

Environmental Threats to Delhi

What is the issue?

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- Haze loomed over Delhi and its adjoining areas for over a week.
- The causes and consequences of it demand a more holistic approach in responding to this environmental problem.

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How is the dust pollution scenario in Delhi?

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- **Air quality** - For over five days, a thick layer of dust hung over Delhi.
- It kept the air quality 'severe', the worst category in the pollution index.
- It was odd because it happened in the peak summer.
- Summer is generally considered the off-season for air pollution in Delhi.
- **Pollutant** - The major air pollution threat in Delhi is from the tiny PM2.5 particles.
- However, during the summer, PM10 is found to be the primary pollutant.
- The summer average for PM10 in Delhi was found to be 5 times the national average.
- About 40% of PM10 particles (with diameter less than 10 micron) was dust.
- **Dust** - Windblown dust consists of soil, sand and rock particles.
- Besides, it also contains "re-suspended" dust kicked up by vehicles, digging or construction.

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- The dust hosts toxic materials, including, heavy metals such as lead, chromium and nickel.

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What are the causes?

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- The recent phenomenon was triggered by a dust storm that began over Rajasthan.

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- It was carried by strong westerly wind.

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- The dusty blanket spread itself over Punjab, Haryana, Delhi and western UP.

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- It was kept close to the surface by the anticyclonic flow of winds.

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- Anti-cyclones swirl clockwise in the northern hemisphere.

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- It pushes the local air down and prevents outside air from entering the region.

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What are the changing conditions?

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- The recent dust haze is notably not a one time incident resulting just from desert storm.

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- The phenomenon could be aggravated by

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- i. desertification around Delhi

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ii. the uncontrolled urban development

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iii. climate change

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- Delhi's summer aandhis, like Kolkata's kaalbaisakhis, are localised events.

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- However, the recent development is different in scale and impact.

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- Strangely, all of North India was enveloped.

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- These climatic conditions cannot any longer be seen in isolation.

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Why is desertification a serious issue?

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- **What** - Desertification is the process of relatively dry land becoming increasingly arid.

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- It refers to a condition of reduction of water supplies and lowering of water table in the soil.

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- The factors range from loss of vegetation and overexploitation of soil to climate change.

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- **Scale** - The rate of desertification in India is said to be at 23 hectares of dryland per minute.

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- Nearly 70% of India's area is dryland.

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- A third of this is affected by degradation and a quarter by desertification.

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- Rajasthan and Delhi were among the worst affected.

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- **Impact** - Delhi has historically had a barrier of trees.

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- This exists in the form of the Delhi Ridge and the linked Aravalli range.

- But nearly 12 vegetative gaps in southern Haryana are increasingly prone to desertification.
- The forest cover in Haryana, UP and Rajasthan is also found to be declining.
- **Significance** - Preventing desertification is crucial because failing on this would result in more dust.

How to address this?

- Preparing for more climate related incidents in the future should be a priority.
- Australia and several countries in sub-Saharan Africa and West Asia carry out **dustfall monitoring**.
- Measuring dust deposits in the air alongside ambient air monitoring can be done.
- The data would help in the **mitigation** processes.
- Projects like the African Union-led “Great Green Wall for the Sahara and Sahel Initiative” could be taken up.
- It aims to create a **mosaic of trees** across North Africa, Sahel and the Horn.
- **Vegetation buffers** could be positioned between residential and industrial areas or roads.
- The **urban design** of Delhi should be rethought.
- **Greening** has to be done intelligently; roads need to be designed with tree cover.
- The Aravalli and the Ridge need to be protected.
- This in turn will protect the water table and benefit the city throughout the year.

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Source: Indian Express

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