SOLID WASTE: A MENACE TO ENVIRONMENT AND HUMAN HEALTH

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Category: Opinions

The World Health Organization defines solid waste as any garbage, trash, refuse or discarded material which can be classified according to the source of production as municipal waste, healthcare waste and e-waste. Annually about 2 billion tonnes of municipal waste and 54 million tons of e-waste are generated. According to the World Bank report of 2016, solid waste generated by the world's cities amounts to 0.74 kg/capita/day which is expected to rise several fold due to increased urbanization and change of lifestyle. In India an average of 160038.9 tons per day of solid waste is generated of which only 50% is treated (*MSW_AnnualReport_2020-21.Pdf*, n.d.). Proper collection and treatment before disposal is essential to protect the environment and human health which otherwise can cause serious health issues due to leaching, groundwater pollution, biochemical pollution of the soil and air pollution(*WHO-HEP-ECH-AQH-2021.8-Eng.Pdf*, n.d.) (Malangmei & Bhushan Singh, 2023)

Solid waste management is the process of collecting, segregating, treating, recycling what can be used and disposing of waste materials in a scientific and systematic approach so as to reduce to least negative impact on the environment and human health. Studies have found that dumping of solid waste without proper treatment pollutes underground water and above ground water significantly through leaching(Rajkumar et al., 2010). The changing lifestyle and growth of population are major driving forces resulting in increased per capita waste production(Singh & Dey, 2015). Globally plastic waste constitutes the third largest share of overall waste production which not only pollutes the land environment but also the marine environment (Ritchie et al., 2023). Maximum of the waste is contributed by household wastes consisting of kitchen waste, packaging waste such as

plastics, polythene bags, electronic waste, clothes, industrial waste etc. Today, we are in a world where fancy packaging seems to be more hygienic, where deep freeze packaged foods are luxurious and the so-called high-quality foods come with multiple layers of packaging done with high tech involving lots of energy expenses. On the other hand, the exposure to various communicable diseases led man to use single use crockeries rather than the use of reusable utensils made of steel or glass ware especially in restaurants. Fast food home delivered food comes with layers of packages from aluminum foil to one time use polythene, poly bags etc. The new generation today are less aware of carrying their own carry bags in marketing which was almost a tradition a few decades back. In fact, it would not be wrong to say that the modern generation of today creates more waste.

States in India have adopted various waste management policies and programs. However, a lot is yet to develop as only 14 out of 29 states have achieved 100 percent waste collection (*MSW_AnnualReport_2020-21.Pdf*, n.d.). Though states started to adopt several stringent practices people are less aware of the segregation methods and the ways we dispose. As per the report municipal areas in the country generate 1,33,760 metric tons of plastic solid waste. India generates 3.4 million tons of plastic waste(*Waste Management*, n.d.) annually. The average daily per capita solid waste production in different states ranges from less than 50 gm to 450 gm (*MSW_AnnualReport_2020-21.Pdf*, n.d.). The waste collection system in Karnataka is comparatively good with respect to Manipur where efforts are made by the Karnataka Government to make people aware of waste segregation at source. Collection of wet and dry waste is done on separate days and the municipality refuses to take waste on wrong days. The per capita solid waste generation of Manipur stands at 100gm way above larger states like Rajasthan, Madya Pradesh, Jharkhand (*MSW_AnnualReport_2020-21.Pdf*, n.d.). The management and disposal techniques in the state is pathetic with hardly 40% treated. Most of the waste is dumped without proper treatment in landfills. Organic material makes up to 60% of the solid waste in urban areas(Singh & Dey, 2015). The collection of waste in city areas is taken care of by Municipal corporations/councils, Non-governmental Organizations, and private firms. In rural areas people dug disposal sites at the backyard as hardly any waste collection system is employed. Irregular collection and non-segregation of wet waste, dry waste, poor segregation of electronic waste and even hospital waste has created hazardous conditions(Singh & Dey, 2015). The collection system falls behind requirement as waste generation outweighs the collection containers placed by municipalities at places. In the city area, out of an estimated 110 tons of waste generated only 50% is collected and the remaining 50% ends up in rivers Imphal and Nambul which runs through the city, making the rivers unfit for consumption. Of the 50% collected maximum ends in landfills and very poor recycling(Singh & Dey, 2015). Unaware of color coding and knowledge of waste segregation, people damp almost all waste together in polythene bags, thermocol or sacks(*Waste Management*, n.d.). Untreated sewage discharge, chemical leaching, open dumping has affected aquatic life and flora and fauna of the states. Lack of proper planning of waste recycling plants led to defective functioning and underutilization (https://www.krctimes.com/stories/tackling-solid-waste-management-in-manipur/).

Urban area of Manipur mainly faced the problem of waste disposal as unlike rural areas there is population pressure on land. There are no big industries or manufacturing companies operating in Manipur as of now which contributes to waste. Household and municipal waste are major contributors (Singh & Dey, 2015). If the government and related stakeholders plan and implement a proper systematic approach the problem can be solved to a larger extent. For example, since 60% of collected waste is organic if maximum can be utilized in organic manure production through vermicomposting and other forms of organic decomposition, the disposal burden will be much reduced. Public can be trained to generate vermicomposting sites and it would reduce burden on waste disposal. It is high time all stakeholders including students, NGOs, local leaders, government officials, public leaders come together and plan out to handle waste management menace at the earliest. There is an urgent need to spread awareness, educate and give proper guidance on waste segregation at the source. Better collection strategy should be adopted and point sources segregation of waste type must be compulsorily adopted. Recently plastic bottle banks have been placed in city areas to collect used water bottles for recycling (https://e-pao.net/GP.asp?src=53..270822.aug22) the idea needs to be expanded to rural areas before it becomes too late.

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