



A Case Study About Major Environment Challenges In Dholpur District Of Rajasthan

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Abstract

This paper deals with study about major environment issues and challenges in Dholpur district of Rajasthan .

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1. Introduction

Dholpur is a city in the Indian state of Rajasthan, specifically in the Dholpur district. The Chambal River's left bank is where Dholpur is located. The city serves as the district of Dholpur's administrative center. In 1982, Dholpur was merged into a separate district, which included the tehsils of Bari, Baseri, Rajakhera, Saipau, Basai Nawab, Dholpur, and Saramathura. Dholpur District is a part of the Division/Commissionerate of Bharatpur. It is bordered by the North Bharatpur district of Rajasthan, the North Agra District of Uttar Pradesh, the North and North east Morena District of Madhya Pradesh, the South Karauli district, and the East Uttar Pradesh and Madhya Pradesh. Dholpur is situated 66 km from Gwalior, 55 km from Agra, and 27 km from Morena.

The city of Dholpur, also known as Dhaulpur, is located across the river and the Madhya Pradesh province line from Morena on the left (north) bank of the Chambal River at 26° 42' 0" North, 77° 54' 0" East. It is a North Central Railway junction and is situated on the former NH-3. Dholpur city is 33.3 square kilometers (12.9 square miles) in size.

Water scarcity, industrial pollution, and, more recently, a sharp decline in air quality are the main environmental issues facing Dholpur. Being an aspirational area, it also faces challenges with improper waste management and irresponsible land use.

2. Ecosystem in Dholpur

In addition to being a key region for the protection of the Gharial and other frequently endangered wild creatures, Dholpur in eastern Rajasthan boasts a rich variety of dry deciduous woods, steep Vindhyan plateaus, craggy ravines, and riparian habitat of the Chambal River.

The following are important elements of the Dholpur ecosystem:-

2.1 Ecosystem of Chambal River:

The 5,400-acre National Chambal Sanctuary near Dholpur, Rajasthan, includes the Chambal River, an important and relatively pristine ecology. For endangered species like the Gangetic dolphin and the Gharialmugger crocodile, it provides vital habitat. The river is also well known for its steep ravines, beautiful boat safaris, and more than 300 different bird species.

2.2 Wildlife Sanctuaries:

In order to protect the dry deciduous forests and wildlife of Dholpur, Rajasthan, three major wildlife sanctuaries were established in 1955: Kesarbagh Wildlife Sanctuary, an important ecological corridor; Van Vihar Wildlife Sanctuary, home to sloth bears and leopards; and Ramsagar Wildlife Sanctuary, famous for its lake, crocodiles, and migratory birds.

- The 25-square-kilometer Van Vihar Wildlife Sanctuary, which is situated on the Vindhyan Plateau, is home to sloth bears, sambhar, chital, blue bulls (nilgai), and wild boar.
- Known for the Ramsagar Lake, a vital habitat for fish, snakes, and freshwater crocodiles, is the Ram Sagar Sanctuary.
- Kesarbagh Wildlife Sanctuary: Covering 14.76 sq km, it is situated in the Dholpur district. It is a dry deciduous

thorny forest that is one of the oldest protected areas. It is a great place to observe birds and small carnivores. Wildlife includes jackals, sloth bears, hyenas, and numerous birds.

2.3 Distinct Biodiversity:

Apart from offering habitat to migratory birds and other animals such as the Indian fox, the region is well known for its thriving caracal population. Recent observations indicate that freshwater sponges have been discovered in Dholpur Lake.

2.4 Geography and Climate:

Due to its harsh, dry climate, Dholpur regularly records some of the highest temperatures in India, with summer temperatures occasionally surpassing 48°C. Landscape features include steep hills and Chambal ravines that provide stone quarries.

3. Challenges related to the environment:

The primary environmental problems in Dholpur, located in the easternmost part of Rajasthan, are industrial pollution, water scarcity, and, more recently, a dramatic drop in air quality. In addition to being an aspirational area, it also has problems with careless land use and poor waste management.

The following are Dholpur's main environmental issues:-

3.1 Extreme contamination and scarcity of water:

Dholpur, Rajasthan, is suffering from severe water scarcity and contamination as a result of excessive groundwater extraction, falling water tables, and pollution from untreated sewage and industrial effluent. People in places like Sarmathura suffer from severe shortages and rely on contaminated sources, which can lead to illnesses. Groundwater contains fluorides and high salinity.

Important Aspects of Dholpur's Water Crisis:-

- **Acute Scarcity and Depletion:** Because groundwater pumping significantly exceeds recharging, it is one of Rajasthan's most water-stressed regions. Chandapura is one of many villages that experience acute shortages in the summer.
- **Problems with Contamination:** Groundwater in many industrial (RIICO) locations is contaminated with high levels of fluoride, nitrate, and salt that are higher than permitted limits, which can be harmful to human health.
- **Sewage and Pollution:** Due to clogged sewer lines and encroached drains, contaminated, stagnant wastewater has infiltrated residential areas in Dholpur city, causing dengue, malaria, and skin conditions.
- **Insufficient Piped Water Supply and Maintenance:** Despite the Chambal River being only 5–6 km away, inadequate piped water supply and maintenance lead to reliance on expensive tanker mafias.
- **Mitigation Efforts:** Successful projects that have improved agricultural prospects in specific targeted areas and replenished groundwater include the construction of masonry check dams on the Bamani River.
- **Seasonal Extremes:** Even though chronic scarcity predominates, the area is susceptible to severe flooding from the Chambal River, which further damages water infrastructure.
- **Sewage management, groundwater conservation, and water supply infrastructure** all need immediate, extensive upgrades.

3.2 Mining-related health risks:

Employees in the local stone-mining industry are exposed to high levels of silica dust, which can have detrimental health effects, despite being a significant source of income.

Mining operations in Dholpur, particularly in the sandstone industry, present major long-term health risks to both workers and nearby residents due to the hazardous dust inhalation and hazardous working conditions.

Major health risks by mining include:

- **Silicosis:** This severe, irreversible, and fatal lung disease can be brought on by breathing in respirable crystalline silica (RCS) dust while drilling, crushing, and cutting sandstone. There were Approx 10,758 confirmed, active, or suspected cases of silicosis in Dholpur as of February 2022. Due in large part to exposure to respirable crystalline silica in sandstone mining, silicosis is a serious problem in the region. According to one research, silicosis was detected in 38.4% of the 138 analyzed X-rays from Dholpur stone mine workers. A major scandal involving the discovery that 106 of 109 suspected cases of silicosis in Dholpur were fraudulent was discovered in early 2022 (January to March). In these cases, employees reported X-rays fraudulently in order to get paid illegally. After being exposed for 12 to 18 years, patients usually start to exhibit symptoms like coughing, chest pain, and dyspnea.
- **Silico-tuberculosis (Silico-TB):** TB is extremely prevalent among mine workers and often co-occurs with silicosis (silico-tuberculosis), resulting in a long and painful death.
- **Physical and Other Health Problems:** Workers experience injuries, joint pain, skin conditions (fungal infections), vision loss, and hearing loss.
- **Occupational Hazards:** Many workers experience heat exhaustion and dehydration as a result of subpar working

conditions and inadequate safety equipment.

- One of the main causes of asthma, chronic bronchitis, and other respiratory disorders is exposure to dust particles (PM10 and PM2.5).

3.3 Rapid pollution from industry:

Particularly in the RIICO industrial districts, Dholpur's fast industrialization has led to significant environmental pollution. Serious health risks and groundwater contamination have been brought to light by recent studies and publications. Pollution levels in the Eastern Rajasthani district are rising at a "critical" rate due to industrial effluents.

Dholpur's RIICO industrial zone is a major source of pollution. Waste from establishments such as oil mills, chemical manufacturing facilities, and dairies contaminates groundwater with hazardous materials and poisonous metals.

A 2020–2021 assessment of the RIICO industrial region found that groundwater is severely contaminated by industrial effluents from dairy farms, chemical companies, and oil mills. In groundwater samples examined between 2019 and 2021, it was discovered that fluoride, nitrate, total dissolved solids (TDS), and heavy metals like iron (Fe), cadmium (Cd), and lead (Pb) had exceeded WHO and BIS permissible levels. The water is not meant for human consumption.

The Rajasthan State Pollution Control Board keeps an eye on the Dholpur district and its industrial sectors. Noise levels at the RIICO Old Industrial Area on Odela Road, Dholpur, are continuously monitored, according to reports from January 2022 and February 2022. The administration is being urged to look into and take action after villagers filed memorandums claiming that a cardboard plant in the Bijauli area is seriously polluting the area.

3.4 Excessive Air pollution:

With AQI readings of about 184 recorded throughout the winter, Dholpur, Rajasthan, frequently experiences "moderate" levels of air pollution due to thick fog, poor visibility, and temperature inversions. Although the city's air quality is sometimes better than large industrial hubs, it deteriorates due to the winter. Improved monitoring and mitigation strategies are therefore necessary.

Dholpur's air quality regularly falls into the "bad" to "extremely poor" classifications, making it one of the most polluted cities in India, according to recent data. The burning of biomass, vehicle pollution, industrial emissions, and cold weather that traps pollutants are the main causes of this.

In the RIICO Industrial Area in Dholpur, Rajasthan, industrial activities contribute to the city's poor air quality, which is further exacerbated by car emissions and biomass burning. Some businesses, notably those at the RIICO Growth Center on Ondela Road, have been the subject of investigations for violating environmental laws, leading to closure orders, according to reports and studies. Recently, A significant air pollution problem is emerging in Dholpur district, as dust clouds billow from the city's broken roads are adding to the woes of asthma and allergy sufferers, posing a serious threat.

3.5 Plastic Waste Management: Up to 70% of students surveyed in Dholpur and other Rajasthani cities use plastic bags excessively, which seriously harms the ecology and the land.

3.6 Land degradation and deforestation: are problems in the area, which includes a portion of the rocky Chambal ravines. Ecological risks to the local biodiversity could also be a significant problem.

4. Summary:

The difficulties and problems that Earth and its natural systems face are collectively referred to as environmental issues. These problems are intricate and interrelated, ranging from pollution and climate change to population growth and energy use.

In Dholpur, environmental problems are caused by mining, industrial influence (RIICO), water scarcity, automobiles, and many other factors. Although natural disturbances like forest fires and floods are tolerable in limited proportions by Earth's ecosystems, human activity can provide conditions that make them occur more frequently or with higher intensity.

Every environmental problem adds to the many interrelated problems that the planet and people are currently facing. Dholpur is one of the most polluted cities in India, with air quality frequently falling into the "bad" to "extremely poor" categories, according to current data. The primary sources of this include the burning of biomass, industrial emissions, vehicular pollution, and cold weather that traps pollutants.

Breathing in respirable crystalline silica (RCS) dust when drilling, crushing, and cutting sandstone can cause this severe, irreversible, and deadly lung illness. As of February 2022, Dholpur had 10,758 confirmed, active, or suspected cases of silicosis. Other water sources on Earth, including the ocean, are also having difficulties. Human health depends on safe drinking water, yet water supplies can get contaminated by pesticides, industrial waste, and agricultural practices. Skin infections, neurological disorders, digestive issues, and other conditions can be brought on by the ensuing bacteria and chemical concentrations in drinking water.

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