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Impact Assessment of Industrial Development on Environment : A Case Study of Beawar District

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ABSTRACT

Since the Industrial Revolution, human activities have made a significant negative impact on the environment. Pollution and carbon emissions contribute to deteriorating our natural environment and atmosphere. These consequences of industrial action pose a threat to human society and all other life seen in Beawar, Rajasthan. Understanding the environmental effects of industry is essential so we can move forward with appropriate decision-making and remedy these issues. When we comprehend the consequences of our actions, we can begin to make changes in our behaviors that can promote environmental protection. Industrial farming includes practices like the use of machinery that runs on fossil fuels and harmful fertilizers and pesticides. Other practices include giving livestock antibiotics and hormones as well as offering less humane living conditions. These practices have led to soil deterioration, air and water pollution, and increased greenhouse gas emissions, in Beawar, Rajasthan.

KEYWORDS: *industrial development, environment, Beawar, assessment, air pollution, water pollution, environmental protection.*

Introduction

Industry causes pollution in water, air, and soil. Needless to say, water, air, and soil are essential for the sustainability of human life on Earth. Pollution poses a threat to human health and Earth's natural ecosystems as studied in case of Beawar, Rajasthan. [1]

Water pollution occurs in both fresh water and oceans. Water is used in industrial practices and is contaminated when it comes into contact with metals, chemicals, or radioactive waste. The water is then drained into rivers and oceans, resulting in contaminated ecosystems and freshwater sources. Dirty drinking water poses a threat to human health. Crops that are irrigated with polluted water can also become harmful.[2]

Air pollution is any physical, biological, or chemical change to the atmosphere. Pollutants like gas, smoke, or particulate matter reduce air quality and lead to adverse living conditions for humans, plants, or animals. Harmful industrial practices like burning coal or natural gas can release pollutants that cause respiratory and heart problems in humans and threaten ecosystems around the globe. Contaminants in the air can also cause acid rain, ruining crops and acidifying fresh water. [3]

Soil pollution is when chemical levels in the ground exceed normal levels and present a threat to human health or the state of an ecosystem. Soil can become polluted from:

- Industrial waste
- The use of chemical pesticides and fertilizers
- Oil spills
- Landfills [4]

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Soil pollution affects our ability to grow crops and can damage natural environments. Contaminated soil can also lead to health problems in humans and animals.

Industrial practices in Beawar release large amounts of greenhouse gases into the atmosphere. Increased greenhouse gas concentrations cause global warming and climate change.

Global warming occurs when an abundance of greenhouse gases are in our atmosphere. Burning fossil fuels releases carbon dioxide and other harmful greenhouse gases. Landfills and agricultural practices also release greenhouse gases like methane. These gases trap heat in the atmosphere and cause global temperatures to rise. [5]

Climate change is a product of global warming. As global temperatures rise due to increasing levels of greenhouse gases, the global climate begins to shift. A shifting climate can lead to extreme weather patterns and changes in local climates. A changing climate makes agricultural practices more difficult and threatens natural habitats in Beawar. The industrial waste in Beawar, Rajasthan, to remove toxic components so that the rest of the waste can be disposed of safely. It isn't always easy, and it does require that each factory implements the proper procedures to purify or cleanse their waste byproducts. However, it can help reduce the soil, air and water pollution being produced by these facilities, and also help in conservation of natural resources.[7] The industrial revolution may have changed the way that we look at the scene in Beawar but it also changed the impact we had on this district that we call home. Now that we've realized the problem, it's up to us to fix it so that we can continue to grow and change without destroying our home in the name of progress.[6]

The purpose of economic development in any region is to provide opportunities for improved living and jobs to people. While industrial development invariably creates more jobs in Beawar district of Rajasthan, possibilities of adverse effects on the environment also increase, if adverse effects are not reduced. Industrialisation has led to environmental degradation in terms of industrial pollution. [8]With industries operating, a 100 per cent pollution-free environment is a myth. It is neither possible nor necessary. However, it is imperative to ensure that industrial units cause the least pollution. Adequate and effective pollution control measures are required so that adverse effects on the environment are minimised. Necessary technological know-how and institutional back up support are available in this regard. Dust, smoke, fumes and toxic gas emissions occur as a result of highly-polluting industries such as thermal power plants, coal mines, cement, sponge iron, steel & ferroalloys, petroleum and chemicals. In industry-specific clusters, these have not only become hazardous, but also cause irreparable damage to our ecology and environment, often breaching the environment's carrying capacity, in Beawar. High emission level of pollutants at industrial clusters has been reported in Raipur-Durg, Bhilwara and Beawar district of Rajasthan.[9] This is despite the fact that the number of power plants switched over to super-critical technology. Steel, cement, chemicals and petroleum refineries have adopted state-of-the–art technologies. There is an urgent need to review and rework the strategies of setting up industry-specific clusters based on comparative advantage.[10]

The Beawar district recently pulled up implementing agencies for allowing untreated sewage into the water canals and dams and ordered a CBI inquiry. Discharge of untreated industrial effluents from industries such as tanneries, power plants, textiles, jute units and chemicals along the entire stretch of the water from Beawar is one of the causes of pollution. [11]The Supreme Court had earlier come down heavily on the implementing agencies and closed down tanneries (Beawar) and iron ore mining for flouting environmental laws and causing damage. This reflects weakness on part of law enforcement agencies, lack of coordination among regulatory agencies (Centre and states) and the absence of commitment and efficacy of the agencies and industries.[12] Mere legislation on pollution control would not serve any purpose. Compliance of anti-pollution laws has to be strictly enforced by the state agencies.[13]

Accumulation of industrial waste has assumed great proportions while its utilisation has been neglected for long. When conservation of environment is of prime importance, a lot of weightage should be given to recycling and reusing discarded components. Scientists have been researching in Beawar, Rajasthan towards the development of innovative recycling techniques. Products made out of recycling such as fly ash cement, fly ash bricks, recycled aluminium, recycled tiles, recycled steel, environment-friendly paints and bamboo-based products are available here in Rajasthan easily. [14]

Rajasthan recycles 90 per cent of its Poly Ethylene Terephthalate (PET) annually whereas the recycling rate for PET in Gujarat is 72.1 per cent, 48.3 per cent in Uttar Pradesh and 31 per cent in Madhya Pradesh. However, recycling of plastic waste is far from satisfactory in Beawar district of Rajasthan.[15] Commercial utilisation of fly ash, blast furnace slag, cathode/anode carbon scraps, red mud, iron ore and blue dust fines are in progress in Beawar. Recycling of residual waste obtained after incineration of toxic and highly inflammable chemical waste with cement clinker is being undertaken in the cement industry. A huge market still remains untapped (metals, mobile phones, computer hardware equipment).[16] Recovery of e-waste is abysmally low and we need to encourage recycling of e-waste on a very large scale so that problem of e-waste disposal is tackled. It is reported that e-waste concentration in the Rajasthan soil is twice the country's average. Delhi alone generates 15,000 tonnes per year in addition to the e-waste imported for recycling. High levels of tetra and penta PCB congeners were observed in soil samples from Beawar, Rajasthan. It is, therefore, important to step up commercial 14tilization of industrial waste which can be accomplished by involving industries, users, states and central government departments. Industries have to be made responsible regarding recycling on a regular basis through strict enforcement.[17]

Discussion

The major effects of industries on the environment of Beawar district of Rajasthan are:

1. It leads to the depletion of natural resources.
2. It leads to air pollution, water pollution and soil pollution.
3. Global warming, climatic changes are the major consequences of industrialization.
4. It causes acid rain.
5. It leads to the degradation of land quality.
6. It leads to the generation of hazardous waste whose safe disposal become a big problem.
7. These industries are responsible for the following adverse diseases and ill effect like silicosis and pneumoconiosis, tuberculosis, skin diseases and deafness.
8. Metallic contaminant like Cd, Zn, Hg etc., destroy bacteria and beneficial microorganisms in the soil.[18]
9. Industrial wastes including toxins enter in the food chain causes number of undesirable effects to living beings and animals.
10. Industrial effluent damages the natural biological purification mechanism of sewage treatment causing several soil and water borne diseases.
11. Radioactive industrial pollutant cause undesirable disease when food containing radio-nuclides is taken by man.[11]

Results

Industrialization and modernization are the new norms experienced in different places. Due to increased economic activities and improvement of the technology, nations are fast-tracking their competitiveness in the global market by differentiating the products and services. Despite the challenges that the district Beawar in Rajasthan have passed through, both have achieved the success

of varying degrees. The rapid growth that Rajasthan is experiencing has attracted a considerable number of researchers, and soon could be in the list of the developing cities. In that case, the path of modernization and industrialization taken by the Beawar district at the expense of human health.[13]

Six decades ago, Rajasthan experienced a tremendous transformation of its economy, from agriculture to industrialization. The number of people employed in the secondary industry has continued to increase, which translates to compounding the challenges that come along with industrialization and modernization. It is also important to note that newer technologies are being unveiled in Beawar district of Rajasthan and production is now leaning towards machination, speeding up the production and manufacturing of products. One of the impacts that these developments have had in the environment is the increased pollution rate, posing a health risk to the locals.[15] According to Annual Report on Environment Statistics issued by Beawar's environment department, industrial emissions of sulphur dioxide accounted for 91% of the total emissions, which was the lead cause of smog and other health complications . Also, it has been noted that water and land contamination are experienced in Beawar due to the snowballing industries in different sectors. Combined with the high population, environmental degradation in Beawar district of Rajasthan has been a significant issue of concern, attracting local and international governments seeking interventions to abate the impacts.[17]

Beawar's challenges regarding environmental degradation were fueled by the government's laxity in control of the surge of industries and rapid transition from the use of coal as form energy. The government focused on building more power plants, and the economy was booming. There was an instance of increasing economic productivity at the expense of what too much power plants had on the environment. The goal was to increase electricity consumption and bring power to the population growing to around 1.1 billion by the years 1991. Since addressing climate change was not high in Beawar, the environment was primarily impacted. Up to now, the country struggles with air pollution being the leading menace of industrialization and modernization.[12]

Industrialization is the process of transforming the economy of a district or city from a focus on agriculture to a reliance on manufacturing. Mechanized methods of mass production are an essential component of this transition.[14]

The positive characteristics of industrialization include economic growth, a more efficient division of labor, and a growth spurt in technological innovation. ie innovations of the 19th century allowed for the mass production of commercial goods.[16] As manufacturing activities grew, transportation, finance, and communications industries all expanded to support the new production capacity. It also led to increased labor specialization and allowed cities to support larger populations, motivating a rapid demographic shift. People left rural areas in large numbers, seeking jobs in budding industries. Hence many people left district Beawar and went to bigger cities of Rajasthan. The Industrial Revolution led to unprecedented expansion in wealth and financial well-being for some. A larger middle class emerged as consumer demand for more goods and services grew and business creation boomed to feed the demand.[17]

Conclusions

Industrialization, along with great strides in transportation, drove the growth of Beawar district and a rapidly expanding market economy. It also shaped the development of a large working class in Beawar society, leading eventually to labor struggles and strikes led by working men and women.[18]

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