

CHAPTER 4

Air Pollution

Air pollution occurs when the concentration of 'foreign' substances in the atmosphere cause harmful effects to living organisms. Substances that are generally recognized as air pollutants include Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM), Sulphur Dioxide (SO₂), Nitric Oxide (NO₂), Carbon Monoxide and Dioxide, Methane and Ozone depleting substances such as CFC. Overpopulation, especially the high rate of urbanization, and excessive and inefficient energy consumption including vehicular emission are among the root causes for air pollution in Lucknow City.

Air pollution affects human health adversely. Increase in the incidence of respiratory illness including asthma, bronchitis, emphysema and possibly cancer of the respiratory organs can be attributed to high air pollution.

4.1 Regulatory Framework, Policies and Strategies

The Air (Prevention and Control of Pollution) Act, 1981 (Air Act) is an important legislative measure aimed at prevention and control of air pollution in India. UPPCB is the designated authority for enforcement of the provisions of the Air Act by making a comprehensive programme for prevention and control of air pollution in the State and to advise the State Government on any matter concerning thereof.

4.2 Operational Management

For prevention and control of air pollution in City, UPPCB was required to prepare a comprehensive programme and secure its execution by effective co-ordination with the concerned Government departments and agencies. The UPPCB was also required to collect and disseminate information relating to air pollution and inspect air pollution control areas at such intervals as it deemed necessary.

Scrutiny of the records of UPPCB (July 2010), however, revealed that it had not prepared a comprehensive plan for improving air quality in City. However, UPPCB merely submitted (July 1999) suggestions regarding the long term and short term measures proposed to minimise the air and noise pollution to the Allahabad High Court in compliance with its order (May 1999).

4.2.1 Air Quality below the National Ambient Air Quality Standard

NAAQS was prescribed by CPCB. The air is polluted when the levels of SPM and RSPM exceed the prescribed standard norms. UPPCB monitors air quality at six locations (including one online monitoring station which was non-functional since May 2010) in the Lucknow City under the National Ambient Air Monitoring Programme. At these locations, monitoring was done for SPM, RSPM, SO₂, and NO₂. Scrutiny of the air quality testing reports (2006-2010) of UPPCB revealed that the quality of air was much below the prescribed safe standards as given in *Appendix-VI*.

The levels of SPM and RSPM continued to be higher as compared to the prescribed safe norms since 2006 to 2010.

4.2.2 Increase in the concentration of SPM and RSPM due to constant increase in the number of vehicles

In recent years, there has been a rapid increase in the number of vehicles in urban areas which has been the major contributor to increase air pollution.

Scrutiny of records (July 2010) of RTO revealed that there was an overall increase of 40 *per cent* in various categories of vehicles during 2009-10 as compared to 2005-06 as below:

Table 4.1: Registered Vehicles with RTO, Lucknow during 2005-06 and 2009-10

Sl. No.	Type of vehicle	No. of registered vehicles as on 31 March		Percentage increase in the number of vehicles
		2006	2010	
1	Commercial vehicles	28174	55381	97
2	Three wheelers and Auto Rickshaw	12502	19632	57
3	Two wheelers	660093	893977	35
4	Four wheelers	123234	181449	47
Total		824003	1150439	40

(Source: RTO, Lucknow)

UPPCB accepted (July 2010) that major sources of air pollution in the Lucknow city were vehicular emissions, industries, construction activities and DG sets, *etc.*

On being pointed out, the Government stated (August 2011) that all the (ordered) equipment of continuous Automatic Ambient Air Quality Monitoring Station for

Lucknow City had been received and the installation work of the station was under progress.

4.3 Ineffective role of the Transport Department

The role of the Transport Department is vital as vehicular emission was the major contributor of air pollution. Under the Motor Vehicle Act, 1989 Transport Department was responsible for checking vehicular pollution, taking punitive action against the violators and streamlining the transport system.

4.3.1 Incomplete conversion of diesel vehicles into CNG vehicles

The Transport Commissioner circulated (June 2006) a policy decision taken by the State Transport Authority for metro cities, including Lucknow City, to reduce pollution and streamline the transport system. As per the policy, only CNG vehicles were to ply for public transport and all diesel and petrol driven tempos, taxis and auto rickshaws were to be converted into CNG by 30 September 2006. Further, Environment Pollution Control Authority (EPCA), under the Chairmanship of Dr. Bhure Lal, on the direction (November 2001) of the Hon'ble Supreme Court, also prepared (2006) a Working Plan for City which, *inter alia*, provided that all public vehicles should be CNG driven.

The State Government intimated (July 2011) that 748 vehicles (254 UPSRTC buses, 26 private city buses, 388 school buses and 80 Public Service Vehicles) were plying on CNG whereas 35 *per cent i.e.* 405 vehicles (11 buses, 32 Public Service Vehicles and 362 school buses) were yet to be converted into CNG. The reason for non-conversion of vehicles was attributed (April 2011) to non-establishment of three¹¹ more CNG filling stations due to insufficient supply of CNG to City.

Thus, the Transport Department failed to achieve the target set for only CNG driven public vehicles by the Transport Commissioner even after a lapse of four years.

4.3.2 Non-upgradation of pollution checking equipments

In Lucknow City, the Transport Department recognised 82 private centres for checking the level of vehicular emission. Out of this, 59 centres had upgraded their software but did not install the requisite web-camera for ensuring the physical presence of vehicles reaching there for want of Pollution Under Control (PUC) certificate. 23 centres

¹¹ Requirement: 09 CNG filling stations, Available: 06 as of April 2011.

(28 per cent) had not upgraded their software; however, these centres issued PUC certificates as pointed out (December 2009) in an inspection done by ARTO (Technical). The details of vehicles checked by private centres were as below:

Table 4.2: Details of vehicles checked by private centres

Year	Number of vehicles checked		Number of PUC certificates issued		Number of vehicles not conforming to the standards	
	Diesel	Petrol	Diesel	Petrol	Diesel	Petrol
2005-06	26655	149641	24700	140611	1955	9030
2006-07	29250	170941	27006	161701	2244	9240
2007-08	30762	179863	28108	169993	2654	9870
2008-09	31193	187085	28393	177320	2800	9765
2009-10	35450	193185	22525	181835	2925	11350
Total	153310	880715	130732	831460	12578	49255

(Source: RTO, Lucknow)

On being pointed out, the Government replied (September 2011) that out of 88 private centres, 46 centres were upgraded with modified software and PUC certificates were issued only by upgraded centres. The upgradation of remaining centres is under process. Reply of the Government was only partially correct as the documents (Action Plan for City as in October 2010) enclosed with the reply disclosed that web-cameras were yet to be fitted in these upgraded centres to check physical presence of vehicles. Besides, the remaining 42 centres were yet to be upgraded.

4.3.3 Inadequate manpower in traffic police

To regulate traffic flow, remove encroachments and nab the violators of vehicular emission norms causing air pollution, traffic police requires sufficient number of manpower. Scrutiny of records (July 2010) revealed that there was acute shortage (53 per cent) of manpower in the traffic police wing. The position of person-in-position against the sanctioned strength as in July 2010 was as below:

Table 4.3: Position of staff

Post	Sanctioned Strength	Person-in-position	Shortage (percentage)
Traffic Inspector	04	03	01 (25)
Traffic Sub-Inspector	30	29	01 (3)
Head Constable	100	83	17 (17)
Constable	600	330	270 (45)
Total	734	445	289 (53)

(Source: Traffic Police, Lucknow)

The Government, instead of assessing the required (as per recommendation of the Chaube Committee in 2000) manpower on the basis of increasing number of vehicles and the expansion of city area, reduced the sanctioned strength of 736 in 2001 to 734 in 2010. The number of vehicles increased 275 *per cent*, from 4.19 lakh in 2001 to 11.50 lakh in 2010. Even the person-in-position against the sanctioned strength was below 45 *per cent* in case of constables, the key personnel for the traffic management.

The Government accepted (August 2011) the shortage of manpower and intimated that the vacant posts of traffic police had been filled after July 2010 and only 101 posts were vacant *vis-a-vis* the sanctioned strength. However, the Government was silent on the assessment of requirement according to recommendations of the Chaube Committee (2000).

4.4 Recommendations

- *Assessment, recruitment and deployment of manpower for policing traffic on actual requirement needs to be undertaken urgently; and*
- *UPPCB should establish more and upgraded air quality monitoring stations in new areas of the City.*