



National Air Quality Resource Framework of India

For Prelims: NARFI, Air Pollution

For Mains: Health, Conservation

Why in News?

[Principal Scientific Adviser](#) to the Government inaugurated the **National Mission on "National Air Quality Resource Framework of India (NARFI)"**.

- NARFI has been developed by the National Institute of Advanced Studies (NIAS), Bengaluru.

What is NARFI?

- **About:**
 - The NARFI is **an information mechanism to help decision-makers in government, municipalities, start-ups and in the private sectors** to address [air pollution](#) issues in different **climatic zones of India**.
 - Research-based audited Information and industry-oriented solutions will be shared in an easy-to-understand format.
 - The short-term basic training modules tailored for different groups such as active ground level staff in government establishments, implementers, media and policymakers, **would be an integral part of the framework**.
- **Objectives:**
 - To help enrich communication and enhance general awareness, leading to self-mitigation.
- **Modules:** The NARFI will evolve around the following five modules:
 - **THEME-1:** Emission Inventory, Air Shed, and Mitigation
 - **THEME-2:** Impacts on Human Health and Agriculture
 - **THEME-3:** Integrated Monitoring, Forecasting and Advisory Framework
 - **THEME-4:** Outreach, Social Dimension, Transition Strategy and Policy
 - **THEME-5:** Solutions, Public-Industry Partnership, Stubble Burning & New Technologies.
- **Significance:**
 - It will enable knowledge creation, developing infrastructure and industrial structures and studying its effects on human health in the country.
 - It will provide an **all-inclusive guide to collecting air quality data**, studying its impact and implementing science-based solutions.

What is Air Pollution?

- **About:**
 - Air pollution is **contamination of the indoor or outdoor environment by any chemical, physical or biological agent** that modifies the natural characteristics of the atmosphere.
 - Household combustion devices, motor vehicles, industrial facilities and forest fires are

common sources of air pollution.

▪ **Pollutants:**

- Pollutants with the strongest evidence for public health concern include **particulate matter (PM), Ozone (O₃), Nitrogen dioxide (NO₂) and Sulphur dioxide (SO₂)**.
- These pollutants are capable of penetrating deep into lung passageways and entering the bloodstream causing **cardiovascular**, cerebrovascular and **respiratory impacts**.

▪ **Sources of Air Pollution:**

- **Burning of Fossil Fuels:** Most of the pollutants are produced by burning fossil fuels or wood, for driving, heating, power plants and industry.
 - Several man-made factors, vehicular emissions, construction dust, garbage burning causes severe pollution.
 - The particles can be made of black carbon, nitrates, sulphates, ammonia or mineral dust.
- **Agriculture & Allied Sources:** Farming is one such source of pollution, with ammonia from livestock manure and fertilisers blowing into cities and forming particles, particularly in spring time when crops are sown and muck is spread.
 - Further, stubble burning is also one of the major sources of air pollution in northern India, especially in winters.
- **Natural Sources:** Apart from it, there are some natural sources of outdoor air pollution such as dust storms.

▪ **Related Initiatives:**

- [Graded Response Action Plan](#)
- [SAFAR \(System of Air Quality and Weather Forecasting and Research\)](#)
- [The Commission for Air Quality Management in National Capital Region \(NCR\) and Adjoining Areas.](#)
- [Bharat Stage \(BS\) VI norms.](#)
- [Dashboard for Monitoring Air Quality.](#)
- [National Clean Air Programme.](#)
- [National Air Quality Index \(AQI\).](#)
- [Air \(Prevention and Control of Pollution\) Act, 1981.](#)
- [Pradhan Mantri Ujjwala Yojana \(PMUY\).](#)

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. Consider the following: (2011)

1. Carbon dioxide
2. Oxides of Nitrogen
3. Oxides of Sulphur

Which of the above is/are the emission/emissions from coal combustion at thermal power plants?

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (d)

Exp:

- Coal based power plants are the major contributor of the atmospheric air pollution and contribute significantly to global warming and adverse health effects which can ultimately lead to diseases like lung cancer.

- Toxic compounds released from the burning of coal include:
 - Oxides of Carbon (CO_x), Carbon Dioxide and Carbon Monoxide; hence, 1 is correct.
 - Oxides of Nitrogen (NO_x), hence, 2 is correct.
 - Oxides of Sulphur (SO_x), hence, 3 is correct.
 - Fly Ash
- Trace elements like Mercury, Cadmium and lead are also emitted which are also hazardous for health.
- Therefore, option (d) is the correct answer.

Source: PIB

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