

National Clean Air Programme (NCAP)

January 25, 2019

Manifest Pedagogy

Air Pollution and measures of mitigation are important part of environmental studies. Policies, programmes and acts related to air pollution are asked as a part of both prelims and mains. List of gases and particulate matter emitted in different industrial activities have been asked in prelims earlier. Air pollution and climate change is the other dimension which needs to be prepared.

In news

National Air Quality Programme

Placing it in syllabus

Conservation, environmental pollution and degradation, environmental impact assessment

Static dimensions

1. Air Pollution

Current dimensions

1. SAFAR
2. National Air Quality Index

Content

What is the Program about?

National Clean Air Programme (NCAP) was launched as a time

bound national level strategy for pan India implementation to tackle the increasing air pollution problem across the country in a comprehensive manner.

The NCAP will be a mid-term, five-year action plan with 2019 as the first year. However, the international experiences and national studies indicate that significant outcome in terms of air pollution initiatives are visible only in the long-term, and hence the programme may be further extended to a longer time horizon after a mid-term review of the outcomes. The approach for NCAP includes collaborative, multi-scale and cross-sectoral coordination between the relevant central ministries, state governments and local bodies. Dovetailing of the existing policies and programmes including the National Action Plan on Climate Change (NAPCC) and other initiatives of Government of India in reference to climate change will be done while execution of NCAP.

There will be use of the Smart Cities program to launch the NCAP in some smart cities falling in the list of the 102 non-attainment cities. The NCAP is envisaged to be dynamic and will continue to evolve based on the additional scientific and technical information as they emerge.

The NCAP will be institutionalized by respective ministries and will be organized through inter-sectoral groups, which include, Ministry of Road Transport and Highway, Ministry of Petroleum and Natural Gas, Ministry of New and Renewable Energy, Ministry of Heavy Industry, Ministry of Housing and Urban Affairs, Ministry of Agriculture, Ministry of Health, NITI Aayog, CPCB, experts from the industry, academia, and civil society. The program will partner with multilateral and bilateral international organizations, and philanthropic foundations and leading technical institutions to achieve its outcomes.

Goal

Goal of NCAP is to meet the prescribed annual average ambient air quality standards at all locations in the country in a stipulated time frame.

Objectives

- To augment and evolve effective and proficient ambient air quality monitoring network across the country for ensuring comprehensive and reliable database
- To have efficient data dissemination and public outreach mechanism for timely measures for prevention and mitigation of air pollution and for inclusive public participation in both planning and implementation of the programmes and policies of government on air pollution
- To have feasible management plan for prevention, control and abatement of air pollution. Particulate matter and its impact on pollution
- Overall objective of the NCAP is comprehensive mitigation actions for prevention, control and abatement of air pollution besides augmenting the air quality monitoring network across the country and strengthening the awareness and capacity building activities

Delhi as a case study

The problem of air pollution is mainly urban centric, studies shows the regional scale pollution, which is more concentrated in entire Indo-Gangetic plains of India and more industrialized states. Incidences of episodic air pollution during winters in **Delhi NCR** in recent years have attracted significant media attention thus bringing the entire issue of air pollution under regular public scrutiny.

In pursuant to **the Hon'ble Supreme Court's order** dated December 02,2016 in the **matter of M. C. Mehta vs. Union of India** regarding air quality in National Capital Region of Delhi, **a Graded Response Action Plan** has been prepared for implementation under different Air Quality Index (AQI)

categories namely, Moderate & Poor, Very Poor, and Severe as per National Air Quality Index. A new category of “Severe+ or Emergency” has been added. Ministry of Environment, Forests & Climate Change has notified for implementation of Graded Response Action Plan through Environment Pollution (Prevention & Control) Authority.

The Government has notified a Graded Response Action Plan for Delhi and NCR, which comprises of the graded measures for each source framed according to the AQI categories. It also takes note of the broad health advisory for each level of AQI that was adopted by the Government of India along with the AQI. The proposal has been framed keeping in view the key pollution sources in Delhi and National Capital Region of Delhi (NCR).

Air pollution – overall causes

1. **Burning of Fossil Fuels:** Sulfur dioxide emitted from the combustion of fossil fuels like coal, petroleum and other factory combustibles is one the major cause of air pollution. Pollution emitting from vehicles including trucks, jeeps, cars, trains, airplanes cause immense amount of pollution.
2. **Agricultural activities (including stubble burning):** Ammonia is a very common by product from agriculture related activities and is one of the most hazardous gases in the atmosphere. Use of insecticides, pesticides and fertilizers in agricultural activities has grown quite a lot.
3. **Exhaust from factories and industries:** Manufacturing industries release large amount of carbon monoxide, hydrocarbons, organic compounds, and chemicals into the air thereby depleting the quality of air.
4. **Mining operations:** Mining is a process wherein minerals below the earth are extracted using large equipments. During the process dust and chemicals are released in the air causing massive air pollution.
5. **Indoor air pollution:** Household cleaning products,

painting supplies emit toxic chemicals in the air and cause air pollution.

6. **Volcano Eruptions:** Sometimes people think of air pollution as entirely man-made. In fact, natural processes release lots of substances into the air that are classed as pollution. Sulfur dioxide is a major modern air pollutant.
7. **Forest Fires:** Forest fires release pollutants into the air in the same way as fireplaces burning wood produce pollution.
8. **Suspended particulate** matter popular by its acronym SPM, is another cause of pollution. Referring to the particles afloat in the air, SPM is usually caused by dust, combustion etc.

Governance framework to curb air pollution

1. The Air (Prevention and Control of Pollution) Act, 1981

- It is an Act to provide for the prevention, control and abatement of air pollution, for the establishment, with a view to carrying out the aforesaid purposes, of Boards, for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected therewith.
- It was enacted in the light of decisions taken at the United Nations Conference on the Human Environment held in Stockholm in June, 1972, in which India participated, to take appropriate steps for the preservation of the natural resources of the earth which, among other things, include the preservation of the quality of air and control of air pollution;
- Whereas it is considered necessary to implement the decisions aforesaid in so far as they relate to the preservation of the quality of air and control of air pollution
- The **Central Pollution Control Board (CPCB)**, statutory organisation, was constituted in September, 1974 under

the Water (Prevention and Control of Pollution) Act, 1974. Further, CPCB was entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.

It serves as a field formation and also provides technical services to the Ministry of Environment and Forests of the provisions of the Environment (Protection) Act, 1986. Principal functions of the CPCB, as spelt out in the Water (Prevention and Control of Pollution) Act, 1974, and the Air (Prevention and Control of Pollution) Act, 1981, (i) to promote cleanliness of streams and wells in different areas of the States by prevention, control and abatement of water pollution, and (ii) to improve the quality of air and to prevent, control or abate air pollution in the country.

National Air Quality index (AQI)

- AQI was launched by the Prime Minister in April, 2015 starting with 14 cities and now extended to many cities.
- Air Quality Index is a tool for effective communication of air quality status to people in terms, which are easy to understand.
- It transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour.
- There are six AQI categories, namely Good, Satisfactory, Moderately polluted, Poor, Very Poor, and Severe. Each of these categories is decided based on ambient concentration values of air pollutants and their likely health impacts (known as health breakpoints). AQ sub-index and health breakpoints are evolved for eight pollutants (PM₁₀, PM_{2.5}, NO₂, SO₂, CO, O₃, NH₃, and Pb) for which shortterm (upto 24-hours) National Ambient Air Quality Standards are prescribed.

SAFAR (System of Air Quality and Weather Forecasting and Research)

- Under the plan scheme “Metropolitan Advisories for Cities for Sports, Tourism (Metropolitan Air Quality and Weather Services), Ministry of Earth Sciences (MoES), Govt. of India, has introduced a major national initiative, “**System of Air Quality and Weather Forecasting and Research**” known as “**SAFAR**” for greater metropolitan cities of India to provide location specific information on air quality in near real time and its forecast 1-3 days in advance for the first time in India.
- It has been combined with the early warning system on weather parameters.
- The SAFAR system is developed by Indian Institute of Tropical Meteorology, Pune, along with ESSO partner institutions namely India Meteorological Department (IMD) and National Centre for Medium Range Weather Forecasting (NCMRWF).
- The implementation of SAFAR is made possible with an active collaboration with local municipal corporations and various local educational institutions and governmental agencies in that Metro city.
- **The ultimate objective of the project is to increase awareness among general public regarding the air quality in their city** well in advance so that appropriate mitigation measures and systematic action can be taken up for betterment of air quality and related health issues. It engineers awareness drive by educating public, prompting self-mitigation and also to help develop mitigation strategies for policy makers.

Overall solutions needed both technological and governance

- Over a period of time, developed countries have found a solution, and even China seems to have figured out a way to reduce its air pollution. Note that there is no Chinese city in the top 15, and just a couple in the top 20. Beijing is not in the top 20 worst in terms of air

pollution.

- It is not that the union government is not conscious of India's worsening air quality. India has voluntarily set ambitious targets for reducing energy intensity and greenhouse gas emissions. The plan includes ramping up clean energy production rapidly – with ambitious targets for solar and wind. There are also plans to reduce or at least reduce the increase in consumption of petrol and diesel, and boost the use of natural gas, which is a far cleaner fuel.
- However, if Indian cities are to cut their own air pollution levels, the change and planning has to happen at the city level and state level, instead of depending on the overall climate control goals and programmes set at the union level.
- The common factors in all the most polluted cities in terms of air quality are traffic emissions, unbridled construction, highly polluting industries and commercial traffic logjams. That, along with progressive reduction in green areas in the cities account for the bulk of the problems. The solutions are not particularly complicated – but it depends on political will and the ability to reduce corruption at the planning in monitoring level. Finally, there are also outdated thermal power plants that need to be closed down and replaced by cleaner sources of energy quickly. Following can be considered as technological solutions for air pollution;
 - **Renewable fuel and clean energy production**
 - **Energy conservation and efficiency**
 - **Eco-friendly transportation**
 - **Green building**