

08 – 11 – 2021

News: Rain batters Chennai, several areas flooded

- **Heavy overnight rain led to flooding in several areas of Chennai** on Sunday. Nungambakkam recorded 21.5 cm of rainfall, the highest recorded in a 24-hour period since 2015.

Urban Flooding

- Flooding in the cities and the towns is a recent phenomenon caused by **increasing incidence of heavy rainfall in a short period of time.**
- The reason for this is **indiscriminate encroachment of waterways and wetlands, inadequate capacity of drains and lack of maintenance of the drainage infrastructure.**
- Apart from it, poor waste management is exacerbating the problem by blocking drains, canals and lakes, while ill-planned road projects are cutting off flood flows.

Reasons

- **Inadequate Drainage Infrastructure:** **Cities like Hyderabad, Mumbai rely on a century-old drainage system, covering only a small part** of the core city.

- In the last 20 years, the **Indian cities have grown manifold** with its original built-up area.
- As the city grew beyond its original limits, **not much was done to address the absence of adequate drainage systems.**
- **Terrain Alteration:** Lasting irreversible damage has been done to the city by **property builders, property owners, and public agencies** by flattening terrain and altering natural drainage routes.
- **Reducing Seepage:** **Indian cities are becoming increasingly impervious to water, not just because of increasing built up but also because of the nature of materials used** (hard, non-porous construction material that makes the soil impervious).
- **Lax Implementation:** Even with provisions of rainwater harvesting, sustainable urban drainage systems, etc, in regulatory mechanisms like the Environmental Impact Assessment (EIA), adoption at user end as well as enforcement agencies remains weak.
- **Encroaching Natural Spaces:** The number of wetlands has reduced to 123 in 2018 from 644 in 1956.
- Green cover is only 9 per cent, which ideally should have been at least 33 per cent.

News: 'Hold emergency meet on air quality'

Air Quality Index

- Air Quality Index is an index for reporting daily air quality.
- Central Pollution Control Board (statutory board established under Water Prevention and Control of Pollution Act, 1974 & Air Prevention and Control of pollution Act, 1981) is the authority to check the Air Quality Index.
- AQI focuses on health effects one might experience within a few hours or days after breathing polluted air.

AQI is calculated for eight major air pollutants:

- Ground – level ozone, PM 10, PM 2.5, Carbon monoxide, Sulfur dioxide, Nitrogen dioxide, Ammonia and Lead.
- Most importantly Carbon Dioxide (CO₂) has been neglected while calculating AQI.
- Recently, CPCB has launched an app named "Sameer" that provides information about Air Quality Index (AQI) levels for more than 100 cities across the country.
- The listed cities are colour-coded, based on their AQI levels. Other than monitoring pollution levels, the app can also be used to file or track complaints

related to garbage dumping, road dust, vehicular emission or other pollution issues in a particular area.

Air Pollution in Delhi

- Air pollution in Delhi-NCR and the Indo Gangetic Plains is a complex phenomenon that is dependent on a variety of factors.

Change in Wind Direction

- October usually marks the withdrawal of monsoons in Northwest India and during this time, the predominant direction of winds is northwesterly.
- The direction of the wind is northwesterly in summers as well, which brings the dust from northern Pakistan and Afghanistan.

Reduced Wind Speed

- High-speed winds are very effective at dispersing pollutants, but winters bring a dip in wind speed overall as compared to in summers which makes the region prone to pollution.
- Also, Delhi lies in a landlocked region which does not have a geographical advantage that eastern, western or southern parts of the country enjoy where the sea breeze disperses the concentrated pollutants.

Stubble Burning

- Stubble burning in Punjab, Rajasthan and Haryana is blamed for causing a thick blanket of smog in Delhi during winters.
- It emits large amounts of toxic pollutants in the atmosphere which contain harmful gases like methane (CH₄), carbon monoxide (CO), volatile organic compounds (VOC) and carcinogenic polycyclic aromatic hydrocarbons.
- Farm fires have been an easy way to get rid of paddy stubble quickly and at low cost for several years.

Vehicular Pollution

- It is one of the biggest causes of dipping air quality in Delhi in winters and around 20% of PM_{2.5} in winters comes from it.

Dust Storms

- Dust storms from Gulf countries enhance the already worse condition. Dry cold weather means dust is prevalent in the entire region, which does not see many rainy days between October and June.
- Dust pollution contributes to around 56% of PM₁₀ and the PM_{2.5} load.

Dip in Temperatures

- **As temperature dips**, the inversion height is lowered and the **concentration of pollutants in the air increases** when this happens.
- Inversion height is the layer beyond which pollutants cannot disperse into the upper layer of the atmosphere.

Firecrackers

- Despite the ban on cracker sales, firecrackers **are a common sight on Diwali**. It may not be the top reason for air pollution, but it definitely contributed to its build-up.

Construction Activities and Open Waste Burning

- **Large-scale construction in Delhi-NCR is another culprit** that is increasing dust and pollution in the air. Delhi also has landfill sites for the dumping of waste and burning of waste in these sites also contributes to air pollution.

Commission for Air Quality Management in National Capital Region

- The Central Commission for Air Quality Management has been constituted Commission for Air Quality Management in the National Capital Region and Adjoining Areas Act, 2021.
- The Bill provides for the constitution of a Commission for better coordination, research, identification, and resolution of problems related to air quality in the National Capital Region (NCR) and adjoining areas.
- Adjoining areas have been defined as areas in the states of Haryana, Punjab, Rajasthan, and Uttar Pradesh adjoining the NCR where any source of pollution may cause adverse impact on air quality in the NCR.
- New central body will replace the over 2-decade old Environmental Pollution (Prevention and Control) Authority (EPCA), which was responsible for curbing pollution.
- The commission files its annual reports in the Parliament. Its orders can be challenged only in NGT and in no other civil courts.

Functions of the Commission

- Coordinating actions taken by concerned state governments (Delhi, Haryana, Punjab, Rajasthan, and Uttar Pradesh).
- Planning and executing plans to prevent and control air pollution in the NCR.
- Providing a framework for identification of air pollutants.
- Conducting research and development through networking with technical institutions.
- Training and creating a special workforce to deal with issues related to air pollution.
- Preparing various action plans such as increasing plantation and addressing stubble burning.
- The Commission can lay down guidelines, and ask state governments to curb pollution and stubble burning.

Powers

- The new body will have the power to issue directions and entertain complaints as it deems necessary for the purpose of protecting and improving the quality of the air in the NCR and adjoining areas.
- It will also lay down parameters for control of air pollution (such as permissible levels of emissions and discharge of pollutants).

- It will also be in charge of identifying violators, monitoring factories and industries and any other polluting unit in the region, and will have the powers to shut down such units.
- It will also have the powers to overrule directives issued by the state governments in the region, that may be in violation of pollution norms.
- Violation of Commission's order to invite jail term upto 5 years, fine upto Rs 1 crore.
- Initially, the Commission for Air Quality Management ordinance was promulgated by the President in October, 2020 but the bill to replace the ordinance was not passed in the budget session of Parliament, as a result of which the commission ceased to operate in March 2020.

Members

- The Commission will be headed by a full time chairperson who has been a Secretary to the Government of India, or a Chief Secretary to a State government.
- The chairperson will hold the post for three years or until s/he attains the age of 70 years. They are eligible for reappointment.
- A Representative of Environment Ministry – not below the rank of Joint secretary.

- Five ex-officio members- chief secretaries of Environment dept. of Delhi, Punjab, Haryana, Uttar Pradesh and Rajasthan.
- Two full time members- who are a serving or former Joint secretaries to central government.
- 3 members from NGOs.
- One member each from NITI Aayog, ISRO and CPCB.
- One member each from Union ministries of Transport, Power, Housing, Petroleum, Agriculture and Commerce.
- One representative from Industry association.
- One full time secretary.
- The commission will also have the power to issue directions to abate pollution crisis, take up matters **suo moto on basis of complaints**, stop power supply or take action against any entity or industry.
- **Offence under the ordinance shall be non-cognizable and be triable under the national green tribunal act in the court of the national green tribunal (NGT).**