Environmental Threats to Delhi

What is the issue?

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- Haze loomed over Delhi and its adjoining areas for over a week.
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- 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.
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- It kept the air quality ‘severe’, the worst category in the pollution index.
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- It was odd because it happened in the peak summer.
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- Summer is generally considered the off-season for air pollution in Delhi.
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- **Pollutant** - The major air pollution threat in Delhi is from the tiny PM2.5 particles.
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- However, during the summer, PM10 is found to be the primary pollutant.
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- The summer average for PM10 in Delhi was found to be 5 times the national average.
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- About 40% of PM10 particles (with diameter less than 10 micron) was dust.
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- **Dust** - Windblown dust consists of soil, sand and rock particles.
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- 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.
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- But nearly 12 vegetative gaps in southern Haryana are increasingly prone to desertification.
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- The forest cover in Haryana, UP and Rajasthan is also found to be declining.
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- **Significance** - Preventing desertification is crucial because failing on this would result in more dust.
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How to address this?

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