

Chapter-9

Critically polluted areas in the State

Introduction

CPCB in collaboration with the Indian Institute of Technology, Delhi had developed (2009-10) Comprehensive Environmental Pollution Index (CEPI) based on an algorithm of source, pathway, and receptor. CEPI is a function of the Environment Pollution Index (EPI) based on the quality of air, surface water, ground water and soil. An industrial cluster is defined as a Critically Polluted Area (CPA) if its CEPI score is 70 and above and a Severely Polluted Area (SPA) if its CEPI score is between 60 and 70.

9.1 Critically polluted areas of Gujarat

Based on the CEPI score of 2009-10, the Ministry had declared (January 2010) (i) Vapi (ii) Ankleshwar (iii) Vatva (iv) Ahmedabad (Odhav and Naroda) (v) Bhavnagar and (vi) Junagadh as CPAs and imposed (January 2010) moratorium on approval of projects up to August 2010 in these areas for environment clearance. Based on the Remedial Action Plans (RAP) proposed by GPCB, approved by CPCB (September 2010) for the abatement of pollution in these CPAs, the Ministry lifted the moratorium from Vapi (October 2010), Bhavnagar (February 2011), Junagadh (March 2011) and Ahmedabad (September 2013). The moratorium was re-imposed in Vapi in September 2013 due to poor CEPI scores.

CPCB on the representation of SPCBs, State Governments, Industrial Associations, and other stakeholders revised (April 2016) the calculation method of CEPI score by eliminating the subjective factors and retaining the factors that can be monitored. The Ministry finally lifted the moratorium on Vapi, Ankleshwar and Vatva in November 2016 based on the re-assessed CEPI score, subject to strict compliance of the following specific conditions by the GPCB:

- (i) Any new project/ activity, expansion or modernization of existing project or activity, or any change in product mix is in line with the overall approved action plan of the CPA.
- (ii) Quarterly review of the implementation of the action plan of CPA by the Chairman, GPCB, and submission of review report to CPCB. It is to be ensured that there is no slippage either in terms of time frame or the activities to be completed relating to the action plan.
- (iii) Third-party monitoring of CPA for computing CEPI. Every year the monitoring will be done during December-February followed by the submission of the report to CPCB by April.
- (iv) The Expert Advisory Committee (EAC)/ State Expert Advisory Committee (SEAC) will take extra precautions during appraisal of projects proposed

to be located in the CPAs and prescribe requisite stringent safeguard measures so that the environmental quality does not deteriorate further in the CPA.

CEPI score of 10 most polluted areas of Gujarat based on environment quality monitored during 2009-2018 by the CPCB in industrial areas of India, is shown in **Table 14** below:

Table 14: - CEPI score of PAs

| Sl. No. | Name of PA | 2009 | 2011 | 2013 | 2016 | 2018 |
|---------|----------------------------|-------|-------|-------|------|-------|
| 1 | Vapi | 88.09 | 90.75 | 85.31 | 68.2 | 79.95 |
| 2 | Ankleshwar | 88.50 | 85.75 | 80.93 | 68.0 | 80.21 |
| 3 | Vatva (Vatva-Narol) | 74.77 | 87.46 | 83.44 | 54.2 | 70.94 |
| 4 | Ahmedabad (Naroda & Odhav) | 75.28 | 78.09 | 69.54 | * | 57.11 |
| 5 | Bhavnagar | 70.99 | 69.73 | 62.79 | * | 61.94 |
| 6 | Junagadh | 70.82 | 67.85 | 52.75 | * | 51.64 |
| 7 | Vadodara | 66.91 | * | * | * | 89.09 |
| 8 | Rajkot | 66.76 | * | * | * | 70.62 |
| 9 | Morbi | * | * | * | * | 54.24 |
| 10 | Surat | * | * | * | * | 76.43 |

(Source: NGT order dated 10 July 2019), * Data not available
Low CEPI score below 70 is desirable.

From the above table it can be inferred that in 2018, reduction in CEPI scores of Vapi, Ankleshwar, Vatva (Vatva-Narol), Ahmedabad (Naroda and Odhav), Bhavnagar, and Junagadh ranged between 3.83 to 19.18 points in comparison to 2009. However, CEPI score of Vadodara, (now highest in the State) and Rajkot increased by 22.18 and 3.86 points respectively in comparison to 2009 and these cities became CPA from SPA.

Audit examined the compliance of the specific conditions of the moratorium and observed the following:

9.2 Non-assessment of impact of air pollution on health in critically polluted areas

CPCB directed (March 2011) all SPCBs to conduct health impact assessment in surrounding areas of industrial clusters once in four to five years with the assistance of recognized health institutions like National Institute of Occupational Health, Public Health Foundations, Indian Council of Medical Research and local Government and Medical Colleges. Further, CPCB collected the data on airborne diseases like Asthma, Bronchitis, Cancer, Acute respiratory infections of three to five major hospitals of each CPA from 2012-13 to 2016-17 to evaluate the impact on health due to pollution and calculation of CEPI index.

Audit observed that during 2012-13 to 2016-17, hospitals located in industrial areas of Ahmedabad (three), Vapi-Valsad (eight) and Ankleshwar (four) had reported 80,443 patients with Asthma, Bronchitis and Acute Respiratory Infections as mentioned in **Table 15** below:

Table 15: - Year-wise number of patients

| Year | Number of patients | Increases vis-à-vis previous year | |
|--------------|--------------------|-----------------------------------|------------|
| | | Number | Percentage |
| 2012-13 | 14,001 | - | - |
| 2013-14 | 15,052 | 1,051 | 7.51 |
| 2014-15 | 17,075 | 2,023 | 13.44 |
| 2015-16 | 16,766 | -309 | -1.81 |
| 2016-17 | 17,549 | 783 | 4.67 |
| Total | 80,443 | | |

(Source: Information furnished by GPCB)

An increasing number of patients depicts the severity of the impact of air pollution on health. This fact is also corroborated by the Lancet Report 2019. Industries Association carried out health impact assessments in CPA with experts. However, GPCB has not undertaken any such assessment.

Government stated (January 2022) that health impact assessment in CPA were carried out by Industries Association of respective CPA through third party credible expert industry of the subject.

The Government reply is not convincing as Audit is of the view that such studies were to be conducted by GPCB through recognized health institutions once in four to five years instead of by Industries Association.

GPCB may evolve a system to collect health data on the lines of CPCB and provide such information to the State Health Department for designing necessary interventions to prevent and mitigate the impact of air pollution on the health of the peoples living in the CPAs.

9.3 Non-installation of Continuous Ambient Air Quality Monitoring Stations in Critically Polluted Areas

For monitoring of the AAQ continuously in the CPAs, CPCB directed (April 2016) GPCB to install at least two Continuous Ambient Air Quality Monitoring Stations (CAAQMS) within a year in each CPA. The GPCB was required to coordinate with industrial associations or any other appropriate agency for the installation of CAAQMS at strategic locations in the CPAs on the “Polluter Pays Principle”. One CAAQMS was supposed to be in windward (upwind direction) and the other one at leeward (downwind direction). The data so acquired was to be published on the website of GPCB. These directions also formed part of the Remedial Action Plan for the CPA. The CPCB also directed GPCB to install CAAQMS in all million-plus cities of the State *i.e.*, Ahmedabad, Surat, Vadodara, and Rajkot.

Till March 2021, the GPCB had installed a total of six CAAQMS in Gujarat¹. It was observed that the CAAQMS installed in CPA was not based on the Polluter Pays Principle *i.e.*, by the industrial associations, as GPCB was operating these CAAQMS from its resources. The Industrial Associations of

¹ One each in Maninagar (Ahmedabad), Gandhinagar, Jamnagar, Vapi, Ankleshwar and Vatva (Ahmedabad).

Vapi and Vatva had assured to install of CAAQMS, but the same was yet to be installed (March 2021).

The GPCB was yet to comply with the directions of CPCB regarding the installation of at least two Continuous Ambient Air Quality Monitoring Stations in each CPA (June 2021).

Government stated (January 2022) that as per revised instructions of the CPCB (September 2021) only one CAAQMS is to be installed in each CEPI area and tenders had been invited to install CAAQMS in Vadodara and Surat.

The GPCB may expedite the installation of CAAQMS in all the six CPAs and million-plus cities (four) of the State to disseminate real-time information on AAQ of the CPAs and to enable timely intervention by the GPCB for mitigation of air pollution.

9.4 Lack of monitoring of Remedial Action Plan in critically polluted areas

The Ministry directed (May 2011) the GoG to constitute a State Level Committee (SLC)² under the chairmanship of Chief Secretary and a District Level Committee (DLC) under the chairmanship of District Magistrate or a senior Revenue Officer to review the implementation of Remedial Action Plan (RAP) approved by the CPCB in September 2010 every quarter. The RAP was required to address various environmental issues like the management of wastewater, industrial air pollution control, municipal and other solid waste management including vehicular pollution for the identified CPAs.

State Level Committee

The GoG constituted (June 2011) a SLC under the chairmanship of Principal Secretary, FED to review the implementation of cluster wise action plan for the CPAs. The first meeting of SLC for Vapi, Ahmedabad, Vatva, and Ankleshwar was held in April 2013 followed by another meeting for Vapi in December 2016 (after lifting of the moratorium in November 2016). In the SLC meeting of April 2013, all Regional Officers of the GPCB of CPAs were directed to coordinate with the District Collector for regular review of action plan at the district level.

The CPCB reiterated (June 2014) the constitution of the SLC for the effective implementation of RAP. CPCB also desired that (a) RAP is reviewed and monitored periodically at least every quarter, (b) RAP for CPAs is incorporated in the State Environment Policy, (c) Monitoring of Environment Quality of Severely Polluted Areas (SPAs) is done and (d) Action plan for SPAs is prepared by the GPCB on the same line of CPAs.

² The Principal Secretary, Forests and Environment Department is the Chairman of the SLC. The Member Secretary, GPCB is the Member Secretary of the SLC. The Principal Secretary -Industries and Mines Department, Vice Chairman and Managing Director- Gujarat Industrial Development Corporation, Director (Environment) and Additional Secretary- Forests and Environment are the other members of the SLC.

Audit observed (March 2021) that no meeting of the SLC was convened after 2016 and the outcome of the implementation of RAP was also not available on records.

District Level Committee

The GoG constituted (May 2015) DLCs for Vapi, Ankleshwar, Vatva (Vatva and Narol), Ahmedabad (Naroda and Odhav), Bhavnagar, Vadodara, Rajkot, and Surat to ensure the effective implementation of RAP i.e., almost after four years from the Ministry directions of May 2011. The DLC was required to ensure the implementation of an action plan for these industrial clusters and review the status of implementation every quarter.

Audit observed that only six meetings of the DLC in Ahmedabad (three), one each in Ankleshwar, Bhavnagar and Valsad were held in 2015-16, and thereafter, no DLC meetings were held (March 2021).

The GPCB stated (June 2021) that the Industries Association did not fully agree with the concept of CEPI considering various technical limitations. The GPCB further stated that in many areas, the action plan was monitored at the district level through the platform of the district environment committee. However, no details related to monitoring by the district environment committee have been provided in reply.

Due to non-holding of meetings of SLC and DLC on regular basis, implementation of RAP in CPA was not monitored and monitoring of environmental issues in CPA did not receive priority.

Conclusion

Between 2009 and 2018, three new cities, i.e., Vadodara, Rajkot, and Surat have been added to the list of CPA. The GPCB has not developed a system for periodic review of health impact assessment in CPA. The GPCB is yet to install the AAQMS in CPA as per norms, thereby leading to non-monitoring of AAQ on a real-time basis in CPA.