Decline in Black Carbon Level in Varanasi

Why in News?

According to a study at **Banaras Hindu University (BHU)**, an annual average decline of 0.47 micrograms per cubic metre in **carbon level** has been observed in **Varanasi and the central Indo-Gangetic plains.**

Key Points

- The study utilized black carbon data generated under the **Aerosol Radiative Forcing over India (ARFI) program** of the **Indian Space Research Organisation (ISRO).**
  - An analysis of a decade-long measurement of **black carbon mass concentration** was conducted at a representative location in the central Indo-Gangetic plain, Varanasi, **from 2009 to 2021.**
  - The **purpose of this analysis** was to understand the **physical, optical, and radiative impact of black carbon in this region.**
- The study recorded an **average annual decrease of 0.47 micrograms per cubic metre in black carbon levels.**
  - Black carbon levels also showed a **consistent seasonal decline,** with a **post-monsoon average decrease of 1.86 micrograms per cubic metre** and a **pre-monsoon average decrease of 0.31 micrograms per cubic metre.**
- The study found that the black carbon in Varanasi and central Indo-Gangetic plains mostly **originates from distant sources, rather than local factors.**
  - These particles are transported over long distances from the lower and upper Indo-Gangetic plains, **Pakistan, the Middle East,** and **southern peninsular regions.**

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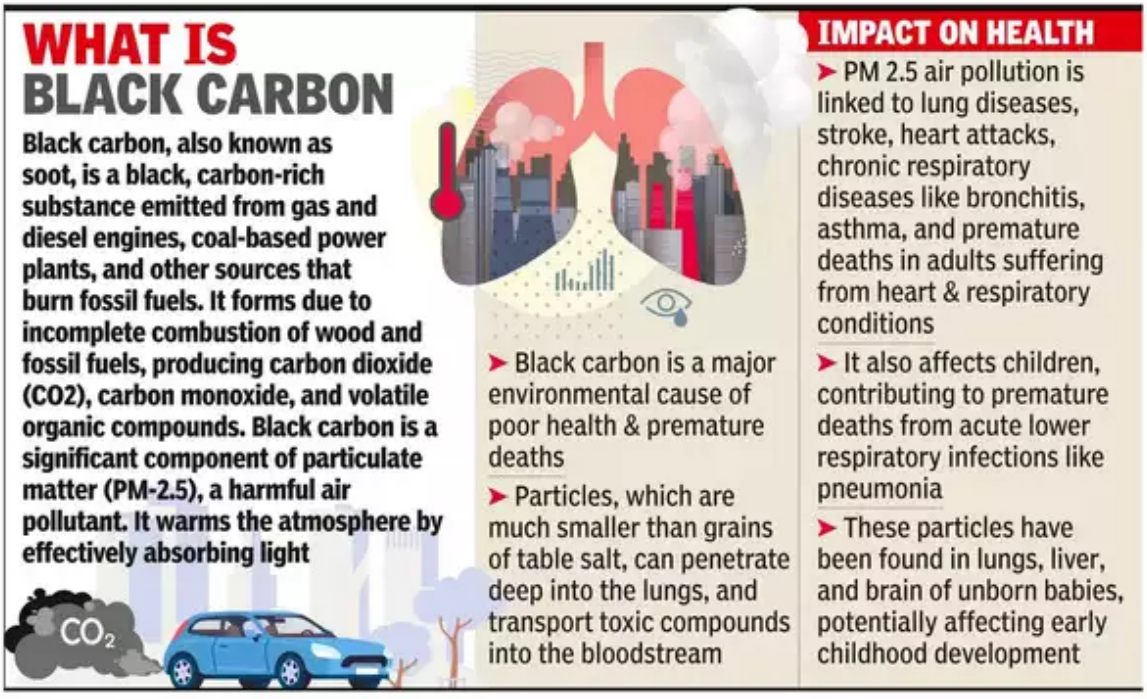

Black Carbon

- Black Carbon (BC) is a **short-lived pollutant that is the second-largest contributor** to warming the planet behind **carbon dioxide (CO2)**.
- Unlike other **greenhouse gas emissions,** BC is quickly washed out and can be eliminated from the atmosphere if emissions stop.
- Unlike historical carbon emissions it is also a localised source with greater local impact.
- Black carbon is a kind of an **aerosol**.