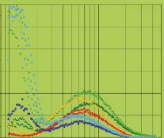


A critical evaluation of failures in current air pollution control policies in India and proposal of innovative future policy perspectives.

A Presentation by

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25th ETH-Conference on Combustion Generated
Nanoparticles

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1974: The Initiation



MAIN FEATURES

- Central Pollution Control Board (**CPCB**) set up.
 - The **Water** (Prevention and Control of Pollution) **Act**.
 - Implementation of the National Air Quality Monitoring Programme (**NAQMP**).
-

SHORTCOMINGS

- CPCB board **members lacked education, training and experience** in environmental science, related engineering and policies.
-

SOLUTIONS

- All board **members must have academic & research qualifications & experience** in environmental science, engineering, related policies & management.



1985: The Mega Shut-Down

Main Features

- Writ Petition (Civil) Number 4677 [WP(C) 4677/1985] filed by MC Mehta in 1985 *changed the face of Delhi.*
 - **Removal of industries** from the city (city-zoning laws).
 - **Relocation of 168 large industries** outside of Delhi within 5 months.
-

SHORTCOMINGS

- Parts of the **case still pending in courts.**
 - **Full implementation not done yet** & ground level situation still grave.
-

SUGGESTIONS FOR IMPROVEMENT

- Such **cases of importance** to **public health** & mass benefit **must be finished quickly** and their results ensured on the ground by a monitoring and implementation committee.

Vehicular policies over the years...



	Year	Vehicular Policy
1	1989	<ul style="list-style-type: none">• Pollution Under Control (PUC) Certificate• Idle emission limits
2	1991-92	<ul style="list-style-type: none">• Mass emission limits for petrol engines (1991) & diesel engines (1992) (both revised in 1996).
3	1995	Compulsory fitting of catalytic converters & use of unleaded petrol in vehicles in metro cities.
4	1995	<ul style="list-style-type: none">• Introduction of Delhi Metro Rail Corporation (DMRC) [1995];• Operational in [2002]
5	1997	Phasing out of very old commercial vehicles (>15 years of registration)
6	1998	Introduction of cold start norms .
7	2000	Reduction of sulfur and benzene content in diesel .
8	2000-2018	Introduction of Bharat Stage (BS) standards (BS I to BS V) (2000-2018) ~ [EURO Standards like Euro I, II, etc.]
9	2025	Auto Fuel Vision and Policy . (Including alcohol blended fuels).

Industrial Policies to curb air Pollution (1982, 2010-2021)



1st Industrial Policy for Delhi [1982]

Shortcomings

- *No provision* for clean or *non-polluting industries*.

Solution

- *Better projection* & future prediction *should* have been *envisioned* to encompass technologies.
-

2nd Industrial Policy for Delhi [2010-2021]

Shortcomings

- *No concrete steps were framed* to discourage industries from polluting.

Solution

- The 2nd policy has also failed by and large.
- Better governance and *policy implementation on ground has to be done*.

Environment Pollution (Prevention & Control) Authority (EPCA) 1998



Main Features

- EPCA was a *Supreme Court mandated body*.
- One of its *key Tasks* was *tackling air pollution* in the National Capital Region i.e. *NCR* (Delhi & surrounding areas).
- Responsible for *enforcing Graded Response Action Plan (GRAP)* in NCR as per the pollution levels.

Shortcomings

- The *EPCA failed dismally* in fulfilling its objectives.
- Most recently, it *failed to curb stubble burning* in NCR.
- *EPCA* has been *dissolved*.
- A new body *CAQM* (Commission on Air Quality Management) put in its place.

Solutions

- CAQM must *learn lessons* from *failures of EPCA*.
- CAQM must be *accorded power* to use police and other forces for ground level implementation of air pollution control measures.
- It must be autonomous in actual sense with *least bureaucratic interferences*.

The National Green Tribunal (NGT) [2010]



MAIN FEATURES

- Specialized body for effective and expeditious disposal of cases relating to environmental protection & conservation of forests and other natural resources.
- NGT is mandated to make disposal of applications or appeals finally within 6 months of filing of the same.
- It helps reduce the burden of litigation in the higher courts on environmental matters. NGT is less formal, less expensive, and a faster way of resolving environment related disputes.

SHORTCOMINGS

- Even after its formation, the *air pollution levels* have *only kept increasing*.
 - Decisions of NGT have also been criticised and challenged due to their *repercussions on economic growth and development*.
 - *Absence of a formula-based mechanism in determining the compensation*.
 - *Lack of human & financial resources ~ High pendency of cases*.
 - *Limited number of regional benches & judges*.
-

SOLUTIONS

- Need for *more autonomy & widening of NGT's scope*.
- *Focus less on governance issues & more on adjudication*.
- *More judicial benches & filling up of pending vacancies* quickly.
- Two important acts: *Wildlife (Protection) Act, 1972* & *Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006* have been kept out of NGT's jurisdiction, restricting jurisdiction area of NGT & hampering cases of forest rights. The area of jurisdiction **must be expanded to encompass them**.



ODD-EVEN RULE IN DELHI

FEATURES

- Implemented in 2016, 2017, 2019.
- Policy mandates private vehicles to ply based on the last digit on their number plates, i.e. vehicles with even numbered last digit (0, 2, 4, 6, 8) on number plate would ply on even days of the month. Same for odd numbers.
- Rs. 4000 (~ US \$53) Fine for defaulters.
- Exemption for: 2 wheelers, commercial vehicles like buses and cabs, women driving alone, cars having all women as occupants, women accompanied by children aged less than 12 years etc.

SHORTCOMINGS

- Majority of families in Delhi have two or more cars and they use the scheme to their advantage.
- No focus on engines or fuel type was done.
- The fines are not sufficient and their utilization remains non transparent.
- Too many exceptions.

SOLUTIONS

- Only one car per family must be allowed. Its tracking and digital entry must be maintained.
- Focus on engines or fuel type was done.
- Fines need to be increased and transparency in its utilization exercised to dissuade people from flaunting the laws.
- No exception based on sex, age, profession must be made. Only exception that may be allowed is passage for emergency services like ambulances, fire brigade, police work, etc.

Pradhan Mantri Ujjwala Yojana (PMUY) [2016]

Pradhan Mantri Ujjwala Yojana



Main Features

- Envisages *smoke free Rural India*.
- *Benefitted 50 million rural families* especially women living below poverty line (*BPL*).
- Provides *concessional 50 million LPG connections* with the financial support of Rs 1600 for each LPG.
- Aims to *replace wood & cow dung* as cooking fuel.
- The scheme is intended to *increase LPG use, reduce health disorders, air pollution and deforestation*.

SHORTCOMINGS

- Scheme *only includes BPL families*.
- *Air pollution by non-BPL families* due to traditional cook stoves continues.
- Connections were issued on the name of women beneficiaries and *households with only males were affected*.
- The scheme is *silent on* development of supply chains and *last mile connectivity*.
- It increases the *fiscal burden on India* which affect fiscal consolidation.
- Beneficiaries can divert the free LPG cylinders for commercial use, *illicit sale & corruption*.
- It can lead to *shortage of LPG cylinders thus pushing imports*.
- Households though opt for subsidized connections but *do not spend on refilling their cylinders* as it is costly as compared to biomass thus it would be difficult to sustain it.



SOLUTIONS

- Capacity revamping.
- Encouraging **Renewable energy** resources.
- In **case** there is **no women in the family**, the **benefit** must be extended to the **male head of the family**.
- More **scheme awareness** needs to be spread in rural areas.
- **Subsidy on refilling** of cylinder.
- **Last mile connectivity** must be ensured to benefit the beneficiary.
- It also recommended to **scrutinize of the entire LPG database to identify and restrict anomalies and duplicities**.
- Families using traditional cookstoves but **marginally above BPL must be included**.
- **Financially well families using traditional cookstoves** must be **heftily penalized**.

Graded Response Action Plan (GRAP) [2017]



MAIN FEATURES

- i. **Ban on** use of diesel generator (*DG*) sets.
- ii. **Increased parking fees.**
- iii. **Increased frequency of public transport** (bus and Delhi Metro Rail services.)

SHORTCOMINGS

- i. **Ban on use of DG sets** was implemented only in Delhi but **not in other NCR towns** whose air drifts to Delhi all the time.
- ii. **Parking fees** could **not be increased** owing to **non-consensus** on base charges.
- iii. **Increase** in frequency of **public transport** was **in-sufficient.**

SOLUTIONS

- Such bans must be done at the same time all over NCR.
- Parking fees must be increased to discourage people from using vehicles unnecessarily.
- Increase in frequency of bus and metro services must be done along with decreased fares to encourage public transportation usage.



For Severe AQI

MAIN FEATURES

- (a) Blanket ban on hot-mix plants
 - (b) Ban on coal-based power plants
-

SHORTCOMINGS

- (a) Blanket ban on hot-mix plants came into effect late on November 2, 2019.
 - (b) Ban on coal-based power plants not implemented in other towns of NCR — Delhi's Badarpur power plant alone was shut towards end of October 2019.
-

SOLUTIONS

- Such bans must be quick and complete.
- Apart from bans practices learnt from Covid-19 experience like minimal use of personalized transport, restrictive travel unless absolutely essential and work from home must be encouraged.

Commission on Air Quality Management (CAQM) [2020]



MAIN FEATURES

- A Decision Support System (*DSS*) having a web, Geographical Information System (*GIS*) and *multi-model based operational & planning decision support tool* under CAQM is being built and is expected to help in capturing the static and dynamic features of the emissions from various sources.
- *CAQM* will be *chaired* by a government official of the *rank of Secretary or Chief Secretary*.
- It will have *exclusive jurisdiction over Delhi and NCR, including areas in Haryana, Punjab, Uttar Pradesh and Rajasthan*, in matters of air pollution, and will be working along with CPCB and *Indian Space Research Organization (ISRO)* apart from the respective state governments.
- The Commission will have the power to impose a fine of up to Rs 1 crore and imprisonment of up to 5 years.

SHORTCOMINGS

- The Covid-19 Pandemic has severely affected the CAQM which on paper looks very promising.

SOLUTIONS

- The CAQM blueprint must be implemented on ground in both letter and spirit.

Key initiatives in Union Budget 2021-22



15th Finance Commission (FC) grants (2021-2026)

- **Rs 2,217 Crore allocated** for 42 urban agglomerations with million-plus populations to provide performance-based grants to urban local bodies (ULBs).

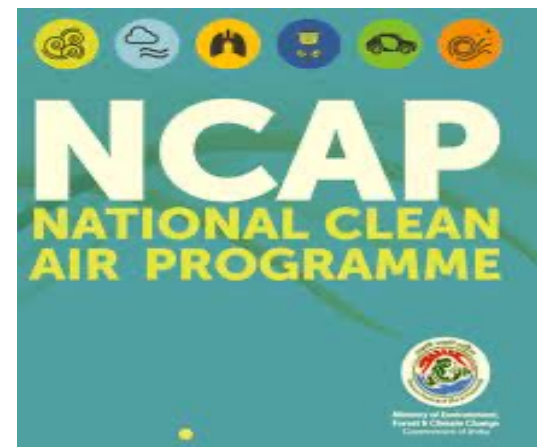
SHORTCOMINGS

- **No clarity on usage of allocated Rs 2,217 crores** funds to resolve the pollution crisis. In the previous budget, Rs 4,400 crores allotted for clean air but no information available on the public platform on how this fund was utilised.
- The **total grant amount has been reduced by nearly half** compared to previous year's budget, without a clear justification.
- There is **restriction on local governments** for usage of money.

SOLUTIONS

- **The funds need to increase and more transparency on its utilization exercised.**
- **Yearly reports on how the funds were used must be made public.**

National Clean Air Programme (NCAP)



MAIN FEATURES

- **Rs 470 crore allocated** to NCAP for 2020-21.
- Previous year it was Rs 460 crore.
- **Only urban local bodies (ULBs) can utilise them**, and they are meant only for million-plus population cities.

SHORTCOMINGS

- The **funds** are **insufficient**.
- The Environment Ministry projected a need for Rs 660 Crore under this line item for 2020-21.

SOLUTIONS

- For a country like India and a severe polluted city like Delhi the funds allocated are very low.
- **More funds and its transparent utilization must be ensured.**

Fine on Stubble burning (2020)



MAIN FEATURES

- *Stubble burning is illegal.*
- Non-compliance ~ **jail term** up to **five years** or with **fine up to Rs one crore or both.**
- The areas where the ordinance shall be in force include Punjab, Haryana, Rajasthan and Uttar Pradesh apart from the Delhi-NCR region

SHORTCOMINGS

- Most **farmers complaint** of **lack of alternative techniques to dispose the stubble** and **less time available** before the next crop starts.

SOLUTIONS

- **Stubble** (Especially rice) can be used for:
 - making paper**, card board;
 - converting it into **briquettes** and blending it with coal as National Thermal Power Corporation (NTPC) has successfully done; and
 - producing ethanol and bio-fuels** because they have significant amount of cellulose.
- **A policy** must be evolved to **shift** a good part of the **paddy cultivation from the north-western States to the north-eastern States** where **there is enough water** and water scarcity problem will not arise if proper crop pattern is adopted. In this way, **while** we would be **solving** the **rice stubble burning problem in the three northern States** responsible for heavy air pollution, we would be conserving their groundwater too.

Installation of smog towers (Giant Air Purifiers) [2020]



MAIN FEATURES

A few Smog towers (giant air purifiers) were installed by some politicians and charity organizations in some crowded places in Delhi.

SHORTCOMINGS

Huge cost associated with a limited impact zone of only 700 meters to 1 km in the direction of the wind and are not recommended by experts.

SOLUTIONS

Smog towers (giant air purifiers) are not a feasible or long-term solution and the money invested in them can be utilized for other better technologies and research.

CONCLUSIONS

- India needs a ***comprehensive policy*** for tackling air pollution as it is geographically a very diverse country.
- The ***seasonal variations*** and ***local cultures*** must be taken into account while framing any such policy.
- All ***stakeholders*** must be ***consulted & efforts for consensus done.***
- If needed strict policies must be drafted and its ***implementation by all means must be ensured.***

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Thank
you

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