

● Good ● Satisfactory ● Moderate ● Very Poor



CREA

Centre for Research on Energy and Clean Air

Mid-year air quality assessment for India

January to June 2025

Key highlights

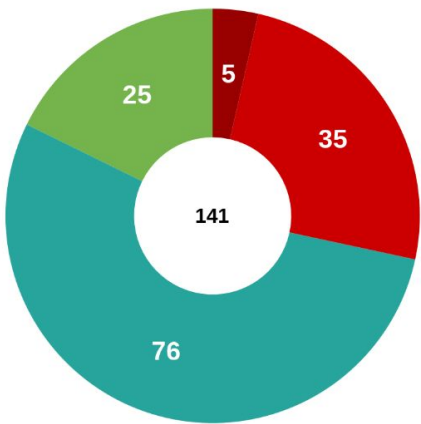
- Compliance: From January to June 2025 (H1), PM_{2.5} data was available for over 80% of the days in 239 out of 293 cities with Continuous Ambient Air Quality Monitoring Stations (CAAQMS). **Among 239 cities, 122 cities exceeded the annual National Ambient Air Quality Standards (NAAQS) of India** (40 µg/m³), while 117 cities were below the annual NAAQS. However, **all 239 cities exceeded the annual World Health Organization (WHO) standard** (5 µg/m³).
 - NCAP cities: All 98 National Clean Air Programme (NCAP) cities with CAAQMS installed exceeded the WHO standard, while 55 cities exceeded the NAAQS.
 - Non-NCAP cities: Among the 141 non-NCAP cities, all exceeded the WHO standard, and 67 cities exceeded the NAAQS.
- AQI category: In H1 2025, the number of cities with ‘Good’ (0-30 µg/m³) air quality stood at 43. Meanwhile, cities experiencing ‘Satisfactory’ (31-60 µg/m³) air quality were recorded at 174. Additionally, 21 cities reported ‘Moderate’ (61-90 µg/m³) air quality while one city had ‘Very Poor’ (121-250 µg/m³)
- Most polluted city: In 2025 H1, **Byrnihat, located on the Assam-Meghalaya border, ranked as the most polluted city in India, with an average PM2.5 concentration of 133 µg/m³.**
 - Most days in Byrnihat were in the ‘Very Poor’ category (75), followed by the ‘Moderate’ category (38), ‘Poor’ category (27), ‘Severe’ category (13),’ and the Satisfactory’ category (25) – there were no ‘Good’ category air quality days.
- **Delhi ranked as India's 2nd most polluted city, with PM_{2.5} pollution levels reaching twice the NAAQS at 87 µg/m³.**
 - Most days in Delhi were in the ‘Moderate’ category (63), followed by the ‘Satisfactory’ category (52), ‘Poor’ category (31), ‘Very Poor’ category on (29), and both ‘Severe’ and ‘Good’ categories on three days each.

- Hajipur, Ghaziabad, Gurgaon, Sasaram, Patna, Talcher, Rourkela, and Rajgir were the other cities in the top 10 polluted list.
- **Among India's top 10 polluted cities, four were located in Bihar, two in Odisha, while Delhi, Assam, Haryana and Uttar Pradesh each had one.**
- Cleanest city: Aizawl, in the state of Mizoram, was the cleanest city in India during H1, with a average PM_{2.5} of 8 µg/m³. The top 10 cleanest cities comprise three cities from Karnataka, two each from Tamil Nadu and Uttar Pradesh, and one each from Mizoram, Manipur, and Madhya Pradesh.
- Overshoot Analysis: The "overshoot day" is defined as a day when the average pollution levels preceding that day are so high that even a 0.1 g/m³ daily concentration of the pollutant for the remaining days of the year would ensure non-compliance of the city to the prescribed annual standard or guideline.
 - **As of June 2025, 259 out of 293 cities have overshoot the WHO's annual PM_{2.5} standards**, indicating widespread non-compliance with global air quality guidelines.
 - In January, 107 cities overshoot WHO PM_{2.5} standards, followed by 114 in February, 21 in March, ten in April, four in May and three in July.
 - The sequential overshoot in different cities across the country emphasises that the **issue is widespread rather than confined to a few regions in India.**
 - Despite several cities being among the most polluted in the country, only a few are currently included in the NCAP. Thus, **for other cities with persistent severe air quality issues, there are no action plans to reduce pollution levels.**
 - However, when evaluated against India's NAAQS, only three cities overshoot during the H1 2025 period. This significant disparity reveals that the current NAAQS are inadequate for ensuring public health protection.
 - Given that NAAQS were set in 2009 and have not been updated since, **a revision is urgently needed to align them more closely with international recommendations, particularly the WHO's interim targets.**

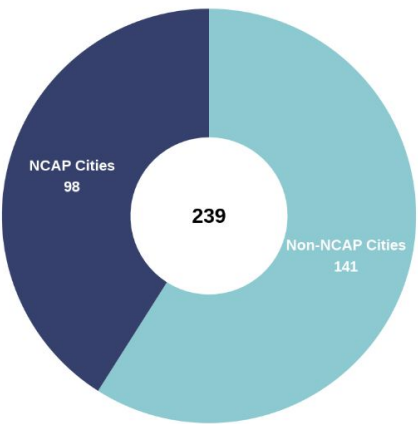
- Beyond vehicles and biomass burning: The need for a multi-sectoral approach to Delhi's air pollution
 - Delhi overshoot the WHO annual PM_{2.5} standard on 10 January 2025 and the NAAQS on 5 June 2025. This means the city will remain in violation of both standards for the rest of the year, even if pollution levels stay low.
 - While introduction of vehicle restrictions such as the end-of-Life ban in Delhi are an important part of air quality management, focusing solely on vehicular emissions risks overlooking other critical year-round sources of pollution.
 - According to source apportionment studies from the Portal for Regulation of Air-pollution in Non-Attainment cities ([PRANA](#)) and [IIT Delhi](#), in addition to transport (17%-28%) and dust (17%-38%), several other sectors contribute significantly to PM2.5 levels including residential combustion (8%-10%), agricultural burning (4%-7%), and industrial activities and power plants (22%-30%). These studies consistently show that Delhi-NCR's air quality crisis is not solely due to vehicles or seasonal biomass burning but is also driven by continuous emissions from multiple sources across sectors.
 - For example, despite clear Supreme Court directives, critical pollution control technologies such as Flue Gas Desulfurization (FGD) systems are still absent in most thermal power plants near Delhi. As of mid-2025, only two out of eleven plants within a 300-kilometre radius of the capital (NTPC Dadri and Mahatma Gandhi coal fired power plants) have operational FGDs.
 - This regulatory gap weakens the gains made through stricter vehicle policies and creates an uneven enforcement landscape, where vehicle and agriculture sources face heavy scrutiny while other sources continue to pollute unchecked.
 - Unless mitigation measures for all polluting sectors are enforced with urgency, the benefits of end-of-Life bans and seasonal controls will be overwhelmed by persistent background pollution.
 - **A serious response to Delhi's air pollution problem requires a multi-sectoral approach that applies the same level of attention and regulatory effort to power and industry as is currently applied to transport and agriculture.**

Number of cities vs frequency of days with PM_{2.5} concentration above daily NAAQS and WHO guidelines – January to June 2025

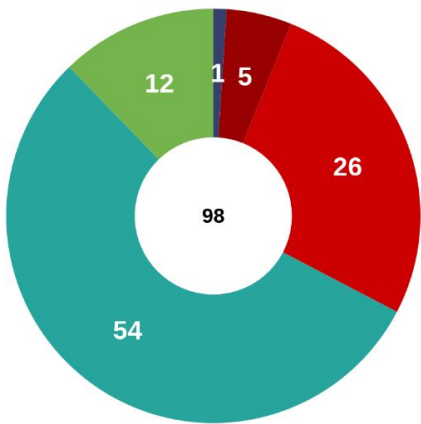
Categorisation of non-NCAP cities against compliance to NAAQS guidelines



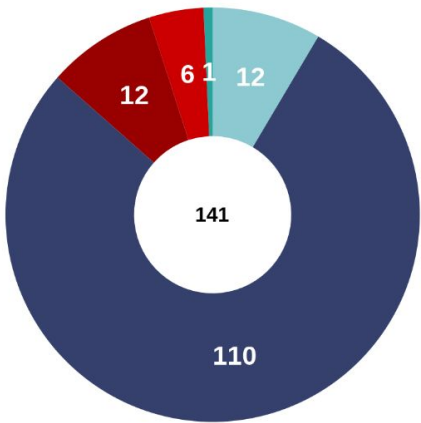
Total # of cities with >80% of the days with CAAQMS data



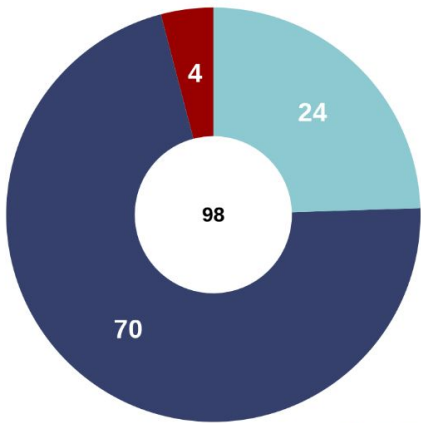
Categorisation of NCAP cities against compliance to NAAQS guidelines



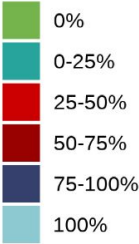
Categorisation of non-NCAP cities against compliance to WHO guidelines



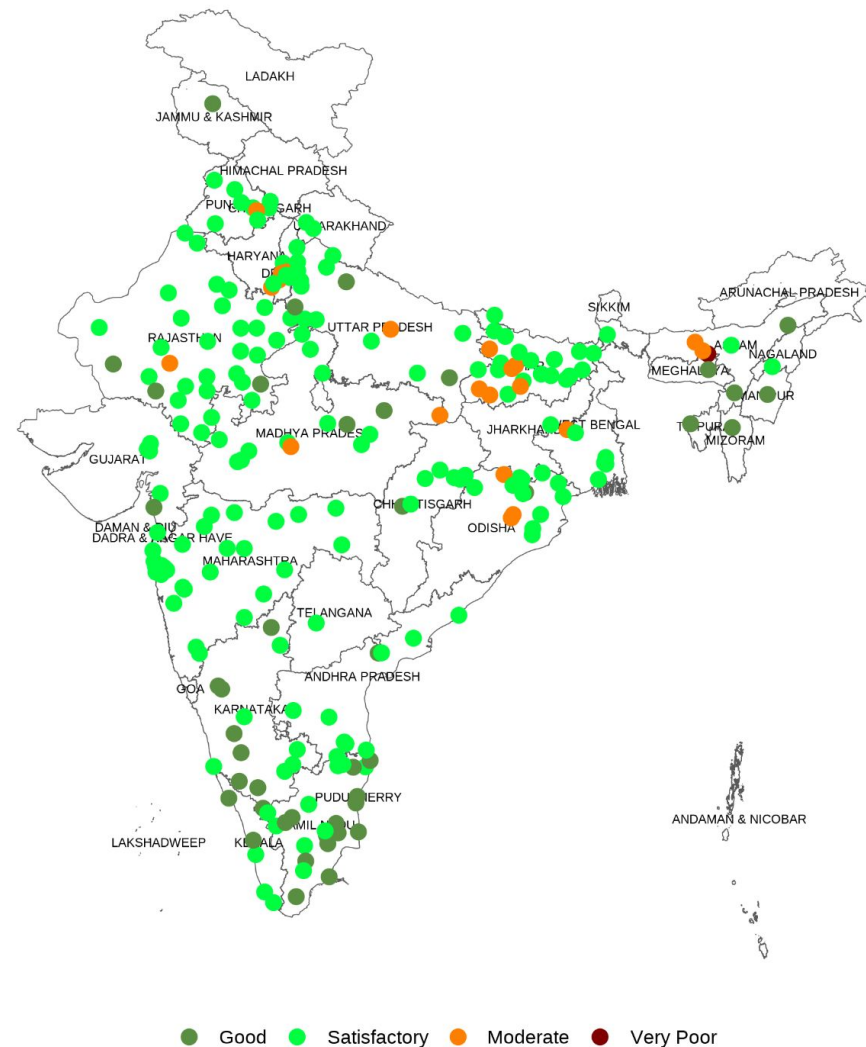
Categorisation of NCAP cities against compliance to WHO guidelines



% of days above standard



Distribution of cities by Air Quality Index (AQI) categorisation based on average PM_{2.5} concentrations – January to June 2025



State/UT	Number of cities in AQI category (PM _{2.5} µg/m ³)				
	Good (0-30)	Satisfactory (31-60)	Moderate (61-90)	Poor (91-120)	Very Poor (121-250)
Andhra Pradesh	1	8	0	0	0
Assam	2	1	2	0	1
Bihar	0	18	6	0	0
Chandigarh	0	1	0	0	0
Chhattisgarh	1	7	0	0	0
Gujarat	1	5	0	0	0
Haryana	0	1	1	0	0
Himachal Pradesh	0	1	0	0	0
Jammu and Kashmir	1	0	0	0	0
Jharkhand	0	1	0	0	0
Karnataka	8	6	0	0	0
Kerala	2	3	0	0	0
Madhya Pradesh	2	9	2	0	0
Maharashtra	0	30	0	0	0
Manipur	1	0	0	0	0
Meghalaya	1	0	0	0	0
Mizoram	1	0	0	0	0
NCT of Delhi	0	0	1	0	0
Nagaland	0	1	0	0	0
Odisha	1	12	3	0	0
Puducherry	1	0	0	0	0
Punjab	0	6	1	0	0
Rajasthan	3	29	2	0	0
Tamil Nadu	13	10	0	0	0
Telangana	0	1	0	0	0
Tripura	1	0	0	0	0
Uttar Pradesh	3	15	2	0	0
Uttarakhand	0	3	0	0	0
West Bengal	0	6	1	0	0

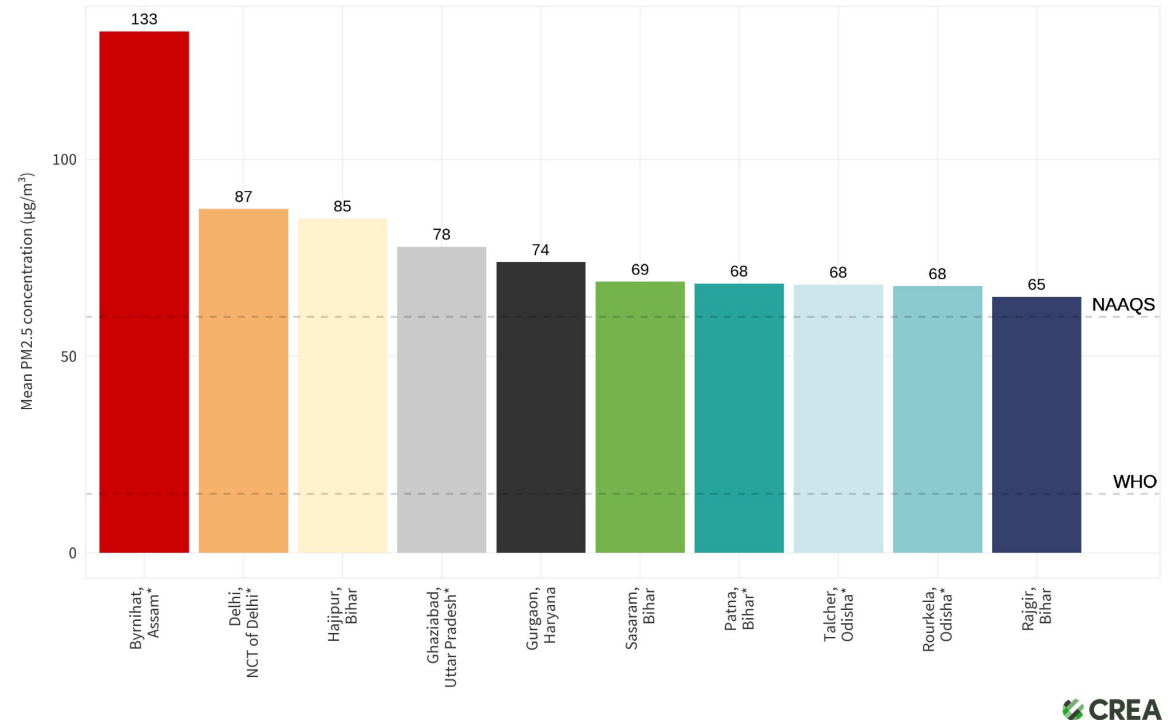
Top 10 most polluted cities in India by PM_{2.5} concentration – January to June 2025

Days in respective AQI categories based on PM_{2.5} (µg/m³) – January to June 2025

City	PM _{2.5} (µg/m ³)	Good (0-30)	Satisfactory (31-60)	Moderate (61-90)	Poor (91-120)	Very poor (121-250)	Severe (>250)
Byrnihat	133	0	25	38	27	75	13
Delhi	87	3	52	63	31	29	3
Hajipur	85	13	41	47	42	35	1
Ghaziabad	78	3	70	55	29	24	0
Gurgaon	74	18	52	59	36	16	0
Sasaram	69	11	58	70	22	9	0
Patna	68	16	72	50	31	12	0
Talcher	68	28	64	25	35	18	0
Rourkela	68	0	85	62	27	7	0
Rajgir	65	34	67	37	18	20	0

Top 10 most polluted cities in India by PM_{2.5} concentration - January to June 2025

* indicates NCAP cities



Daily PM_{2.5} concentration in Top 10 most polluted cities – January to June 2025

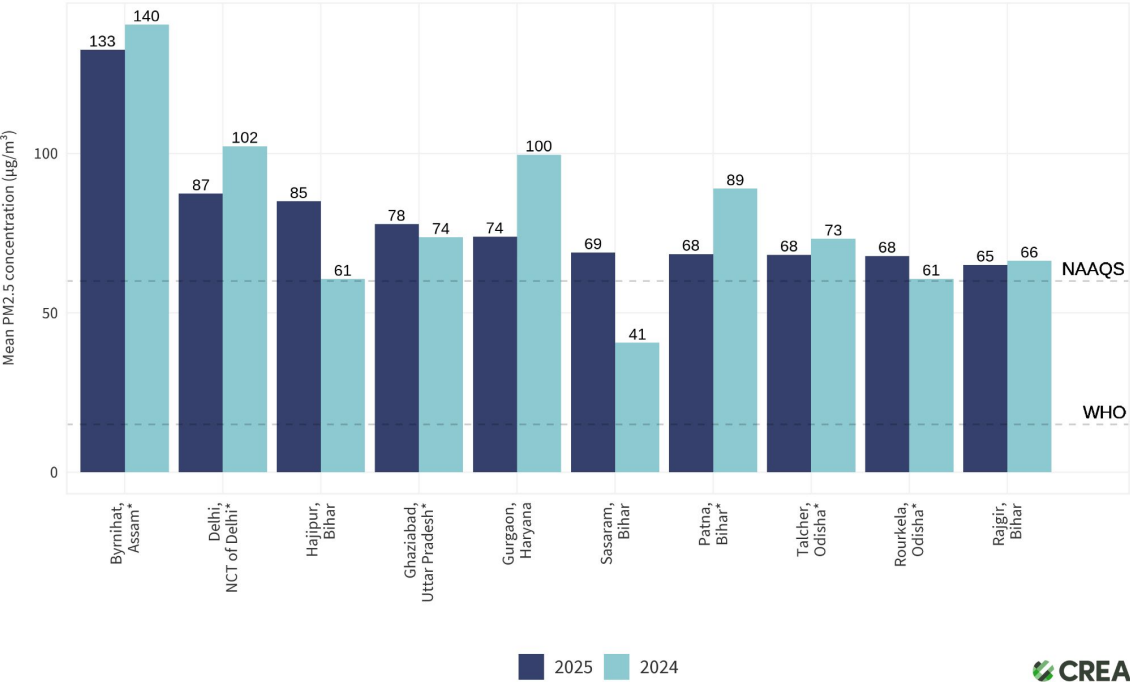


Status of PM2.5 concentration from January to June 2024 in the top 10 most polluted cities across India compared to the same period in 2025

Days in respective AQI categories based on PM _{2.5} (µg/m ³) – January to June 2024							
City	PM _{2.5} (µg/m ³)	Good (0-30)	Satisfactory (31-60)	Moderate (61-90)	Poor (91-120)	Very poor (121-250)	Severe (>250)
Byrnihat	140	5	23	11	23	108	7
Delhi	102	0	28	82	26	42	4
Ghaziabad	74	2	88	50	14	27	1
Gurgaon	100	0	15	67	52	47	1
Hajipur	61	13	81	68	18	0	0
Patna	89	1	38	68	44	31	0
Rajgir	66	45	70	18	12	34	0
Rourkela	61	12	81	74	15	0	0
Sasaram	41	96	41	16	23	2	0
Talcher	73	19	61	55	25	22	0

Year-on-year change of top 10 most polluted cities in India by PM2.5 concentration - January to June

* indicates NCAP cities



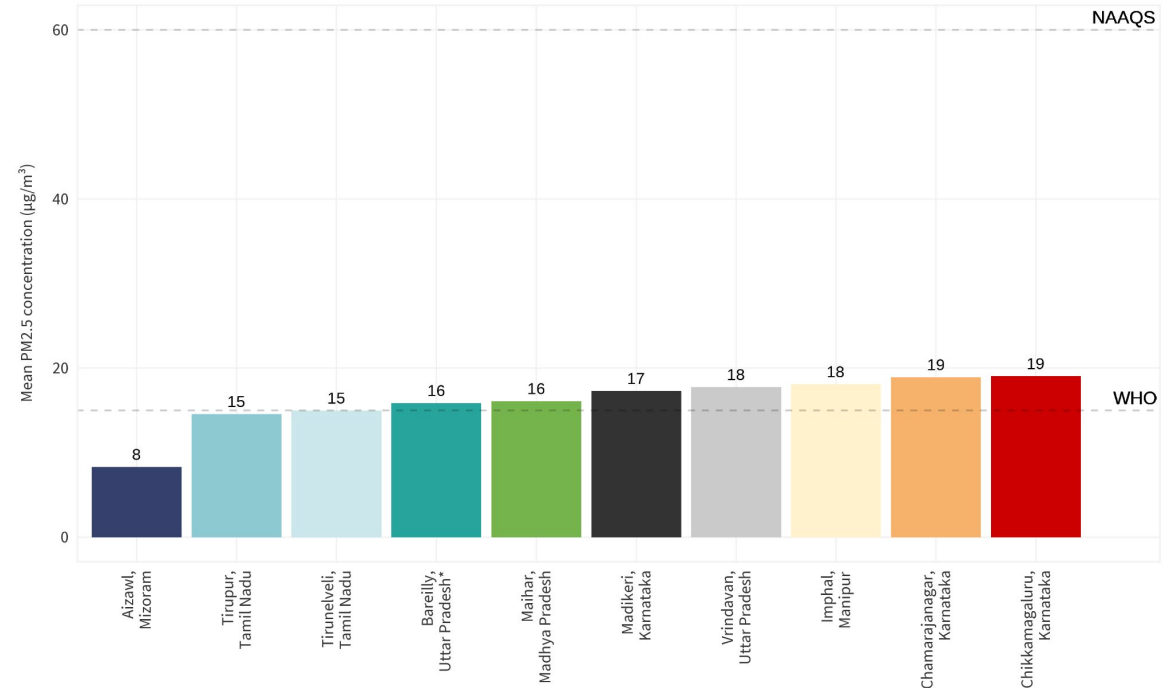
Top 10 cleanest cities in India by PM_{2.5} concentration – January to June 2025

Days in respective AQI categories based on PM_{2.5} (µg/m³) – January to June 2025

City	PM _{2.5} (µg/m ³)	Good (0-30)	Satisfactory (31-60)	Moderate (61-90)	Poor (91-120)	Very poor (121-250)	Severe (>250)
Aizawl	8	175	2	0	0	0	0
Tirupur	15	152	22	0	0	0	0
Tirunelveli	15	174	0	0	0	0	0
Bareilly	16	180	1	0	0	0	0
Maihar	16	148	13	0	0	0	0
Madikeri	17	159	16	0	0	0	0
Vrindavan	18	159	14	0	0	0	0
Imphal	18	125	21	0	0	0	0
Chamarajanagar	19	157	0	0	0	0	0
Chikkamagaluru	19	131	19	0	0	0	0

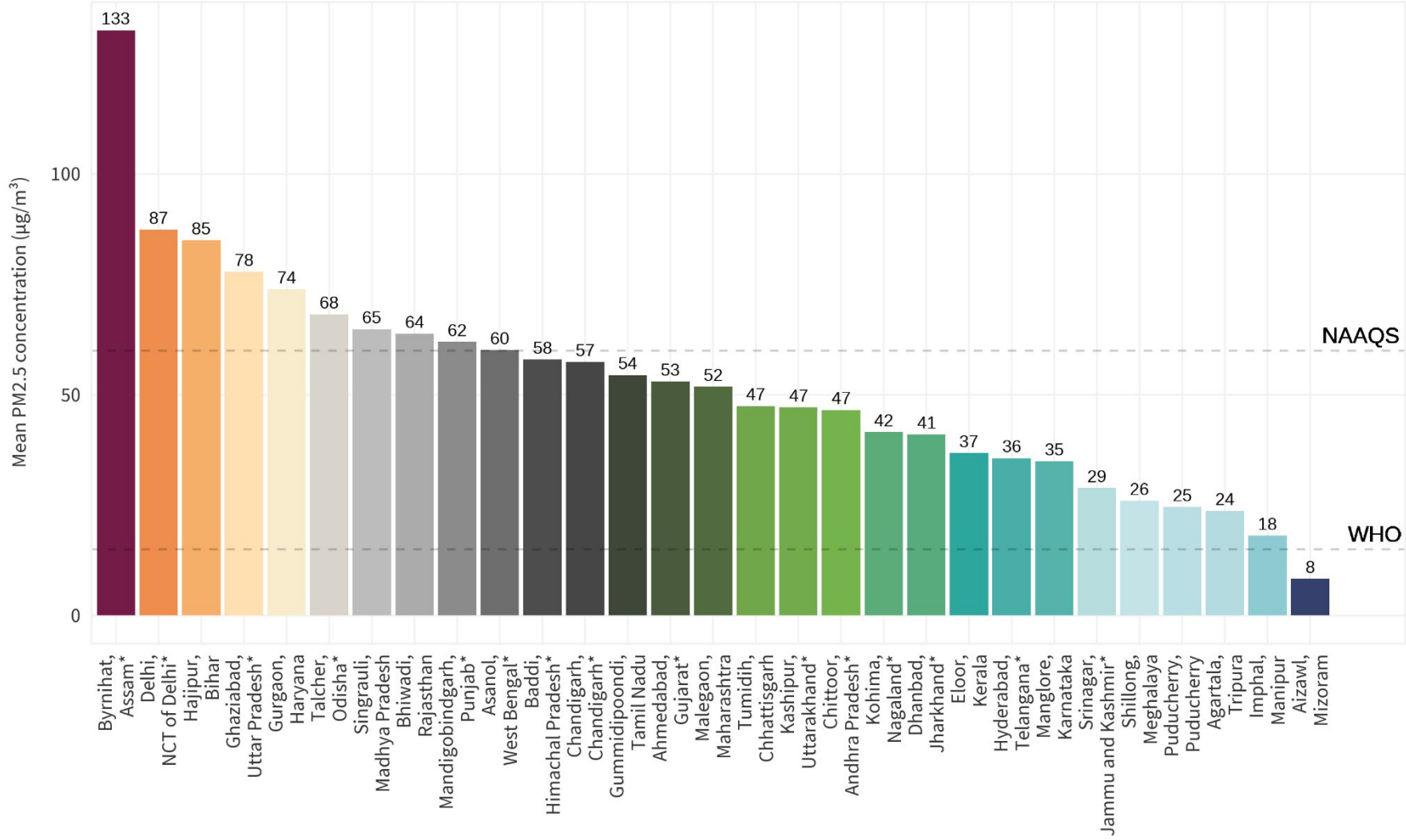
Top 10 most cleanest cities in India by PM_{2.5} concentration - January to June 2025

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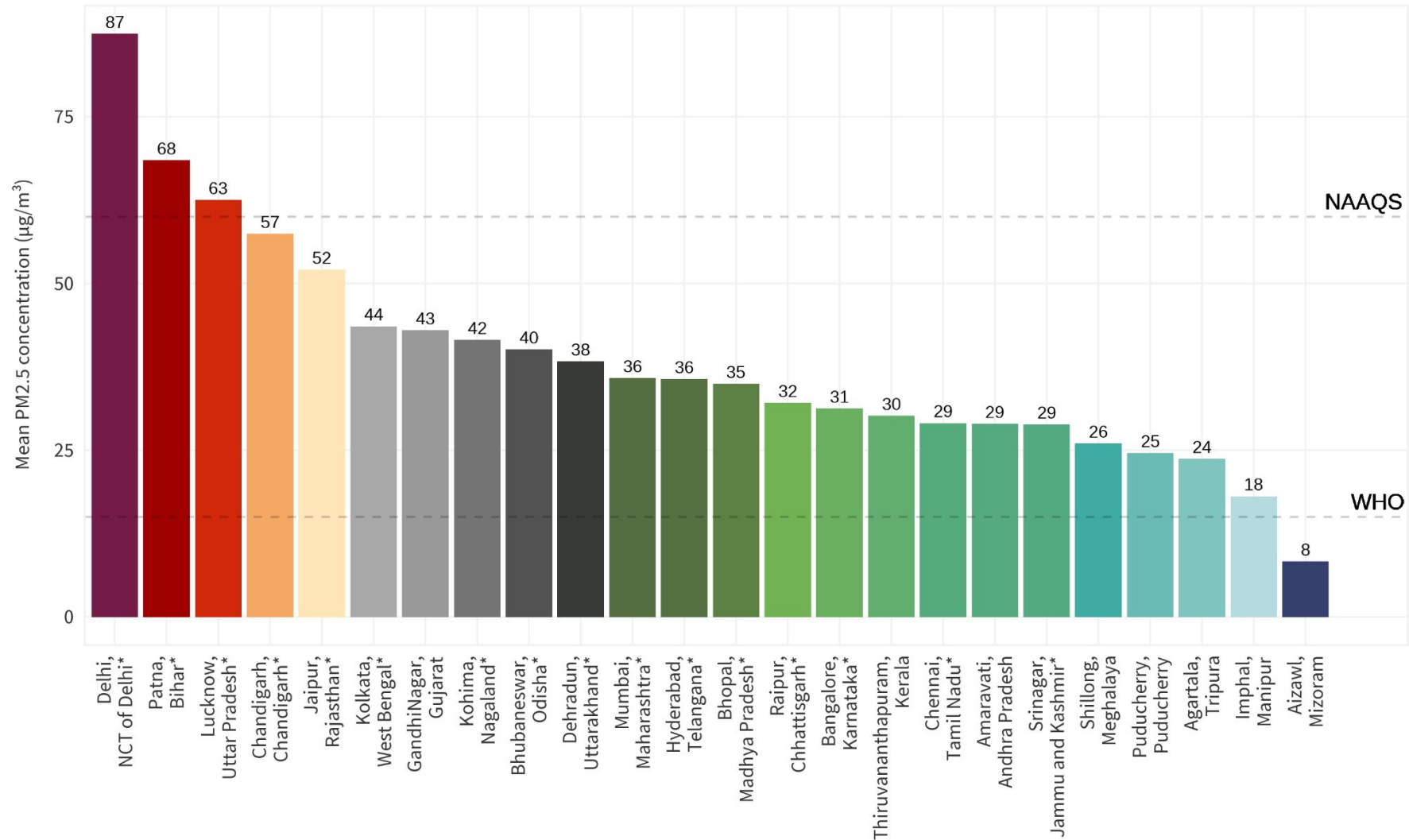
State-wise most polluted cities (PM_{2.5}, µg/m³) in India – January to June 2025

* indicates NCAP cities

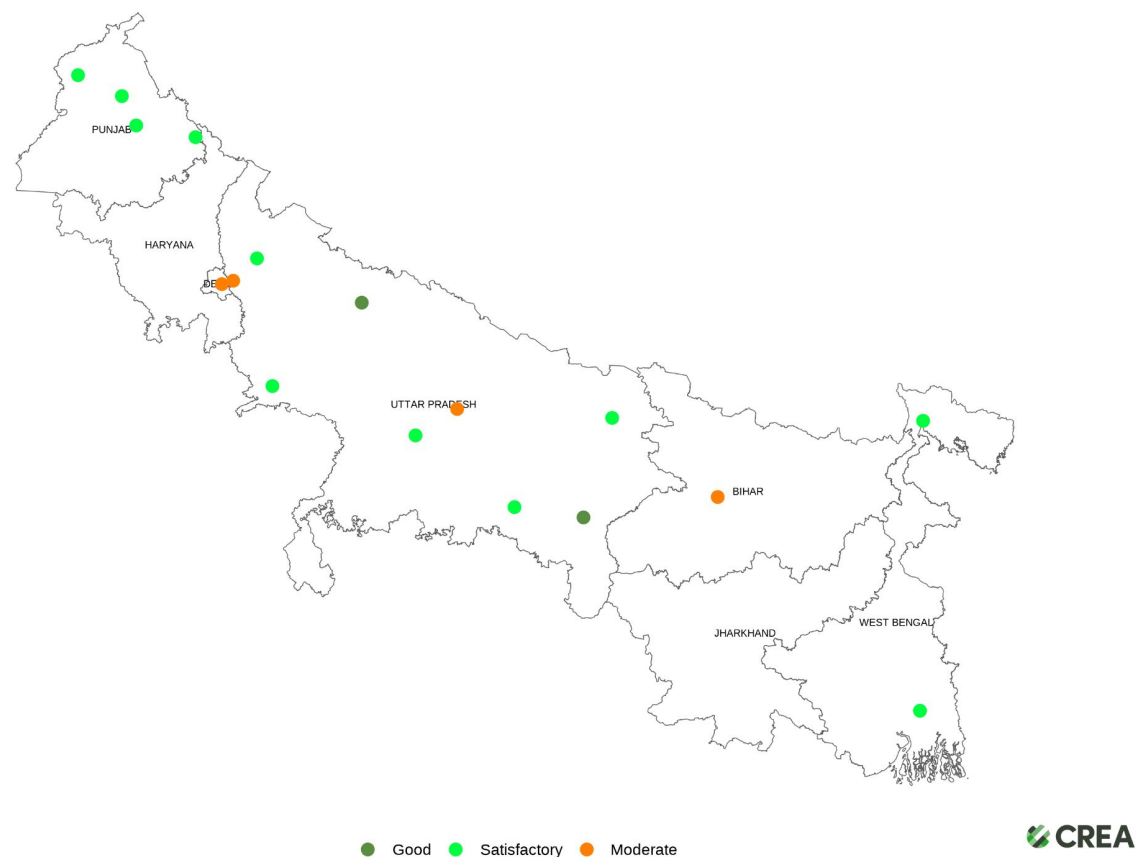


PM_{2.5} concentrations across state/provincial capital cities in India – January to June 2025

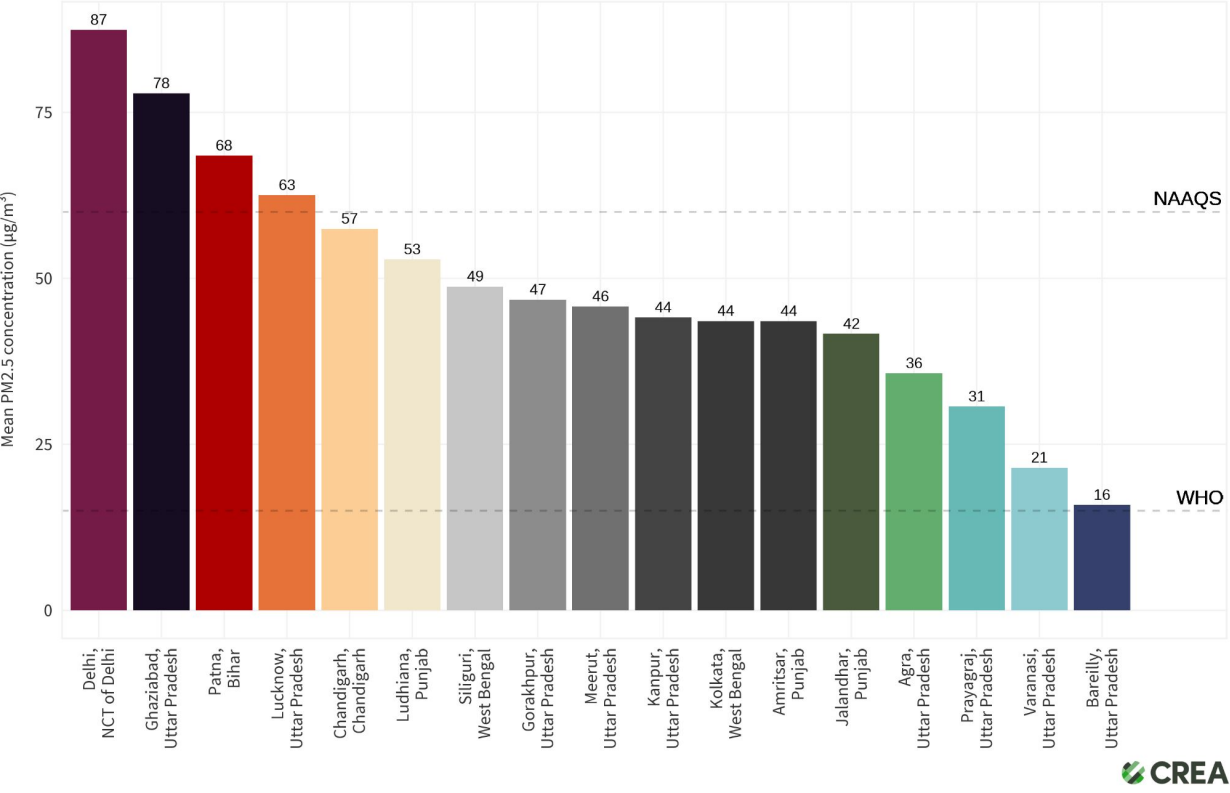
* indicates NCAP cities



PM_{2.5} concentrations across million plus cities in Indo-Gangetic Plain in India (with CAAQMS) – January to June 2025



PM_{2.5} concentrations across million plus cities in Indo-Gangetic Plain in India (with CAAQMS) - January to June 2025



Data sources

Ambient air quality data recorded by Continuous Ambient Air Quality Monitoring Stations (CAAQMS) is downloaded from the '[Central Control Room for Air Quality Management - All India](#)' dashboard operated by the Central Pollution Control Board (CPCB).

Resources

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