

THE PLASTIC WASTE MANAGEMENT RULES IN INDIA: LEGAL FRAMEWORK, CHALLENGES, AND THE ROAD AHEAD

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This paper analyses the problem of locally generated plastic waste creating a global problem when it is getting washed away by local and international water. It specifically shows various data of the usage of plastic and harmful effects of it throughout the globe. It also underlines the importance of effective management of garbage and recycling of plastic on international level. It is crucial for protecting the environment as well as the marine ecosystem which is getting affected most worstly by plastic. Lastly it encompasses the legal attributes and Extended Producer Responsibility to be the guiding force to channelize through this problem.

Introduction

India's plastic predicament is a global concern. India a land of rapid industrialization, development and cultural amalgamation, is known for its densely populated cities, diverse heritage and various culture. But amid this progressive society there lies a formidable problem of plastic waste. This growing problem is very much evident in urban areas where the plastic wastes from all over the city get washed away through the drainage, clogging the streets and water ways all along the way making a unsightly and unhealthy environment. Though India has policies and legislations dealing with plastic waste management but it has far reaching implications on it. This issue is not just a local issue but it has spread its arms throughout the the world and the whole world is grappling with it. The local plastic waste generated turns out to be a global problem when such wastes get washed away with the rain water and gets accumulated in the international waters through rivers, affecting marine life including the marine species and ecosystem

What is Plastic? — Types, Genesis, and Environmental Footprint

The word plastic means material composed of synthetic or semi synthetic organic polymers, which are just a large molecule consisting of repeated sub units. These polymers are composed of monomers such as ethylene, propylene etc. which are primarily derived from fossil hydrocarbons. One of the greatest advantage of this plastic is that they can be moulded in various shapes and sizes confirming its rigidity and elasticity. But one of the greatest disadvantage of it is that they are not readily degradable and thus goes on accumulating in the environment. The only way to destroy these plastics is destructive thermal treatment like combustion or pyrolysis¹.

Destructive Effects of Plastics

Since the beginning of the use of plastics, its usage has exploded. Nearly 8.3B plastics has been created by human since then². Only 9% of the waste ends up getting recycled of the total number of plastics produced from 1950 to 2015³. It has been estimated that there has been almost 5.25T plastics pieces in the oceans which is still increasing by around 13M metric Tons of plastic every year⁴. Ocean currents cause some of this to collect in the great Pacific Garbage Patch, an accumulation of trash that

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covers around 1.6 KM sq. Area. This situation is taking deadly shape as worldwide people use 500 M single use plastic bags every year. These plastics either ends up in trash or litter the public places.

Such humongous use of plastics leads to killing of 100,00 Marine animals and 1 M sea birds a year. The worst part is that these plastics not only take hundreds of years to decompose but in the mean time they get converted into micro-plastics (Less than 5 mm in length). According to United State National Oceanic and Atmospheric Administration the presence can be traced in food-chain from salt to drinking water. China has a serious garbage problem as the largest rubbish dump got filled up 25 years ahead of the scheduled time⁵.

Indian Scenario

Over 350 Million tonnes of plastics are produced globally in each year. Less than 14% gets recycled. The projected estimation shows that the global plastic production will go upto 1 Billion tonnes by 2040. Apart from it 11 Million tonnes of plastic wastes enter the ocean every year. It is like a garbage filled truck unloading in ocean every minuit everyday. The shared global challenge poses a sever threat to the environment, natutal habitat, ocean, marine life, human health and wildlife. It is surprising to note that 90% of the total plastics entering in ocean comes from Asia, Africa and Latin America⁶. Thus it can be seen that the increase waste production mainly from the developing countries. Though the developed countries make a significant amount of plastic waste but it is due to the increasing population and poor waste management system leads to billions of tonnes of plastic waste filling up in the landfill, ultimately reaching oceans and threatening marine life, ecosystem and human health. The ocean plastic pollution primarily originates from land with land based sources contributing to 80% of the all plastics waste in the ocean. The other 20% gets contributed from marine debris and abandon fishing nets.

Situated in the heart of South asia, bordered by Indian Ocean and Bay of Bengal is one of the most populous countries in the world with more than 13 Million mismanaged plastic waste per year. If we consider ganga river, it carries tonnes of plastic waste every year from mountains to ocean. Demanding urgent action against this severe crisis, in one of the most world's revered landscape.

Due to rapid urbanization, industrialization and brimming population plastic waste has increased at an

alarming rate in India. In India mostly in metro cities and urban areas the demand supply and wastage of single use plastic has risen drastically over the years. Though the per capita income is not at par in the competitive market but the per capita plastic consumption in India has touched 11kg per year which is expected to increase in coming years.

Legal Arena

The Plastics Waste Management Rules, 2016 (PWM Rules, 2016), which were announced under the Environment (Protection) Act, 1986, serve as the main legal framework managing plastic trash in India. By adding the concept of Extended Producer Responsibility (EPR), tightening compliance procedures, and extending responsibilities, these regulations represented a substantial change from the previous 2011 framework. EPR acknowledged that waste management must be a shared responsibility along the value chain rather than the exclusive responsibility of local authorities by placing the burden of collecting, recycling, and disposing of plastic trash in an ecologically responsible manner on producers, brand owners, and importers⁷.

Both strong institutional strengthening and legislative improvement are necessary for the future. First, more precise compliance requirements, consistent enforcement procedures, and real-time data integration between federal and state agencies are required to support the legal framework. Simplifying the EPR portal's tracking, reporting, and registration processes will improve transparency and lessen regulatory arbitrage. Second, social justice will be ensured and collection efficiency will be greatly increased by incorporating the informal waste-picker sector into the formal compliance chain through recognition, training, and social protections. Third, in order to encourage investment in cutting-edge recycling technologies like chemical and pyrolytic recycling, India needs extend its recycling infrastructure through fiscal incentives, viability-gap funding, and public-private partnerships⁸. □

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