



CAUSE AND POTENTIAL SOLUTIONS OF AIR POLLUTION IN NCR REGION DURING NOVEMBER.

As winter approaches India's National Capital Region (NCR), Delhi braces itself for an annual environmental crisis - a thick cloak of air pollution that envelops the city and poses significant health risks to millions. This predicament, which peaks in November, arises from a convergence of various factors that contribute to the region's poor air quality.

Central to this issue is the practice of stubble burning in the agricultural hubs of Punjab and Haryana. Despite alternative stubble management methods and repeated prohibitions, farmers continue to set fire to paddy residue, resulting in smoke that travels towards Delhi, carried by the northwesterly winds typical of this season. This practice contributes significantly to the particulate matter pollution in the region.

The situation is further exacerbated by Diwali, a festival traditionally celebrated with the bursting of firecrackers. Despite a ban on fireworks to alleviate the city's air quality concerns, compliance remains inconsistent, leading to spikes in pollution levels. During the first week of November, vehicle emissions become another critical contributor, accounting for up to 80% of the NCR's pollution load at times.

Industrial activity is also a significant contributor to the region's air pollution. The combined emissions from various industries add a persistent layer of pollutants to the air, particularly during the cooler months when atmospheric conditions trap these contaminants close to the ground.

Construction and demolition, along with the dust these activities generate, also contribute to the air quality crisis. Despite efforts to reduce these dust emissions, enforcement remains challenging.

The burning of biomass, municipal solid waste, and fires at sanitary landfills are additional sources of air pollution, releasing a harmful mix of chemicals and particulate matter into the air, worsening the already dire conditions.

Furthermore, Delhi's air pollution is not solely a local issue but also a regional one. Areas in the NCR, primarily Noida and Ghaziabad, have been identified as significant sources of PM_{2.5} - fine particulate matter that can penetrate deep into the lungs. This shared airshed implies that air pollution knows no administrative borders and necessitates a coordinated response across the region.

As Delhi grapples with these challenges, the city's air quality often plummets to 'severe' levels, as categorized by the Air Quality Index (AQI). The consequences are far-reaching, affecting not just the respiratory health of its residents but also leading to school closures, restrictions on vehicle use, and a heightened sense of urgency to find sustainable solutions.

In the quest for cleaner air, Delhi faces a multi-faceted challenge that requires concerted efforts from government, industry, and citizens alike. With each November, the hope is that the lessons learned will translate into more effective action and that the capital will eventually breathe easier. But for now, the NCR's November air remains a problem that is as complex as it is pressing.

Addressing the severe air pollution in Delhi, particularly in November, requires multifaceted solutions. The Delhi government has implemented a comprehensive 10-point action plan:

1. **Green War Room:** Monitoring actions against pollution by various government agencies in real-time¹.
2. **Anti-Dust Campaign:** Regular inspections at construction sites to ensure compliance with dust control norms¹.
3. **Green Delhi App:** A digital platform for citizens to report environmental violations, with a high resolution rate for complaints.
4. **Bio-Decomposer:** Using a bio-decomposer solution to manage crop stubble and prevent burning¹.
5. **Water Sprinklers and Anti-Smog Guns:** Deploying water sprinklers and anti-smog guns to reduce dust and smog at construction sites and other areas.
6. **Industry Pollution:** Regular inspections of industrial sites to monitor and ensure the use of authorized fuels only³.
7. **PUC Certificates:** Enforcement of Pollution Under Control (PUC) certificates at filling stations and impounding older, more polluting vehicles¹.
8. **Hotspot Special Monitoring:** Targeted monitoring and intervention at the most polluted areas within Delhi⁴.
9. **Firecracker Ban:** Banning the manufacture, sale, and use of firecrackers to reduce air pollution during Diwali¹.

These measures, spanning from technological interventions to regulatory enforcement and public engagement, aim to reduce the various sources of pollution and improve air quality in the capital.

Innovative solutions to curb air pollution in Delhi, especially from stubble burning, are being spearheaded by entrepreneurs and officials:

1. **Biofuel Circle:** Suhas Baxi and Ashwin Save created a platform to connect farmers with industries to convert agri-waste into clean energy like biofuel, biofertilisers, and biogas, thus avoiding burning².
2. **Biodegradable Packaging:** Arpit Dhupar innovated a process to transform crop stubble into a strong, biodegradable packaging material, offering an alternative use for agricultural waste².
3. **Agricultural Machinery:** Vikram Yadav, an IAS officer, reduced stubble burning by 80% in Ambala, Haryana, by promoting machinery that converts stubble into fertiliser²³.
4. **Clean Cooking Stoves:** Debashree Padhi developed 'Agnis' stoves that use pellets made from agricultural residue, providing a use for stubble and reducing reliance on biomass fuels².

These innovative methods highlight a proactive approach to tackling the critical issue of air pollution in Delhi, focusing on sustainability and repurposing agricultural waste.

SOURCE: 1.- [HTTPS://BLOG.MYGOV.IN/EDITORIAL/G20S-COMMITMENT-TO-ENVIRONMENT-AND-CLIMATE-SUSTAINABILITY-A-ROADMAP-TO-DECISIVE-ACTION/](https://blog.mygov.in/editorial/g20s-commitment-to-environment-and-climate-sustainability-a-roadmap-to-decisive-action/)

SOURCE: 2.- [HTTPS://WWW.THEBETTERINDIA.COM/333727/DELHI-AIR-POLLUTION-AQI-ENTREPRENEURS-INNOVATIONS-PREVENT-STUBBLE-BURNING-FARMERS-SMOG-PUNJAB-HARYANA/](https://www.thebetterindia.com/333727/delhi-air-pollution-aqi-entrepreneurs-innovations-prevent-stubble-burning-farmers-smog-punjab-haryana/)