HCFI Dr KK Aggarwal Research Fund

Round Table Environment Expert Zoom Meeting on "World Air Quality Report 2023"

March 24, 2024 (Sunday, 12 noon-1 pm)

- The World Air Quality Report 2023 was released on 19th March. This report is based on data from 30,000 monitoring stations across 7,812 locations in 134 countries.
- This report provides a global review of air quality data and is based on only PM2.5 levels. In 2023, air pollution remained a global health catastrophe.
- India is the 3rd most polluted country with average PM2.5 levels of 54.5 μg/mm^3) after Bangladesh (79.9 μg/mm^3), and Pakistan (73.7 μg/mm^3).
- According to the report, Central and South Asia were the worst performers globally and home to all four of the most polluted countries: Bangladesh, Pakistan, India, and Tajikistan.
- South Asia is of particular concern with 29 of the 30 most polluted cities in India, Bangladesh, and Pakistan.
- This is a human caused climate crisis caused by burning of fossil fuels which plays a pivotal role in influencing air pollution levels.
- Climate crisis is also altering the weather patterns leading to changes in wind and rainfall.
- Out of the 50 most polluted cities in the world, 42 are in India.
- Begusarai in India was the most polluted city in India and also in the world with PM2.5 of 119 followed by Guwahati at 105.4.
- Delhi was the 3rd most polluted city with PM2.5 of 102.1; it was also the most polluted capital city.
- Greater Noida and Gurugram also figure in the list of top 15 most polluted cities in India.
- PM2.5 and ultrafine particles (UFPs) are dangerous for human health. Despite several measures being taken to control air quality such as Commission for Air Quality Management in NCR and adjoining areas, National Clean Air Program, lot still needs to be done.
- The World Health Organization (WHO) recommended PM2.5 target of <5 is impossible to achieve in India.
- Even during COVID lockdown, the levels achieved were <25-30.
- Only 10 out of the 134 countries have succeeded in meeting this target: Finland, Estonia, Puerto Rico, Australia, New Zealand, Bermuda, Grenada, Iceland, Mauritius, and French Polynesia.
- About 96% of population in India lives in air quality, which is 7 times higher than the WHO recommended level.
- The report illustrates the international nature and inequitable consequences of the continuing air pollution crisis.
- Local, national and international effort is urgently needed to monitor air quality in under-resourced places, manage the causes of transboundary haze, and cut reliance on combustion as an energy source.
- The monitoring stations work on different principles. The low cost sensors used are not reliable and reproducible.
- Achieving the WHO recommended target is difficult in the Indo-Gangetic Plain. The report does not mention that this is a geographically disadvantaged area. Population weighted annual average has been used, but it has to be vetted with the meteorological conditions such as wind direction, mixing height to get a better picture. Countries cannot be compared based on PM2.5.
- The Ministry of Environment and Forests (MoEF) and Central Pollution Control Board (CPCB) must take note of this data and undertake a thorough analysis. It is time to review and rethink.
- Comparing the Indo-Gangetic Plain with European data is an injustice to India. Particulate matters are very high naturally in most parts of India. Hence, the standards used in the report must be questioned.
- The dust collected by the mechanical sweepers is deposited in the central verge of the roads. With vehicle movements, it against gets resuspended.
- More than the vehicular emissions, road dust is the major polluter.
- Efforts should be made to make the central verge green by planting shrubs such as oleander, nerium, and bougainvillea. They are easy to maintain, hardy and climate resilient.

- The resuspended road dust becomes toxic when mixed with vehicular fumes.
- Road maintenance with proper cleaning including of road sides is important.
- Follow the principle of either green it or pave it for any area of the city.
- Roads need to be graded just as buildings are (green rating).
- In Pakistan, major sources are crop burning and temperatures.
- In North India and Delhi, high levels have been attributed to crop burning, vehicular emissions, and other anthropogenic activities.
- In Bangladesh, brick kilns are the major source.
- The major culprits in Begusarai are the brick kilns and windblown dust.
- Few cities in Karnataka are also highly polluted. Sources for the high pollution levels in these cities need to be studied.
- Identification of exact local sources is important. The report is generic without going into specifics and is not a very detailed analysis.
- We must have our own standards. There should be a uniform monitoring protocol across India.
- A balance must be created between development and environment health. Public-private partnership is essential. The solutions are not being implemented. There is a lack of focus toward improvement.
- This data shows that it is an emergency situation and emergency steps need to be taken.
- Transformative multi-sector action across all regions under the National Clean Air Programme is required for a time-bound reduction in pollution levels. System improvement is the need of the hour.

Participants: Dr MP George, Prof Shivaji Sarkar, Dr SD Singh, Mr Pradeep Khandelwal, Mr Sanjeev Kumar, Mr Neeraj Tyagi, Ms Ruchika Sethi Takkar

Moderator: Dr Anil Kumar

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Groundbreaking Study Reveals Dance and Music Therapies' Potential in Parkinson's Treatment

Researchers from the Jaslok Hospital and Research Centre have revealed the results of a pilot study exploring the efficacy of dance and music-related therapies in delaying the progression of Parkinson's disease (PD).

Parkinson's disease, a neurodegenerative disorder affecting over 10 million people globally, with a significant burden in India and Asia, impairs motor functions and quality of life due to the degeneration of dopaminergic neurons. Despite its prevalence, there is currently no cure for PD, with management relying on treatments such as medications, lifestyle adjustments, and surgery.

Prof (Dr) Paresh Doshi, lead investigator, emphasized the emotional impact of PD diagnosis on patients and highlighted the significance of offering alternative avenues for managing the disease. The study revealed that just 1 hour of dance combined with meditation or music and meditation daily could slow the progression of PD, marking a significant advancement in the field.

The study, which included 28 patients, 15 of whom were in therapy and 13 in the control group, showcased promising results. Disease progression was reduced across multiple parameters, including quality of life, balance, depression, anxiety, memory function, and gait. The study also evaluated the impact on caretakers, an aspect often overlooked in previous research.

Dr Doshi stressed the importance of objective evidence in validating therapeutic interventions, noting the study's adherence to rigorous protocols and the support received from various stakeholders. However, he acknowledged challenges in implementation, particularly in ensuring patient compliance and supervision during therapy sessions.

(*Source: https://health.economictimes.indiatimes.com/news/industry/dance-music-therapy-shows-promise-in-slowing-parkinsons-progression/109642689*)