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# **ENVIRONMENTAL DEGRADATION DUE TO FIRECRACKERS IN INDIA**

## **Arjun Gopal & Ors. Versus Union of India & Ors (ongoing)**

AUTHORED BY - SOUMYADIP CHAKRABORTY

### **Abstract**

The article discusses the ongoing case of Arjun Gopal & Ors. Versus Union of India & Ors. before the Supreme Court of India, focusing on the environmental concerns arising from the extensive use of fireworks during the Diwali festival. It highlights the environmental degradation caused by fireworks, including elevated levels of trace gases and particulate matter, and the health risks associated with air pollution. Two PILs were filed addressing environmental concerns related to fireworks in Delhi and Udaipur. The article examines various environmental principles such as the Polluter Pays Principle, Precautionary Principle, and Public Trust Doctrine in the context of fireworks usage. It also presents case studies illustrating the Supreme Court's proactive approach in addressing environmental issues. The conclusion emphasizes the need for stringent measures to protect firecrackers and the environment, emphasizing that the festival of Diwali should prioritize light over firecrackers, and underscores the state's duty to safeguard its citizens and nature.

### **Introduction**

In the case of Arjun Gopal & Ors. Versus Union of India & Ors<sup>1</sup>., which is pending before the Supreme Court of India. The parties to case are Arjun Gopal Aarav Bhandari, Zoya Roa Bhasin, Bhagyashree Pancholy.

Diwali, a significant Indian festival, is observed annually in either October or November, spanning approximately 5-6 days and marked by extensive firework presentations throughout the nation. Some research studies have documented elevated levels of trace gases and particulate matter during the Diwali festivities<sup>2</sup>. The act of igniting fireworks during these celebrations

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<sup>1</sup> I.A. No. 44727/2021 in WRIT PETITION(C) NO. 728/2015.

<sup>2</sup> Large inter annual variation in air quality during the annual festival 'Diwali' in an Indian megacity; <https://www.sciencedirect.com/science/article/pii/S1001074215004374?via%3Dihub> .

introduces a substantial quantity of aerosols into the local atmosphere on a temporary basis. The diverse array of pyrotechnics used in fireworks generates a range of auditory, gaseous, and smoky effects. In this case two PIL's were filed, the first writ petition was filed as public interest litigation by the three writ petitioners from Delhi seeking intervention against the environmental degradation due to "parali" (agricultural crop burning), widespread usage of fireworks and dumping of "malba" etc., and also sought other further steps to improve the environmental purity. And the second PIL was filed by a woman in Udaipur against the State of Rajasthan and the administration of Udaipur had failed to ensure compliance with the laws and regulations, given by Supreme Court order dated 23.10.2018 in the case of Arjun Gopal & Ors. Versus Union of India & Ors<sup>3</sup>.

### **Environmental Issue & Facts**

Diwali is an annual Indian festival observed in either October or November, featuring extensive firework presentations throughout India that span a period of 5 days, with the central celebration occurring on the third day. Historical research has noted heightened levels of trace gases and particulate pollutants during the Diwali season in cities like Delhi, Lucknow, Hisar, and Howrah<sup>4</sup>. Fireworks used at the festival are typically made of paper tubes filled with organic, non-metallic, and metallic elements (charcoal, sulphur, silicon, boron, aluminium, magnesium titanium), oxidising and reducing agents (nitrate, chlorates), colouring agents (strontium or lithium, copper, barium, sodium, iron or charcoal), and a binder (dextrin). Large-scale pyrotechnics release a variety of pollutants, such as particulate matter, sulphur and charcoal compounds, trace gases, and traces of metals.<sup>5</sup>

The current Writ Petition (Civil) 728 of 2015 was filed by and on behalf of the three infant Petitioners, who are all citizens of India and residents of Delhi. They are asking for a number of things, including the issuance of a writ of mandamus or any other suitable writ or direction to prohibit the use of fireworks, sparklers, and small explosives in any way during celebrations or otherwise. The slow-moving governmental apparatus for execution of measures to limit dangerous pollution levels in Delhi and the urgent need to take aggressive measures to defend the people's right to clean, healthy, and breathing air under Article 21 of the Indian Constitution were

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<sup>3</sup> <https://indiankanoon.org/doc/63024516/> .

<sup>4</sup> (Barman et al., 2009, CPCB (Central Pollution Control Board), 2010, Ganguly, 2009, Perrino et al., 2011, Ravindra et al., 2003, Thakur et al., 2010, Kulshrestha et al., 2004; Singh et al., 2010). Jiang et al. (2014).

<sup>5</sup> Ravindra et al., 2003, Kulshrestha et al., 2004, Wang et al., 2007, Perrino et al., 2011, <https://doi.org/10.1016/j.jes.2015.08.015>.

both brought to light. In this case, several orders have been made prohibiting the selling of firecrackers and governing the production of fireworks. In the adjacent case, People from all over the country increasingly travel to Rajasthan, and specifically the city of Udaipur, for destination weddings as well as for pre- and post-wedding photo sessions. Hotels all across the city, notably those along the lake and the island hotels, assure the lighting of fireworks on these occasions, which contributes to the city's deteriorating air quality index (AQI). Along with the AQI, the PM 2.5 and PM 10 particle counts are also high. Additionally, it is claimed that individuals also break crackers at pre- and post-wedding parties in addition to during the wedding. According to a news report from the Patrika news agency, approximately 1500 weddings are expected to take place in the first 6 months of 2023 in Udaipur.

In the case of Delhi an order was passed by the Hon'ble Supreme Court where it gives certain directions follows<sup>6</sup>:

- a. The crackers with reduced emission (improved crackers) and green crackers only would be permitted to be manufactured and sold.
- b. As a consequence, production, and sale of crackers, other than crackers with reduced emission is hereby banned.
- c. The manufacture, sale, and use of joined firecrackers (series crackers or laris) is hereby banned.
- d. Barium salts in the fireworks is also hereby banned.
- e. PESO is directed to review the chemical composition of fireworks, particularly reduced Aluminium content, and shall submit its report in respect thereof within a period of two weeks from today I.e.,23.10.2018. For undertaking this exercise, PESO would also associate.
- f. FRDC.

### **Analysis**

Several environmental laws exist in India, including the Environmental Protection Act of 1986, the Water (Prevention and Control of Pollution) Act of 1974, and the Air (Prevention and Control of Pollution) Act of 1981. These laws seek to strike a balance between environmental preservation and economic growth. Using these measures, those who recklessly use fireworks or other pollutants harm the environment can be brought to justice. At its foundation, normative

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<sup>6</sup> <https://indiankanoon.org/doc/63024516/> .

ethics aims to create a standard by which one may judge what is good or wrong. In terms of the environment, this centres around how human behaviour affects the environment and the intrinsic worth of nature. Although Diwali is a religious and cultural holiday, the use of fireworks during the celebration poses health and environmental risks, highlighting the issue of how to find a balance between tradition and environmental sustainability.

The Polluter Pays Principle states that in order to protect the environment and human health, the person who causes the pollution should pay the expenses associated with controlling it. In the case of firecrackers, producers or users may be financially liable for any costs associated with medical treatment or environmental remediation.

The Precautionary Principle states that, even in the absence of a clear causal relationship, the burden of evidence is on those who are proposing an activity that could endanger human health or the environment. This theory might be used to support stronger guidelines for the production and usage of fireworks.

According to the Public Trust Doctrine, certain resources are kept for public use, and the government is obligated to keep them up for that use. One may argue that unrestrained usage of fireworks goes against this principle since clean air is a resource that should be protected.

In the present case, it shows that in addition to violating the citizens of Udaipur's Right to Life, the unrestricted and dangerous cracker-bursting behaviour exposes them to a number of health risks due to the air pollution that results. Stress, high blood pressure, heart disease, and sleep difficulties can all be brought on by exposure to toxic air.

Children, in particular, but all age groups, might experience these health issues. According to statistics from the Rajasthan State Pollution Control Board for the year 2018, which was cited in an article headlined "Air Quality in Udaipur is Becoming Harmful to Children and Elderly People!"<sup>7</sup>, some areas of Udaipur were more polluted than Delhi. According to scientific research, these cracker-emitted particulate matter will always remain inside the lungs when they have entered, leading to a variety of respiratory illnesses. The newborns of the city of Udaipur continue to breathe air that is filthy, putting them at risk for a number of illnesses. It is argued that

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<sup>7</sup> <https://timesofindia.indiatimes.com/city/jaipur/raj-has-highest-death-rate-per-lakh-due-to-air-pollution/articleshowprint/67017397.cms> .

prolonged exposure to contaminated air can seriously jeopardise a child's physical and mental health, including their ability to learn and behave appropriately. Additionally, there is a strong correlation between PM and both the syndrome of sudden newborn death and mortality linked to the respiratory system. According to some evidence, breathing contaminated air during pregnancy might lead to undesirable pregnancy outcomes such as preterm birth, low birth weight, growth retardation, and physical deformities.

Another issue in this case is about green firecrackers, in the order dated 23.10.2018 by Supreme Court, to invent green firecrackers by using barium salts, but Though there were no definite studies as to what extent the barium salts in fireworks and the joined crackers (laris) are contributing towards the air and noise pollution, Barium salts emit poisonous gas causing respiratory problems in long term exposure and may have other health complications in long term exposure, under the precautionary principle of the Environmental Law banned Barium salts and Joined crackers (laris).

### **Case studies**

#### **1. M.C. Mehta v. Union of India, AIR 1997 SC 734 (Taj Trapezium Case)**

The main issue revolved around the conservation and preservation of the Taj Mahal, which was facing damage due to pollutants and the resulting acid rain.

**Judgment:** The Supreme Court recognized the importance of preserving the cultural heritage of India, particularly the Taj Mahal. Taking cognizance of the damage being done by the surrounding industries and the refinery:

The Court ordered various industries operating within the Taj Trapezium Zone (TTZ) to either switch to natural gas or relocate outside the TTZ if they used coal as a fuel.

The Court also issued guidelines for the protection and upkeep of the Taj Mahal and its surrounding environment. The authorities were ordered to set up a monitoring mechanism to ensure the protection of the monument from pollution. Industries not using natural gas as fuel and found to be polluting were asked to be closed down. The Court's judgment was based on the principle of sustainable development and the polluter pays principle. The primary focus was on balancing the rights of the industries and the preservation of a national monument.

2. M.C. Mehta v. Union of India, AIR 2002 SC 1696 (CNG Vehicles Case)

The principal issue was the deteriorating air quality in Delhi due to vehicular pollution, and the need for immediate measures to rectify the situation.

**Judgment:**

The Supreme Court directed the Delhi government to convert all public transport buses to run on CNG (Compressed Natural Gas) instead of diesel by a certain deadline.

The order also impacted auto-rickshaws and taxis, which were directed to switch to CNG. The court also took steps to ensure the timely establishment of sufficient CNG distribution facilities in the city. The directions were given in phases to ensure smooth transition and implementation. The Court's decision was driven by the principle of prioritizing public health over financial implications. These two cases highlight the proactive role played by the Supreme Court of India in addressing environmental issues and the emphasis on sustainable development. M.C. Mehta's efforts through these PILs were instrumental in bringing about significant environmental reforms in the country.

From these Supreme Court judgements, it can be drawn that the people's health is bigger than any festival.

### **Conclusion**

In the whole nation, Rajasthan, with a mortality rate of 112.5 per lakh of people, has the highest death rate per lakh from air pollution. The report mentions that over 90,000 fatalities in 2017 were attributed to air pollution. In addition, the World Health Organization's Urban Air Quality database revealed that Udaipur is one of the five cities in Rajasthan that are included among the world's most polluted cities. In 2020, the AQI on the next day of Deepawali was 67, in 2021 the AQI on the next day of Deepawali increased to 261 and the same was recorded at 195 in 2022. Furthermore, it is claimed that research demonstrates that the cracker-emitted particulate matter always remains inside the lungs after inhalation, leading to a variety of respiratory illnesses. The newborns of the city of Udaipur continue to breathe air that is filthy, putting them at risk for a number of illnesses. It is argued that prolonged exposure to contaminated air can seriously jeopardise a child's physical and mental health, including their ability to learn and behave appropriately. Additionally, there is a strong correlation between PM and both the syndrome of

sudden newborn death and mortality linked to the respiratory system. According to some evidence, breathing contaminated air during pregnancy might lead to undesirable pregnancy outcomes such preterm birth, low birth weight, growth retardation, and physical deformities.

The festival of Diwali is about light not firecrackers, it is the duty of the state to protect its citizens and the nature utmost as the environment does not belong to us, we belong to the environments, which means we don't own it we are just here for a few days and its our duty keep it clean so that the other generations can enjoy it.

