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INDUSTRIAL WASTES MANAGEMENT PROBLEMS IN INDIA

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Abstract

About thirty percent of the gross value added in India comes from the industrial sector, which is a major contributor to the country's economy. Conversely, the industry, along with the fruit, juice, chip, meat, and confectionery sectors, produces massive volumes of wastes and related effluents every year. These wastes have the potential to pollute the ecosystem and negatively impact both human and animal health if they are released into the environment without following the correct disposal procedures. Since most industrial wastes are unused and untreated, they are typically disposed of by burning, dumping, or haphazard land filling, according to most reports. Because these untreated wastes produce more greenhouse gases, they exacerbate various climate change issues. The objectives of this paper are to prevent or minimize waste, safeguard human health, preserve natural resources and energy, and clean up garbage when necessary.

Key Words: *Industrial Wastes, Economic & Ecological Analysis, 3 R's, IWM, EBIC*

Introduction

The industrialized world generates enormous amounts of waste annually. Over the past few decades, industrial waste creation has skyrocketed globally, and there are no indications that this trend will abate. The fruit, juice, chip, meat, and confectionery industries, as well as other food processing sectors in particular, generate enormous amounts of organic wastes and associated effluents annually. There are various energy sources that can be employed with these organic wastes. As the population keeps growing, so does the need for food & its applications. Thus, in order to meet the region's food needs, the food and beverage sectors have grown significantly in the majority of the countries. Studies show that between 10 and 15 percent of India's industrial waste is deemed dangerous.

Industrial Wastes Problems

Many developing countries making the transition to industrialization lack the resources or technology necessary to properly dispose of their waste without harming the environment. These solid wastes should be handled by the industries that generate them. Several tactics and strategies must be used to manage industrial solid wastes. Many small and large industrial facilities simply dump their waste, which is usually hazardous and toxic, near water sources and in open spaces. Over the past thirty years, numerous examples of these sectors causing significant and long-lasting environmental harm have come to light.

A recent MNRE study indicates that there is a potential of roughly 1300 MW from industrial wastes.

Grouping of Industrial Waste

Industrial wastes can be broadly divided into two categories.

1. Dangerous waste from industry
2. Industrial waste that isn't dangerous

This paper offers a number of remedies for environmental problems involving the manufacturing sector's own pollution. There is still much to be done to properly separate and treat waste, even though some steps have been taken to address India's dire waste management problem by introducing composting, reusing, and recycling of the waste. Studies show that between 10 and 15 percent of India's industrial waste is deemed dangerous. Hazardous waste is defined by the Ministry of Environment, Forestry, and Climate Change as any waste whose physical, chemical, or biological makeup makes it likely to be harmful to human health or the environment. Hazardous waste is produced in large amounts in India by petrochemicals, pharmaceuticals, chemicals, fertilizers, general engineering, and other industries. It is estimated that India produces 74.6 lakh tonnes of hazardous waste per year. Approximately 34.1 lakh tonnes, or 46% of the total, of this waste can be disposed of in landfills. It is dangerous for drinking water to be contaminated by hazardous waste that seeps into drainage systems. Prior to the regulations being revised in 2016, industrialized countries like Malaysia and Saudi Arabia also exported hazardous waste to India for recycling and reprocessing. Hazardous waste in India is currently dumped in landfills along with regular waste. These landfills, which are specifically designed to dispose of hazardous waste, are not scientifically designed dump sites.

Industrial Wastewaters:

Industry dumped industrial wastewaters into sewage treatment facilities. Industry has long considered the free or nominal use of the municipal system to be an unofficial "boon." Since it spared the industry itself from managerial and/or legal obligations, even the prohibitive charge has frequently been economically acceptable to the industry. Industry has looked for alternative solutions due to the issues and inefficiency of combined treatment, as well as the circumstances that automatically require its rejection. The most sensible and practical approach is to reuse the wastes, albeit inside the industrial facility. The next option for reusing waste is to hire a

"scavenger" collector to deliver the waste to a sizable, central facility that disposes of industrial waste. The direct marketing of waste as a resource for another industrial plant is the final method of reusing waste. The shortcomings of combined treatment have led to the development of a new approach known as the environmentally balanced industrial complex (EBIC). In order to reduce (or even completely eliminate) the negative effects of industrial production on the environment, the EBIC is a carefully chosen group of compatible industrial plants grouped together in a single area (complex). By using the waste products from one plant as the raw materials for another with the least amount of raw material preparation, storage, and transportation, these goals are achieved. A manufacturing plant can save a lot of money on overall production costs by not treating its waste or storing or pretreating some of its raw materials.

Inadequate infrastructure for hazardous waste recycling and scientific disposal is the another reason behind India's poor handling of such waste. One of the most common and fundamental disposal techniques for hazardous waste is still burning it in landfills, which poses serious risks to human health and the environment. The collection and transportation of industrial hazardous waste often takes place in the same container as dry or wet waste, creating more difficulties for recycling and waste segregation. Another factor is the absence of infrastructure for incineration in India. The majority of trash collectors' burn waste at high temperatures out of habit, which is hard to regulate. In most cases, hazardous waste collectors are underpaid, undertrained, and poorly equipped.

Industrial Wastes Management in India

The Indian government gave numerous startups the chance to handle waste management and provide innovative solutions through the **Swach Bharat Abhiyan**. The nation is moving forward to address this issue in a more scientific manner thanks to such government initiatives. India can also take a cue from nations like Estonia and Sweden, which have developed specialized trucks for the collection and direct delivery of hazardous waste to waste treatment facilities. India has taken proactive measures to ensure that no hazardous waste from overseas ends up on its soil by prohibiting the import of solid plastic waste. The Hazardous Waste Management Code was updated in 2016 and contains guidelines for safe disposal, recycling, prevention, and reduction of hazardous waste. The regulations also mandate that state governments.

Conclusion:

India's industry plays a significant role in both environmental degradation and health risks. Large waste piles that frequently contaminate soil and water sources result from the industry's excessive production of waste that is not sufficiently recycled or composted. The Indian government has passed a number of laws and regulations to regulate the industry in an effort to address the problem, but because of opposition from the sector, progress has been sluggish. An overview of India's industrial waste management issue is given in this article, along with suggestions for improvement.

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