



Breathe: An Action Plan for Combating Air Pollution

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Introduction

NITI Aayog has developed **15 Action Points** to combat air pollution across a range of industries and sectors. It calls for concerted action from all levels of governance, cutting across Ministries and Departments.

Cause For Concern

- **WHO database (2018)** has identified several of India's top cities with some of the highest levels of air pollution in the world.

- **14** of the world's **15** most polluted cities are in India.
- Exposure to the air pollution is leading to diseases such as stroke, heart disease, lung cancer, chronic obstructive pulmonary diseases and respiratory infections, including pneumonia.
- According to **Health of the Nation's States**, household air pollution was responsible for 5% of the total disease burden in India , and outdoor air pollution was responsible for 6% of the burden.
- During the winter months, **crop residue burning (CRB)** accounts for **17% of PM10** and **16% of PM2.5 air pollution**. The problem of crop burning is mainly observed in the major paddy producing states of Punjab, Haryana, Uttar Pradesh and some parts of Maharashtra, where CRB is practiced among the sugarcane farmers.
- As per **State of Forests Report 2017**, India has a forest cover of more than **7 Lakh sq km** area that is 21.54% of the total geographical area of the country. Forest fires are a large source of PM. These fires can have a significant impact on local air quality, visibility and human health.

Action Plans for top 10 Most Polluted Cities in India

1. Drive Mobility through Zero Emission Vehicles (ZEVs)

- Increasing distribution of electric and hybrid vehicles through necessary financial measures and infrastructural support.
- Asking all Central Government offices to replace existing fleets older than 15 years to electric vehicles in the next 3 years i.e. by 2021 April.
- Additional incentives like free registration and ease of getting permits for electric 2 wheelers and 3 wheelers should be immediately notified by Ministry of Road Transport and Highways (MoRTH).
- By boosting Last mile connectivity through clean/e-rickshaws.

2. Enact Strong Measures to Curb Vehicular Emissions

- Implementing a large scale Feebate program from 2020 onwards: A feebate is a policy by which inefficient or polluting vehicles incur a surcharge (fee) while efficient ones receive a rebate (bate).
- Issue guidelines for vehicle ownership and usage: Measures like congestion pricing, escalation of taxes and insurances, higher costs of parking, and implementing restrictions on certain areas and times need to be employed to reduce private vehicle usage.

- Switch to low Sulphur fuel (10 ppm) and implement Bharat VI (similar to Euro VI) standards for engine emissions.
 - BS VI norms to be implemented in Delhi NCR by April 2019
 - BS VII norms to be implemented all over India by April 2020
- By introducing a voluntary fleet modernisation mechanism supported by financial incentives in the form of discounts from the manufacturers and lower excise duties which will be implemented by MoRTH.

3. Reduce Emissions by Optimizing the Power Sector

- Expedite strategic decommissioning of old and inefficient power plants as well as upgradation of efficient thermal power plants.
- Push rooftop solar and distributed generation: Simplification of rules, regulations and leasing policy for operation and power distribution will augment solar power.
- Ensuring high grade low polluting coal to the power plants
- Emphasis on improved power reliability in urban areas to eliminate the operation of diesel power generators.

4. Reform Regulatory Framework for Industrial Air Pollution

- Revise ambient air quality standards of Central Pollution Control Board (CPCB) as well as individual categories of industrial emissions standards and practices.
- Furthermore, formulation of a fuel substitution sub-action plan with the following measures should be explored.
 - Mandated increase in content of ash in coal used for powering boilers and thermal plants.
 - Mandatory use of beneficiated coal promotion of clean coal technologies.
 - Emission standards for Diesel Generator sets.
 - Use of Natural gas instead of coal in small boilers.
 - Nationwide ban on usage of highly polluting fuels such as coke and furnace oil.
- Improving environmental auditing process by implementing measures such as random assignment of auditors to industrial plants, payment from a common pool, monitoring for accuracy and accuracy-based bonus payment system etc.
- Incentivise law enforcement: Incentivising the performing states will be instrumental to speed up corrective action against air pollution. One of the measures being creation of a competitive 'Air Pollution Index' with sub-indices for corresponding sources of pollution can be used to rank the states and create competition.
- This 'name and shame' policy based on the index combined with performance-linked transfers from a common 'Clear Air Fund' (created with the support from the central government under MoEF&CC) can combat air pollution.

5. Implement a National Emissions Trading System

- Introducing a market-based instruments within a regulatory framework based on the concept of 'polluters pay' should be implemented. It would entail capping the individual pollution levels of all industries to certain emission allowance. The currency of trade would be tonnage of pollutants produce such as 'CO₂, SOx and NOX units', which are interconvertible. Similar trading units for particulate matter can also be introduced.
- The firms operating at a deficit, i.e. emitting more than permitted, can purchase through the open trade exchange from the firms that are operating at a surplus.

6. Adopt Cleaner Construction Practices

- Mandating Environmental Risk Assessment for construction projects.
- Revise parameters of Green Building Ratings to include construction process: Higher score on the Green Ratings can then be linked with subsidised financial support.
- Set up smog free towers: It is an innovative technological solution deployed across Europe, which cleans the polluted air in an area around it. These can be installed at the point sources of construction activities.
- Enforce use of ready-made concrete to eliminate the negative externalities of using Site Batch Concrete.

7. Implementing a Business Model to Utilize Crop Residue

- Direct procurement of crop residue collected by large agro-waste management companies must be done by large thermal units like NTPC at the standard market rate.
- Encourage new markets for purchase of crop residues from farmers: Providing subsidies (in term of incentives and tax rebates) to set up new plants of agro-waste management companies in major paddy and sugarcane farming States. State governments can utilize the Green Climate Fund (GCF) for this purpose. In India,

NABARD has been accredited with a Direct Access Entity (DAE) to channelize the GCF for recommended projects related to environmental management.

- Mandate an inter-State trading model for paddy stubble. For instance, paddy straw collected from Punjab can be procured by other States for mushroom cultivation, ethanol production and various other purposes.

8. Implement an Integrated Waste Management Policy

- Enact Extended Producer Responsibility (EPR) to ensure a life cycle approach to products from the manufacturers themselves, holding them responsible for safe disposal of their products. It also encourages producers to use less polluting materials, and is particularly effective in areas like electronics, vehicles, plastic packaging etc.
- Adopt landfill taxes and regulation: Charging extra fees at the gate for landfill entry can shift economic viability from more landfilling to treatment/processing methods. The next step would be setting targets for percentage reduction in landfilled biodegradable waste.
- Incentivise waste to energy systems: Incentives like tax reduction for energy produced through biogas, consumer subsidies for biogas plants, or incentives for upgraded incineration with energy capture, will help make treatment more viable than dumping or burning.
- Decentralize waste processing: Alternatives to landfilling can be effectively implemented, as demonstrated by waste segregation in Bengaluru, pipe and aerobic composting in Alappuzha, recycling business models in Mysuru, municipal segregation models in Panaji, etc.
- Pilot blockchain initiatives in waste management. For example, in return for items recycled, tokens are provided to people that can be exchanged for other services.

9. Tackle City Dust through Urban Local Bodies

Mitigate city dust by:

- Undertaking reforestation and afforestation drive along roadsides and medians.
- Covering landfills with vegetation.
- Planting vertical gardens using pollution absorbing plant varieties on the pillars of over-bridges/flyovers.
- Identifying such over-bridges/flyovers where plantation drive in spaces below can be taken up.
- Constructing footpaths and pavements alongside road by ULBs, PWD and NHAI.
- Relocating brick kilns further away from cities.
- Eliminating manual sweeping of roads and the side areas of roads.
- Prioritizing identification of sites with silt and garbage on the side of the drains and its removal. Silt removed can be used in road embankments.
- Undertake mechanical dust removal: Mechanical dust removal, by, for example, deploying dust absorbing and water spraying vehicles on roads, or mechanized road sweeping machines.

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10. Integrate Efforts to Tackle Forest Fires

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- **Undertake measures to prevent forest fires:** A comprehensive National Policy for Prevention and Control of Forest fires being prepared by MoEFCC should be finalized urgently. Implementation and utilisation of this system should be made mandatory by all state forest departments.
- **Ensure mitigation of forest fires:** Provision of fire breaks and fire lines that act as

barriers in propagation of forest fire should be made mandatory.

11. Encourage Clean Cooking Practices

- Encourage the use of cleaner fuels such as LPG, biogas, solar energy and electricity. Pradhan Mantri Ujjwala Yojana (PMUY) is a significant step in this case.
- Promotion and distribution of fuel efficient chulhas.
- Ensure well ventilated homes: This approach can be integrated with Pradhan Mantri Awas Yojana (PMAY), for building designs that define cooking and living area to maintain healthy air quality inside the house.

12. Drive Public Ownership through Behavioural Change

- Agricultural Pollution: Through existing Krishi Vigyan Kendras (KVKs), specially designed campaigns must be set up to provide farmers with appropriate information tools such as in-situ mulching and on-farm management techniques.
- Indoor Pollution: A culture of clean cooking among households by informing the public about the impact on health needs to be promoted.
- Forest Fires: The mechanism of Joint Forest Management Committees established at village level should be leveraged to sensitize traditional forest dwellers on causes and hazards of forest fires.
- City Dust: Construction companies for curbing generation of construction waste should be sensitized.
- Waste management: Awareness campaigns to accompany positive and negative policy incentivization for people to segregate household waste at source and encourage composting of wet waste and recycling of dry waste.

13. Develop Consistent and Quantified National, Sub-National and Sectoral Plans

A comprehensive Action Plan at the national-level should be complemented with well-designed and well-researched State-level and city-level plans, with strong implementation that dovetail into one another and add up to clearly defined outcome targets with timelines, especially for a targeted level of PM2.5 and PM10. The ambitious National Clean Air Programme has announced a reduction in pollution levels in 100 cities by 35% in the next three years and 50% in the next five years.

14. Improve Air Quality Monitoring Systems

- India has 39 on-ground real-time air pollution monitoring systems spread across 23 cities as compared to China, which has 1,500 of such systems spread in over 900 cities. To enable interventions to combat air pollution, the numbers of such systems needs to be much higher
- Accurately and comprehensively monitor air pollution levels to provide comprehensive data for interventions aimed at improving air quality.

- The usage of drones and UAVs can be explored for capturing air quality.
- Develop air pollution abatement plans based on monitoring data, aided by geo-mapping of all point sources of pollution.