

# POLICY *Brief*

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## *Critical Problems with Critically Polluted Areas*

*An assessment of implementation of the Comprehensive Environmental Pollution Index and the strategy forward*

*Comprehensive Environmental Pollution Index (CEPI), is intended to act as an early warning tool, which is easy and quick to use. Using CEPI, industrial clusters were categorised in terms of priority for effective implementation of the remedial action for abatement of pollution. Unfortunately, CEPI has been met with a lot of opposition from industrial lobby and as a result, areas which were declared initially as critically polluted were delisted on questionable ground. CEPI is a critical tool and needs to be prepared taking into account all relevant factors and unless there is concrete evidence of decline in the Pollution Index over a long period of time, moratorium on new activities which causes pollution should continue. There is a need for the Government to review the Action Plan so that there is improvement in environmental quality as well as perceptible decline in the pollution load. In addition, Moratorium on expansion as well as setting up of new industries should continue even when an area is severely polluted.*

### **introduction**

Comprehensive Environmental Pollution Index was first formulated by Central Pollution Control Board in 2009 as a tool for environmental assessment of prominent industrial clusters. The aim was to identify, declare and prioritise the Critically Polluted Areas (CPAs) and Severely Polluted Areas (SPA's) and formulate comprehensive remedial action plans. The scoping and scoring methodology of CEPI

has been modified over time since its inception in 2009<sup>1</sup>. The areas were termed as Critically Polluted Areas (CPAs) and Severely Polluted Areas (SPAs) based on the aggregate score of '70' and between 60 -70<sup>2</sup> respectively. A total of 43 and 32 areas out of 88 industrial clusters were demarcated as CPAs and SPAs respectively<sup>3</sup>. In 2016, the CEPI scoring experienced a complete makeover, when CPCB dropped two important parameters from its evaluation system, namely human health and eco-geological structures in its vicinity. As a justification of omission, CPCB stated that, from 2009 onwards, three rounds of monitoring have been undertaken by CPCB in the year 2010, 2011 and 2013 respectively in all the 43 CPAs while it was found that, factors like potentially affected population and assessment of health impacts are difficult to measure<sup>4</sup>.

## Revision of CEPI

According to the revised CEPI methodology of 2016, Four components were considered – scale of industrial activity (Component A), Status of Ambient Environment Quality (Component B) which includes air, surface and ground water, health related statistics (Component C) obtained from various hospitals and pertaining to strictly pollution related diseases, and Compliance Status of Industries (Component D), having weightage of 20, 50, 10, and 20 marks, respectively.<sup>5</sup>

**In 2016, the CEPI scoring experienced a complete makeover, when CPCB dropped two important parameters from its evaluation system, which were likely to impact the scoring of the CPAs, namely human health and eco-geological structures in its vicinity**

The revised CEPI will be based on sources of pollution, real-time observed values of the pollutants in the ambient air, surface water and ground water in and around the industrial cluster and health-related statistics. The health data will be drawn from major hospitals in the area, which mean, for instance, for measuring air pollution, the total number of hospital cases related to asthma, bronchitis, respiratory cancer and acute respiratory infections will be used, where as for water pollution, cases of gastroenteritis, diarrhoea, kidney malfunction and cancer will be considered. Officials studying a project will take into account the previous five years' medical records drawn from 3-5 major hospitals in the area.<sup>6</sup>

<sup>1</sup> CEPI was developed by CPCB in collaboration with IIT Delhi, IIT Roorke, IIT Kharagpur, IIT, IIT Kanpur, Delhi technological University, NEERI, TERI, BITS Pilani

<sup>2</sup> Scoring framework was based on three factors – pollutant, pathways and receptor

<sup>3</sup> "Comprehensive environmental Assessment of Industrial Clusters" by Central Pollution Control Board, Ministry of Environment and Forests, published in 2009.

<sup>4</sup> CPCB letter dated 26<sup>th</sup> April 2016, vide No. B-29012/ESS(CPA)/2015-16/ , accessed on [http://www.cpcb.nic.in/upload/Latest/Latest\\_120\\_Directions\\_on\\_Revised\\_CEPI.pdf](http://www.cpcb.nic.in/upload/Latest/Latest_120_Directions_on_Revised_CEPI.pdf)

<sup>5</sup> Proceedings of meeting held on 18/06/2016 at Regional Office KSPCB, Mangaluru, regarding Revised CEPI 2016 and Action for Critically Polluted Areas. Accessed from: [http://kspcb.kar.nic.in/CEPI\\_Proceedings\\_23-06-16.pdf](http://kspcb.kar.nic.in/CEPI_Proceedings_23-06-16.pdf)

<sup>6</sup> <http://www.drishtias.com/upsc-exam-gs-resources-CPCB-proposes-revising-norms-for-critically-polluted-areas>

## enforcement gap

The April 2016 Notification required the SPCBs to notify the CPAs on a properly scaled map and demarcate this land exclusively for industrial activities through issuance of public advisories. The SPCBs containing CPAs were also directed to conduct third party monitoring bi-annually, which was done regularly by five states namely Andhra Pradesh, Madhya Pradesh, Odisha, Punjab and West Bengal whereas the remaining 10 states did no such monitoring of implementation of Action Plans by a third party, a CAG report on “Environmental Clearance and Post Clearance Monitoring” claimed.<sup>7</sup>

### Status of State-wise Action Plan Submission

According to same report<sup>8</sup>, out of 16 states containing CPAs, the SPCBs of 12 states had submitted the Action Plans, whereas the position of Action Plan could not be ascertained in case of 3 states namely – Gujarat, Jharkhand and Maharashtra. For the Najafgarh Drain Basin<sup>9</sup> area, the status of Action Plan was shown to be “Not Applicable”, to which the MoEFCC in October, 2016 stated that the Action Plan was in the draft stage. CPCB on 21<sup>st</sup> June had issued an action plan for Najafgarh Drain Basin area; however the same is not available now on their website<sup>10</sup>

In Andhra Pradesh, Chhattisgarh, Kerala, Odisha, Madhya Pradesh, Punjab, Rajasthan, Tamil Nadu and West Bengal, the implementation of action plan was monitored by SPCBs whereas in case of the states of Gujarat, Haryana, Jharkhand, Karnataka, Maharashtra and Uttar Pradesh, no monitoring by SPCBs took place. In case of Delhi, it was again stated as “not applicable”.<sup>11</sup>

### Efficacy of Action Plans

A case study of Vapi had been looked into to assess the effectiveness of action plan. Vapi, being the second-highest in the CEPI score among all the CPAs in 2009, was having a moratorium. In 2013, the Action Plan on Vapi cluster by the Gujarat Pollution Control Board (GPCB) listed steps to reduce air pollution<sup>12</sup>. In spite of all this, a comparison in Vapi industrial cluster between 2013 and 2016 shows an increase in the amount of air pollutants as shown in Table 1 and Table 2 respectively.

<sup>7</sup> “Report of the Comptroller and Auditor General of India on Environmental Clearance and Post Clearance Monitoring” published in 2016. Accessed on: [http://cag.gov.in/sites/default/files/audit\\_report\\_files/Union\\_Government\\_Report\\_39\\_of\\_2016\\_PA.pdf](http://cag.gov.in/sites/default/files/audit_report_files/Union_Government_Report_39_of_2016_PA.pdf)

<sup>8</sup> “Report of the Comptroller and Auditor General of India on Environmental Clearance and Post Clearance Monitoring” published in 2016. Accessed on: [http://cag.gov.in/sites/default/files/audit\\_report\\_files/Union\\_Government\\_Report\\_39\\_of\\_2016\\_PA.pdf](http://cag.gov.in/sites/default/files/audit_report_files/Union_Government_Report_39_of_2016_PA.pdf)

<sup>9</sup> Another identified CPA in Delhi

<sup>10</sup> [http://www.cpcb.nic.in/upload/Latest/Latest\\_177\\_20170619111301.pdf](http://www.cpcb.nic.in/upload/Latest/Latest_177_20170619111301.pdf)

<sup>11</sup> “Report of the Comptroller and Auditor General of India on Environmental Clearance and Post Clearance Monitoring” published in 2016. Accessed on: [http://cag.gov.in/sites/default/files/audit\\_report\\_files/Union\\_Government\\_Report\\_39\\_of\\_2016\\_PA.pdf](http://cag.gov.in/sites/default/files/audit_report_files/Union_Government_Report_39_of_2016_PA.pdf)

<sup>12</sup> included the planting of around 90,000 trees and proper greenbelt development, installation of 15 units of Electrostatic Precipitator (ESP), adoption of cleaner fuel, monitoring and curbing the release of Volatile Organic Compounds (VOCs) into the atmosphere with the help of Leak Detection and Repair (LDAR) program

**Table 1: Data collected from CETP Area of Vapi Cluster in 2013<sup>13</sup>**

| Pollutant                                       | 26/12/2013 | 28/12/2013 | 30/12/2013 |
|---|------------|------------|------------|
| PM <sub>10</sub> (micro gram/ m <sup>3</sup> )  | 87         | 74         | 96         |
| PM <sub>2.5</sub> (micro gram/ m <sup>3</sup> ) | 33         | 31         | 40         |
| Lead (micro gram/ m <sup>3</sup> )              | 0.10       | 0.08       | 0.10       |
| SO <sub>2</sub> (micro gram/ m <sup>3</sup> )   | 13.5       | 15.4       | 16.8       |

**Table 2: Data collected from CETP in Vapi Cluster in 2016<sup>14</sup>**

| Pollutant                                       | 08/06/2016 | 10/06/2016 | 12/06/2016 |
|---|------------|------------|------------|
| PM <sub>10</sub> (micro gram/ m <sup>3</sup> )  | 76         | 88         | 76         |
| PM <sub>2.5</sub> (micro gram/ m <sup>3</sup> ) | 42         | 45         | 44         |
| Lead (micro gram/ m <sup>3</sup> )              | 0.19       | 0.21       | 0.33       |
| SO <sub>2</sub> (micro gram/ m <sup>3</sup> )   | 14.2       | 12.8       | 15.7       |

The above data represented two different seasons – winter and summer and therefore are not comparable. Given the well established fact that concentration of air pollutants remains higher in winter season, monitoring should have been done in the winter season, so that the reduced pollution level (if at all reduction in concentration takes place) could be attributed to the implementation of action plan.

Despite this fact, the moratorium was lifted in 2016 from Vapi cluster<sup>15</sup>, bringing into question the entire quality of CEPI and CPAs. CPCB conducted monitoring in the Vapi cluster during October, 2016 when the CEPI score reduced from 85.31 (in 2013) to 68.2 (in 2016). It is worth mentioning that, such a reduction in CEPI scores may be attributed to the revised CEPI methodology<sup>16</sup>. However, the Office Memorandum did not mention if the revised CEPI methodology had in fact been followed or not.

<sup>13</sup> "Monitoring, Sampling and Analysis of Ambient Air Quality, Surface and Groundwater Quality in the identified 10 Critically Polluted Areas of India (Under Phase I Programme)" by Bhagavathi Ana Labs, Hyderabad, published in May, 2014. Accessed on: <http://cpcb.nic.in/divisionsofheadoffice/ess/cpcb-10cpa.pdf>

<sup>14</sup> "Sampling and Analysis of Ambient Air Quality and Water Quality in Selected Industrial Cluster Areas at Vapi, Gujarat" by Bhagavathi Ana Labs Pvt. Ltd. published in August, 2016.

<sup>15</sup> [Office Memorandum No J-11013/5/2010-IA.II \(I\) dated 25<sup>th</sup> November, 2016](#)

<sup>16</sup> Revised CEPI left out important factors like the impact on human health and eco-geological structures of the region

## Ignoring health Impacts

The revised CEPI calculation of 2016 has given 'health' 10% of the total CEPI score, due to various challenges in documenting the health impacts of pollution.

Several issues and gaps are there in the proposed manner of incorporation of health data, the most important one being the absence of specified health documentation processes in polluted regions and the methods proposed in the new notification.

Also, in case of health data drawn, the 'major hospital' needs to be defined, identified and listed in public domain. The authenticity of information shared by the hospitals is questionable given the fact that most of these hospitals (if not government-run) are affiliated with specific industries and therefore their results may be subjective.

There are government hospitals and centres, where health data is already being recorded (at varying degrees of quality) and they have a large role to play. This needs to be strengthened further in the context of pollution associated illnesses.

Documenting health impacts resulting from industrial pollution is a necessity in order to calculate any health sub-index, which is again not available readily, as in most of the cases documentation is either missing or poorly done.

## Undermining Severely Polluted Areas (SPA)

While formulating the original scoring of 2009 and revised methodology in 2016, the regulatory body remains ignorant towards the area demarcated as SPAs. It is important to note here that SPAs<sup>17</sup>, which are some decimal less than the score of '70' are equally critical and should not be allowed with any new industries or expansion of industries. This is not the scenario though.

For example, Severely Polluted Area of Durgapur in the State of West Bengal got TOR approval for expansion of one pig iron plant<sup>18</sup>. Further, the CEPI of 2009 did not keep any provision for formulation of any action plan for SPAs and therefore no mandate is there for these SPAs to reduce their pollution index.

## Moratorium often ignored in CPAs

Following CEPI scoring in 2009, a moratorium<sup>19</sup> on expansion of existing projects and establishment of new projects had been imposed in the 43 CPAs, however it has been removed from all, except 4 CPAs<sup>20</sup> till further orders.

A status check was done to assess the efficacy of moratorium. For example, Jharsuguda which had been declared as a CPA had a moratorium imposed in 2010<sup>21</sup>, which was lifted in 2011<sup>22</sup>. The

<sup>17</sup> like Baddi (69.07), Chembur (69.19), Paradeep (69.26), Durgapur (68.26), Kala Amb (68.77), Dewas (68.77) (to name a few)

<sup>18</sup> [TOR granted in Dec'16](#)

<sup>19</sup> [Office Memorandum No. J-11013/5/2010-IA.II\(I\) dated 26<sup>th</sup> October, 2010](#)

<sup>20</sup> [Office Memorandum No. J-11013/5/2010-IA.II \(I\) dated 25<sup>th</sup> November, 2016](#)

moratorium was re-imposed on 17<sup>th</sup> September, 2013, and was kept in abeyance<sup>23</sup> & <sup>24</sup>. In spite of the moratorium from 17<sup>th</sup> September, 2013 to 10<sup>th</sup> June, 2014, the expansion of Lakhapur Open Cast Mining of Mahanadi Coalfields Limited, was granted Environmental clearance by MoEFCC.<sup>25</sup>

Chandrapur (81.90) in Maharashtra was declared as a CPA and as a result moratorium was imposed from 13<sup>th</sup> January, 2010 to 1<sup>st</sup> September, 2014<sup>26</sup>. In spite of this, 8 coal mining projects (new and expansion) were granted Environmental Clearance by MoEFCC.

## Lack of Transparency

The latest Notification of revised CEPI dated 26<sup>th</sup> April 2016 has directed the State Pollution Control Boards to maintain transparency in law-enforcement, by making information available in public domain through SPCB websites, latest by June 30, 2016.

This has hardly been practiced. Out of 16 states, 5 states, viz. Andhra Pradesh, Chhattisgarh, Karnataka, Odisha and Punjab had displayed the Action Plans on their websites while 6 states, viz. Jharkhand, Haryana, Madhya Pradesh, Rajasthan, Uttar Pradesh and West Bengal have not. No information is available at all regarding the Action Plans of Delhi, Gujarat, Kerala and Maharashtra<sup>27</sup>.

## WAY FORWARD

CEPI was initiated as a tool to identify and take remedial measures to deal with areas which have extremely high pollution load. In furtherance of this, moratorium was imposed with respect to areas which were critically polluted, following which, all efforts should have been directed as reducing the pollution by implementation of the Action Plan. Unfortunately, rather than making concrete efforts in reducing the pollution, all efforts were directed towards two principle activities: ensuring that the moratorium is lifted hastily even if the CEPI scope was down by only a decimal; and Secondly, rather than action plan to reduce pollution, important parameters including human health and ecological structures have been excluded. These are significant dilution. Even more problematic is the fact that even where restrictions were in place for areas which are Critically Polluted, these restrictions do not exist when the area is 'Severely Polluted'. Industrial projects are approved without any mention of the fact that the area is still severely polluted. According to the CPCB, the estimation of CEPI should be a dynamic and ongoing process and should have continuous flow of additional data and information. It further states that the Industrial clusters should be subjected to detailed environmental investigations<sup>28</sup>.

There is a need to revive as well as review CEPI. All areas where moratorium was withdrawn on the ground that the area is not critically polluted but severely polluted needs to be reviewed by a multidisciplinary team of experts. In addition, SEIAA as well as Ministry of Environment, Forest and

<sup>21</sup> [Office Memorandum No. J-11013/5/2010-IA.II\(I\) dated 26<sup>th</sup> October, 2010](#)

<sup>22</sup> [Office Memorandum dated 5<sup>th</sup> July, 2011](#)

<sup>23</sup> Office Memorandum dated 10<sup>th</sup> June, 2014

<sup>24</sup> [http://www.moef.nic.in/sites/default/files/PDF%20file\\_2.pdf](http://www.moef.nic.in/sites/default/files/PDF%20file_2.pdf)

<sup>25</sup> <http://environmentclearance.nic.in/search.aspx>

<sup>26</sup> <http://environmentclearance.nic.in/search.aspx>

<sup>27</sup> "Report of the Comptroller and Auditor General of India on Environmental Clearance and Post Clearance Monitoring" published in 2016.

Accessed on: [http://cag.gov.in/sites/default/files/audit\\_report\\_files/Union\\_Government\\_Report\\_39\\_of\\_2016\\_PA.pdf](http://cag.gov.in/sites/default/files/audit_report_files/Union_Government_Report_39_of_2016_PA.pdf)

<sup>28</sup> [http://cpcb.nic.in/divisionsofheadoffice/ess/NewItem\\_151\\_Final\\_Book1.pdf](http://cpcb.nic.in/divisionsofheadoffice/ess/NewItem_151_Final_Book1.pdf)

Climate Change should consider projects for environmental clearance in areas which are Severely Polluted only if it is satisfied that there has been perceptible decline in the levels of pollution.

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CEPI could have been an effective tool to ensure better quality of life for those paying the price of development. It still has scope if there is earnest and effective steps taken by the Government as well as the Industry who have been the key players in getting the moratoriums lifted. Civil Society and media have to be more vigilant in ensuring enhanced monitoring as well as questioning arbitrary exclusion of criteria for calculating CEPI score.

## REFERENCES

1. Criteria for Comprehensive Environmental Assessment of Industrial Clusters, CPCB, 2009

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