste management personnel, such as garbage pickers, landfill workers, and waste incinerator workers, are at danger of being exposed to hazardous chemicals and biological agents, which can cause respiratory difficulties, skin illnesses, and cancer.
- Chemical Exposure: Poor hazardous waste disposal can result in the discharge of dangerous chemicals that pollute soil and water sources. This can have long-term health consequences such as cancer, reproductive issues, and birth deformities.

(C) Waste disposal laws in India:

In India, the duty for making and enforcing legislation on subjects such as "Health, Sanitation, and Hygiene" falls to the state government. (Article 243W, 12th Schedule of the Indian Constitution). Similarly, Item 6, List II, Schedule VII of the Indian Constitution authorises local governments to conduct public health measures. The directive principles of state policy and numerous legislation describe the right to a clean and healthy environment, as well as the obligations that go with it.[6]

Waste disposal in India is governed by different laws and regulations at the national, state, and local levels. Following are some of the important waste disposal rules and laws in India.

Municipal Solid Wastes (Management and Handling) Regulations, 2000: This is a collection of guidelines for the management and disposal of municipal solid waste in India. It establishes local authorities' obligations and compels them to build ecologically sound and economically sustainable waste management systems.

The 2016 Hazardous Waste (Management, Handling, and Transboundary Transportation) Rules: This rule governs hazardous waste management, handling, and transboundary transportation in India. It requires companies that generate hazardous waste to acquire state pollution control board approval and dispose of the trash at specified locations.

The Bio-Medical Waste (Management and Handling) Regulations, 2016, are as follows: This

[6] Journey of Waste Management Regulations in India: A historical account
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regulation governs the management and disposal of biological waste produced by healthcare institutions. It mandates healthcare institutions to separate and dispose of biological waste in a safe and ecologically responsible way.

The 2016 Plastic Waste Management Rules: This law governs the disposal of plastic garbage in India. It establishes the roles of manufacturers, consumers, and local governments in handling plastic waste and encourages the adoption of ecologically acceptable alternatives to plastic.

The 2016 e-Waste (Management) Rules: This rule governs the disposal of electronic trash in India. It compels electronic equipment manufacturers to collect and dispose of e-waste in an ecologically responsible way, and it promotes e-waste recycling and reuse.

These rules and regulations attempt to promote sustainable waste management methods while also safeguarding the environment and public health in India. They establish a legal framework for waste management and define the roles and duties of numerous parties, including government agencies, businesses, and people.

In many situations, Supreme Court and national green tribunal made it clear that there is lack of implementation of sound scientific solutions for waste management in so many places in India.[7]

In India, proper waste management is significant for various reasons, including:

- Safeguarding Public Health: Effective garbage disposal helps to minimize disease transmission by decreasing people's exposure to the waste, which can serve as a breeding ground for disease-causing microbes.
- Environmental Protection: Poor garbage disposal may pollute soil, air, and water resources, harming the ecosystem and creatures that rely on them. Recycling and composting, for example, can help to minimize pollution and protect natural resources.
- Resource Conservation: Waste disposal strategies such as recycling and reuse can aid in the conservation of resources such as water, electricity, and raw materials.
- Greenhouse Gas Emissions Reduction: Landfills are a major source of greenhouse gas emissions, which contribute to climate change. Waste reduction, recycling, and composting, among other waste disposal measures, can assist to reduce greenhouse gas emissions.

[7] M/S PAHWA PLASTICS PVT. LTD. AND ANR. Versus DASTAK NGO AND ORS.

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- Aesthetic Value: Appropriate trash disposal aids in the preservation of the environment's cleanliness and attractiveness. This can improve the quality of living while also encouraging tourist and economic development.

II. CONCLUSION

To sum up, appropriate waste disposal is critical for public health, resource conservation, pollution reduction, and economic and social growth in India. To reduce the harmful effects of trash on the environment and public health, it is critical to encourage sustainable waste management techniques.

Waste-to-Energy generation is rapidly being considered as a viable energy diversification option, notably in Sweden, which has been a pioneer in W-t-E production for the last 20 years. The normal range of net electrical energy that may be produced per tonne of burned garbage is 500-600 kWh.

The notion of converting waste materials into valuable resources or goods is known as waste to riches. This method seeks to encourage sustainable development by minimizing trash generation and reusing it as a resource rather than discarding it as junk.

There are several methods for converting trash into wealth, including recycling, composting, and up cycling. Recycling entails collecting and processing waste materials to create new items, such as polyester garments made from plastic bottles. Composting is the process of decomposing organic waste into nutrient-rich soil that may be utilized for gardening or farming. Up cycling is the process of reusing waste resources to produce new and higher-value items, such as furniture made from used tires.

The waste-to-wealth technique has several advantages, including reduced waste and pollution, conservation of natural resources, employment creation, and economic growth. It also contributes to mitigating environmental issues such as climate change, which is compounded by greenhouse gas emissions from waste disposal methods like as landfilling. Ultimately, waste to wealth is a critical notion that can assist us in creating a more sustainable and prosperous future. By using this strategy, we may lessen our environmental effects while simultaneously providing economic and social advantages.

Proper waste management methods, such as waste reduction, recycling, and safe disposal, are critical for mitigating the impact of waste disposal on health. These methods can assist to prevent exposure to hazardous chemicals and the risk of health issues related to waste disposal.

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