



Air Quality Analysis: Early Winter Trends Across Indian Cities

Over **53% of Indian cities**, a staggering **149 of 281 cities**, fell in the **Moderate to Poor** air quality categories during the analysis period, with the majority concentrated in the **Indo-Gangetic Plain, Northern, and Central regions**.

Introduction

As early winter sets in, India grapples with the seasonal challenge of deteriorating air quality. The [AtlasAQ platform](#) by [Respirer Living Sciences](#) monitored PM2.5 levels across 281 cities during the first half of November 2024 (November 3 - 16), assessing air quality in the post-Diwali or early winter onset period in India.

This two-week analysis reveals alarming trends in pollution levels, exacerbated by regional practices and climatic conditions. The report categorises cities based on air quality standards and tracks shift in pollution levels week-on-week, providing critical insights for policymakers, environmentalists, and civil society. It also provides rankings of the cleanest and most polluted cities at the national and state levels.

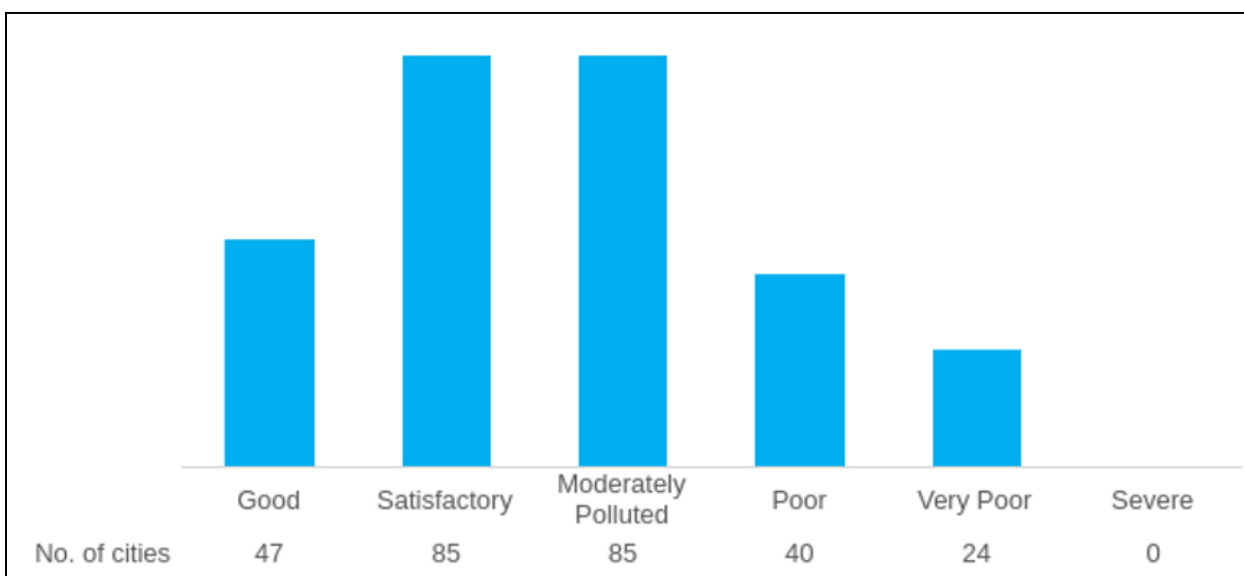
With over half of the cities analysed falling into the moderately to very poor pollution categories, this study highlights the urgent need for comprehensive mitigation strategies, emphasising the regions and factors most in need of attention.

“This widespread poor air quality reflects the compounding effects of urbanisation, industrial emissions, and seasonal agricultural practices like stubble burning, emphasising the need for targeted mitigation strategies in these hotspots. Year-round monitoring and tracking of the cities which are featured in the poor, very poor and severe categories can assist with identifying early trends and ensuring we don’t experience such cataclysmic conditions again next year in these cities.”

Ronak Sutaria, Founder and CEO, Respirer Living Sciences

Key Highlights

1. **Over 53% of Indian cities—a total of 149 cities—were categorised as having Moderate to Poor air quality during the period of 3rd–16th November.** These cities were primarily concentrated in regions such as the Indo-Gangetic Plain (spanning states like Delhi, Uttar Pradesh, Bihar, and Haryana), along with parts of Central India (including Madhya Pradesh and Chhattisgarh) and Western India (notably Rajasthan).

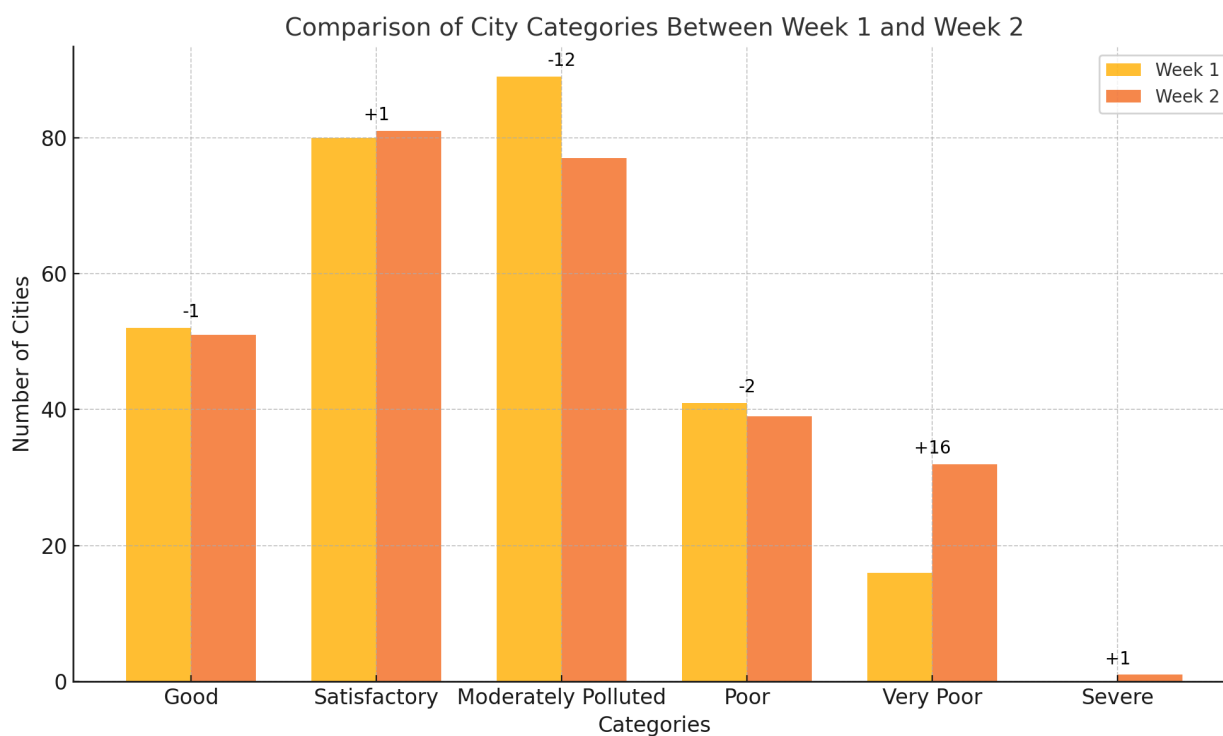


2. **Broad Coverage of Air Quality Data**

PM2.5 data was collected from 281 cities across India. Cities featured in the rankings had data uptime exceeding 70%, ensuring a robust and accurate representation of air quality trends across regions. This widespread coverage enables a clear understanding of pollution hotspots and areas performing well in maintaining air quality.

3. Significant Shifts in Air Quality Between Weeks

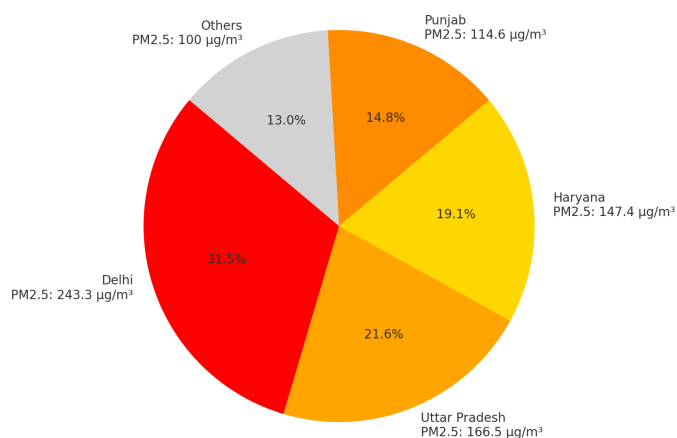
The transition from the first week (3rd–9th November) to the second week (10th–16th November) saw a notable increase in cities categorised as "Very Poor," rising from 16 to 32. Simultaneously, the number of cities categorized as "Moderately Polluted" decreased by 12, underscoring worsening conditions across specific regions.



4. Alarming Levels of Urban Pollution in Northern India

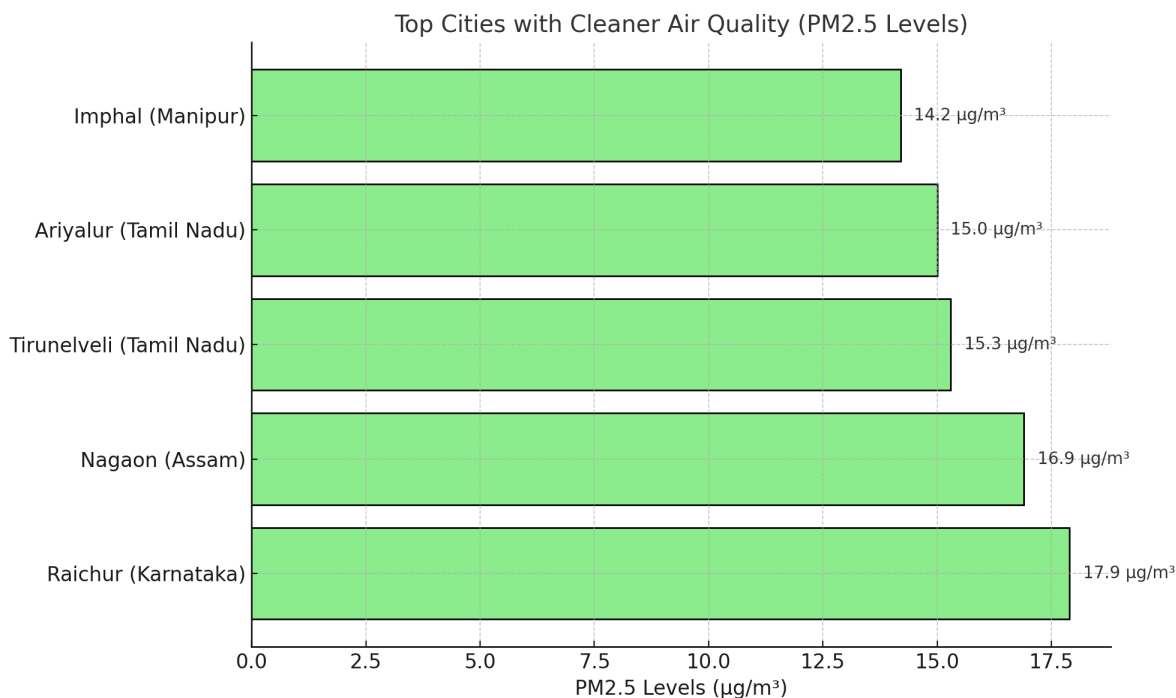
Delhi emerged as the most polluted city with an average PM_{2.5} level of 243.3 $\mu\text{g}/\text{m}^3$, reflecting a 19.5% week-on-week increase. Cities in Uttar Pradesh, Haryana, and Punjab also featured prominently among the worst performers, highlighting the cumulative impact of industrial emissions, vehicular pollution, and stubble burning.

PM_{2.5} Pollution Contribution Across Northern India with Concentrations



5. Clean Air in Select Regions

Cities like Imphal in Manipur (average PM_{2.5}: 14.2 $\mu\text{g}/\text{m}^3$) and Ariyalur in Tamil Nadu (15.0 $\mu\text{g}/\text{m}^3$) were ranked among the cleanest in India. Southern and northeastern states demonstrated better air quality, benefiting from favourable geographic conditions and potentially effective local interventions.



6. Seasonal and Regional Drivers of Pollution

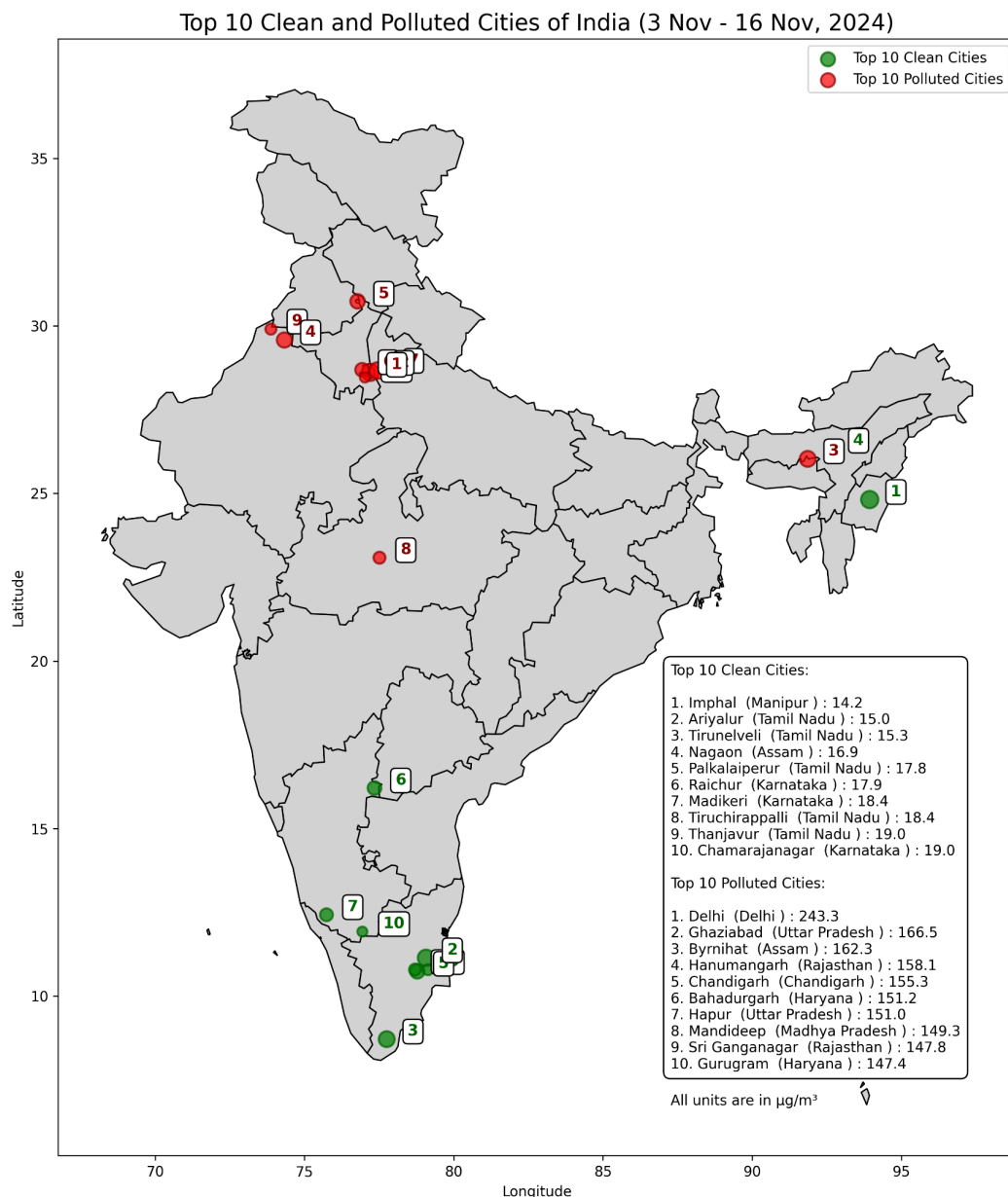
The onset of winter coupled with agricultural practices like stubble burning in the northern plains significantly influenced the escalation of PM_{2.5} levels. Meteorological conditions further exacerbated pollution, trapping particulates closer to the ground and reducing dispersion rates.



Detailed Analysis

Contrasting Air Quality Across Indian Cities

India's air quality exhibits stark regional contrasts, with some cities maintaining impressively low PM2.5 levels while others grapple with hazardous pollution.



Cities with cleaner air showcase the benefits of effective local governance, lesser industrial activities, and favourable geographical conditions such as higher rainfall and better air circulation.

Cleanest Cities in India

Cities in southern and northeastern India emerged as air quality champions during this period. Imphal, Manipur, recorded the lowest average PM_{2.5} level (14.2 µg/m³), followed by Ariyalur and Tirunelveli in Tamil Nadu. These cities exhibited minimal fluctuations across the two weeks, suggesting consistent air quality management practices or naturally advantageous conditions like better air circulation and minimal industrial activity. The dominance of cities from Tamil Nadu and Karnataka on the "cleanest cities" list points to the benefits of sustainable urban planning and effective emissions control.

Top 10 cleanest cities in India

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Imphal	Manipur	14.4	14.0	-2.9	14.2
2	Ariyalur	Tamil Nadu	15.7	14.3	-9.8	15.0
3	Tirunelveli	Tamil Nadu	16.1	14.5	-11.0	15.3
4	Nagaon	Assam	19.3	14.3	-35.0	16.9
5	Palkalaiperur	Tamil Nadu	19.9	16.2	-22.8	17.8
6	Raichur	Karnataka	18.7	16.9	-10.7	17.9
7	Madikeri	Karnataka	20.2	16.5	-22.4	18.4
8	Tiruchirappalli	Tamil Nadu	18.7	18.1	-3.3	18.4
9	Chamarajanagar	Karnataka	20.0	18.0	-11.1	19.0
10	Thanjavur	Tamil Nadu	19.0	18.9	-0.5	19.0

Most Polluted Cities in India

Delhi topped the list of the most polluted cities, with an alarming average PM_{2.5} concentration of 243.3 µg/m³ over the two weeks. Ghaziabad, Uttar Pradesh, and Chandigarh followed closely, with average concentrations of 166.5 µg/m³ and 155.3 µg/m³, respectively.

Top 10 polluted cities in India

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Delhi	Delhi	217.1	269.6	19.5	243.3
2	Ghaziabad	Uttar Pradesh	151.0	180.3	16.3	166.5
3	Byrnihat	Assam	167.6	156.3	-7.2	162.3
4	Hanumangarh	Rajasthan	194.0	125.1	-55.1	158.1
5	Chandigarh	Chandigarh	126.7	184.4	31.3	155.3
6	Bahadurgarh	Haryana	134.5	167.7	19.8	151.2
7	Hapur	Uttar Pradesh	138.4	163.6	15.4	151.0

8	Mandideep	Madhya Pradesh	152.3	145.8	-4.5	149.3
9	Sri Ganganagar	Rajasthan	177.7	122.2	-45.4	147.8
10	Gurugram	Haryana	144.7	150.1	3.6	147.4

Week-on-Week Trends

The comparison between Week 1 and Week 2 reveals critical patterns:

- Cities in the "Very Poor" category doubled, rising from 16 to 32 in Week 2. This marked deterioration highlights the rapid onset of winter pollution conditions.
- On the positive side, cities in the "Good" and "Satisfactory" categories remained relatively stable, suggesting that certain regions were able to maintain lower pollution levels despite broader seasonal challenges.

Regions in the Indo-Gangetic Plain, including cities in Punjab, Haryana, and Uttar Pradesh, experienced the sharpest increases in pollution, driven by stubble burning and unfavourable weather conditions like lower wind speeds and temperature inversions.

State-Level Air Quality Analysis by Region (Including Northeastern States in the East)

1. Northern Region

- **Key States:** Delhi, Punjab, Haryana, Uttar Pradesh, Rajasthan.

Performance:

- **Delhi** leads as the most polluted city with an average PM_{2.5} level of **243.3 µg/m³**.
- **Punjab and Haryana** suffer from severe pollution caused by **stubble burning** and vehicular emissions.
- **Uttar Pradesh** includes cities like **Ghaziabad (180.3 µg/m³)** and **Lucknow (117.5 µg/m³)** in the "Very Poor" category.
- **Rajasthan** has variability, with cities like **Hanumangarh** heavily polluted, while others like **Sirohi** maintain moderate air quality.
- **Primary Causes:**
 - Agricultural residue burning, industrial activity, and high population density. Seasonal temperature inversions worsen pollution during winter.

2. Southern Region

- **Key States:** Tamil Nadu, Karnataka, Andhra Pradesh, Kerala.

Performance:

- **Tamil Nadu** excels with cities like **Ariyalur (15.0 $\mu\text{g}/\text{m}^3$)** and **Tirunelveli (15.3 $\mu\text{g}/\text{m}^3$)** among the cleanest.
- **Karnataka** has cities like **Raichur (17.9 $\mu\text{g}/\text{m}^3$)** and **Madikeri (18.4 $\mu\text{g}/\text{m}^3$)** in the "Good" category.
- Coastal states such as **Kerala** benefit from natural ventilation, keeping PM2.5 levels moderate.

Primary Causes: Favourable climatic conditions, better waste management practices, and lower industrial density.

3. Eastern Region (Including Northeastern States)

- **Key States:** Bihar, Odisha, West Bengal, Assam, Manipur, and others in the Northeast.

Performance:

- The **northeastern states**, especially **Manipur (Imphal: 14.2 $\mu\text{g}/\text{m}^3$)** and **Assam (Nagaon: 16.9 $\mu\text{g}/\text{m}^3$)**, show some of the cleanest air in India.
- **Bihar** struggles with poor air quality, with cities like **Patna (121.8 $\mu\text{g}/\text{m}^3$)** and **Hajipur (186.3 $\mu\text{g}/\text{m}^3$)** consistently polluted.
- **West Bengal** cities like **Kolkata** maintain moderate air quality but experience episodic spikes.
- **Odisha** demonstrates mixed results, with cities like **Keonjhar** and **Nayagarh** showing better air quality than urban centres.

Primary Causes: Northeastern states benefit from dense greenery and low population density, while states like Bihar and West Bengal face challenges from industrial emissions, poor waste management, and agricultural practices.

4. Western Region

- **Key States:** Maharashtra, Gujarat, Rajasthan, Madhya Pradesh.

Performance:

- **Maharashtra** showcases mixed results, with cities like **Sangli** maintaining moderate air quality, while others like **Nagpur** report high pollution.

- **Rajasthan** has extreme variability, with cities like **Hanumangarh** and **Ganganagar** performing poorly.
- **Madhya Pradesh** cities such as **Mandideep** face challenges from industrial activity, registering "Poor" PM2.5 levels.

Primary Causes: Industrial emissions, urbanisation, and desert conditions in Rajasthan, contribute to higher particulate matter levels.

Four Key Takeaways

Clean Air in the South and Northeast: Northeastern states like Manipur and Assam, alongside southern states like Tamil Nadu and Karnataka, lead with the cleanest air due to geographical advantages and better environmental management.

Northern India's Crisis: Punjab, Haryana, and Uttar Pradesh are severely impacted by stubble burning, industrial emissions, and meteorological factors like winter temperature inversions.

Eastern India's Duality: While northeastern states exhibit excellent air quality, states such as Bihar and West Bengal face significant challenges from industrialisation, poor monitoring, and stray incidents of stubble burning.

Western India's Mixed Results: Maharashtra and Rajasthan show both extreme pollution in industrial hubs and moderate air quality in less urbanised areas, reflecting the variability of pollution sources.

Northern states faced a confluence of challenges, including agricultural residue burning, urban emissions, and industrial activities. The onset of early winter aggravated these issues, as cooler temperatures and lower wind speeds trapped pollutants near the surface. In contrast, cities in the south and northeast benefitted from better air dispersion conditions and a lack of heavy industrial presence.

Recommendations

To address the stark air quality challenges revealed in this report, the following measures are recommended:

1. **Policy and Governance:**
 - Strengthen regulations on industrial and vehicular emissions, particularly in pollution hotspots.

- Encourage the adoption of alternatives to stubble burning through targeted subsidies and community programs.
2. **Community and Awareness Initiatives:**
 - Launch large-scale awareness campaigns on air pollution and its health impacts, particularly in urban and peri-urban areas.
 - Promote community-based monitoring initiatives to empower citizens to advocate for cleaner air.
 3. **Technological and Scientific Interventions:**
 - Enhance air quality monitoring infrastructure, especially in underrepresented areas, to provide granular and actionable data.
 - Leverage technologies like satellite monitoring to track pollution hotspots and measure progress.
 4. **Collaborative Efforts:**
 - Regional collaboration among states and an airshed approach to share best practices and address cross-border pollution challenges.
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Conclusion

This two-week analysis of PM_{2.5} levels during early winter underscores the urgency of addressing India's air quality crisis. The findings highlight regional disparities, with northern cities bearing the brunt of pollution. However, the success of southern and northeastern states demonstrates that sustained efforts and effective interventions can lead to meaningful improvements. This report aims to inform and guide stakeholders toward implementing comprehensive, data-driven strategies for cleaner air across India.

About Respirer Living Sciences



Respirer Living Sciences is a leading climate-tech startup in India, dedicated to achieving cleaner air and accelerating the transition to cleaner energy. Established in 2017, Respirer provides scientifically validated, scalable air quality monitoring devices and real-time air pollution analytics platforms. These solutions deliver accurate and actionable data to governments, industries, and citizens, empowering them to address air pollution and methane emissions effectively. Respirer's network includes over 2,500 air quality devices deployed

across more than 25 Indian cities and several international locations. The company collaborates with prestigious institutions such as IIT Kanpur and Duke University and is part of the Centre of Excellence ATMAN on Clean Air Technologies, supported by the Government of India. For more details, visit the [Respirer](#)

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ANNEXURE

State-level ranking in descending order (cleanest to polluted OR lower to higher levels of PM_{2.5})

Punjab - 0/8 cities in Good & 1/8 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Bathinda	Punjab	54.2	50.6	-7.1	52.4
2	Khanna	Punjab	80.8	93.5	13.6	86.2
3	Rupnagar	Punjab	84.3	90.2	6.5	87.2
4	Patiala	Punjab	85.7	98.5	13.0	92.1
5	Ludhiana	Punjab	86.1	98.7	12.8	92.3
6	Jalandhar	Punjab	88.8	99.0	10.3	93.9
7	Mandi Gobindgarh	Punjab	114.4	112.7	-1.5	113.6
8	Amritsar	Punjab	108.3	120.8	10.3	114.6

Chandigarh

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Chandigarh	Chandigarh	126.7	184.4	31.3	155.3

Delhi

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
281	Delhi	Delhi	217.1	269.6	19.5	243.3

Telangana - 0/1 city in Good & 1/1 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Hyderabad	Telangana	44.9	47.0	4.5	46.1

Himachal Pradesh - 0/1 city in Good & 0/1 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
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1	Baddi	Himachal Pradesh	119.6	141.4	15.4	130.5
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West Bengal - 0/7 cities in Good & 2/7 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Siliguri	West Bengal	28.9	38.5	24.9	33.6
2	Haldia	West Bengal	54.9	64.6	15.0	59.8
3	Kolkata	West Bengal	59.3	62.7	5.4	61.0
4	Barrackpore	West Bengal	66.3	84.2	21.3	75.4
5	Howrah	West Bengal	81.0	87.1	7.0	84.2
6	Asansol	West Bengal	89.0	101.5	12.3	95.2
7	Durgapur	West Bengal	87.4	105.4	17.1	96.2

Odisha - 0/16 cities in Good & 6/16 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Keonjhar	Odisha	38.1	28.1	-35.6	33.1
2	Nayagarh	Odisha	42.0	32.8	-28.0	36.5
3	Tensa	Odisha	32.2	44.0	26.8	40.0
4	Brajrajnagar	Odisha	48.4	35.9	-34.8	41.8
5	Baripada	Odisha	53.3	42.2	-26.3	47.7
6	Rairangpur	Odisha	65.2	53.0	-23.0	58.6
7	Suakati	Odisha	67.8	48.7	-39.2	60.8
8	Cuttack	Odisha	66.5	59.2	-12.3	62.9
9	Rourkela	Odisha	74.2	57.0	-30.2	64.3
10	Byasanagar	Odisha	77.1	55.9	-37.9	66.2
11	Bhubaneswar	Odisha	60.0	70.4	14.8	66.5
12	Barbil	Odisha	81.2	55.6	-46.0	68.4
13	Balasore	Odisha	75.9	61.5	-23.4	68.7
14	Bileipada	Odisha	78.9	63.2	-24.8	69.3
15	Angul	Odisha	98.3	77.4	-27.0	88.0
16	Talcher	Odisha	93.0	87.3	-6.5	90.1

Rajasthan - 0/34 cities in Good & 11/34 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Rajsamand	Rajasthan	24.2	39.0	37.9	31.5
2	Sirohi	Rajasthan	28.5	38.8	26.5	33.6
3	Barmer	Rajasthan	31.1	44.0	29.3	38.0

4	Ajmer	Rajasthan	40.6	40.1	-1.2	40.4
5	Jaisalmer	Rajasthan	32.5	50.9	36.1	41.8
6	Jhalawar	Rajasthan	43.8	53.2	17.7	48.2
7	Jalore	Rajasthan	44.4	56.6	21.6	50.6
8	Nagaur	Rajasthan	48.6	54.4	10.7	51.5
9	Pratapgarh	Rajasthan	61.1	43.9	-39.2	51.9
10	Udaipur	Rajasthan	54.5	60.4	9.8	57.4
11	Alwar	Rajasthan	65.5	51.8	-26.4	58.6
12	Bhilwara	Rajasthan	54.5	68.4	20.3	61.2
13	Dholpur	Rajasthan	78.6	44.6	-76.2	61.2
14	Dungarpur	Rajasthan	55.8	67.7	17.6	61.7
15	Pali	Rajasthan	63.7	62.4	-2.1	63.1
16	Jodhpur	Rajasthan	65.7	60.9	-7.9	63.2
17	Banswara	Rajasthan	63.2	63.8	0.9	63.5
18	Dausa	Rajasthan	81.6	49.4	-65.2	65.0
19	Bundi	Rajasthan	78.9	64.5	-22.3	71.1
20	Chittorgarh	Rajasthan	69.9	82.5	15.3	76.2
21	Baran	Rajasthan	81.7	73.5	-11.2	77.6
22	Kota	Rajasthan	92.3	77.2	-19.6	84.8
23	Tonk	Rajasthan	97.8	79.2	-23.5	86.7
24	Bharatpur	Rajasthan	107.3	70.0	-53.3	88.7
25	Sikar	Rajasthan	89.4	89.7	0.3	89.5
26	Karauli	Rajasthan	103.4	84.9	-21.8	94.4
27	Jaipur	Rajasthan	109.8	85.3	-28.7	97.5
28	Sawai Madhopur	Rajasthan	110.8	88.5	-25.2	99.1
29	Bikaner	Rajasthan	87.3	126.6	31.0	106.8
30	Jhunjhunu	Rajasthan	122.6	107.9	-13.6	115.5
31	Churu	Rajasthan	114.0	128.8	11.5	122.1
32	Bhiwadi	Rajasthan	137.6	147.5	6.7	142.4
33	Sri Ganganagar	Rajasthan	177.7	122.2	-45.4	147.8
34	Hanumangarh	Rajasthan	194.0	125.1	-55.1	158.1

Haryana - 0/24 cities in Good & 0/24 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Palwal	Haryana	72.3	73.2	1.2	72.7
2	Narnaul	Haryana	83.5	77.2	-8.2	80.2
3	Mandikhera	Haryana	84.9	80.3	-5.7	82.6
4	Ambala	Haryana	71.9	95.1	24.4	83.2
5	Karnal	Haryana	81.4	91.0	10.5	86.4
6	Yamunanagar	Haryana	93.3	99.0	5.8	96.1

7	Panipat	Haryana	83.4	110.4	24.5	96.8
8	Sirsa	Haryana	104.2	92.5	-12.6	100.2
9	Kurukshetra	Haryana	94.0	109.0	13.8	101.4
10	Manesar	Haryana	99.4	107.4	7.4	103.4
11	Ballabgarh	Haryana	96.9	114.9	15.7	105.8
12	Fatehabad	Haryana	119.1	71.0	-67.7	107.6
13	Kaithal	Haryana	96.7	121.3	20.3	109.5
14	Panchkula	Haryana	94.1	126.3	25.5	110.2
15	Faridabad	Haryana	108.2	120.3	10.1	113.8
16	Hisar	Haryana	131.7	100.5	-31.0	118.6
17	Rohtak	Haryana	105.7	133.1	20.6	119.4
18	Charkhi Dadri	Haryana	107.9	137.6	21.6	123.5
19	Dharuhera	Haryana	115.6	134.9	14.3	125.5
20	Bhiwani	Haryana	118.8	145.2	18.2	131.4
21	Jind	Haryana	121.0	154.2	21.5	137.3
22	Gurugram	Haryana	144.7	150.1	3.6	147.4
23	Bahadurgarh	Haryana	134.5	167.7	19.8	151.2
24	Sonipat	Haryana	166.4	151.6	-9.8	156.3

Uttar Pradesh - 0/20 cities in Good & 6/20 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Varanasi	Uttar Pradesh	37.3	38.5	3.1	37.9
2	Prayagraj	Uttar Pradesh	42.7	41.1	-3.9	41.9
3	Vrindavan	Uttar Pradesh	43.5	46.1	5.6	44.8
4	Bareilly	Uttar Pradesh	47.7	43.5	-9.7	45.5
5	Firozabad	Uttar Pradesh	54.6	43.2	-26.4	48.6
6	Jhansi	Uttar Pradesh	50.9	49.9	-2.0	50.4
7	Gorakhpur	Uttar Pradesh	77.1	55.8	-38.2	66.5
8	Agra	Uttar Pradesh	68.8	65.7	-4.7	67.2
9	Moradabad	Uttar Pradesh	65.3	77.4	15.6	71.1
10	Kanpur	Uttar Pradesh	73.5	82.6	11.0	77.9
11	Khurja	Uttar Pradesh	86.7	96.0	9.7	91.1
12	Lucknow	Uttar Pradesh	91.8	117.5	21.9	105.1
13	Baghpat	Uttar Pradesh	90.4	123.8	27.0	106.9
14	Bulandshahr	Uttar Pradesh	99.4	128.9	22.9	114.9
15	Muzaffarnagar	Uttar Pradesh	113.1	119.9	5.7	116.5
16	Greater Noida	Uttar Pradesh	119.4	135.3	11.8	127.3
17	Noida	Uttar Pradesh	118.8	141.2	15.9	130.2
18	Meerut	Uttar Pradesh	114.6	149.0	23.1	131.7
19	Hapur	Uttar Pradesh	138.4	163.6	15.4	151.0

20	Ghaziabad	Uttar Pradesh	151.0	180.3	16.3	166.5
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Uttarakhand - 0/3 cities in Good & 0/3 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Rishikesh	Uttarakhand	58.0	70.6	17.8	64.2
2	Kashipur	Uttarakhand	73.3	74.5	1.6	73.9
3	Dehradun	Uttarakhand	76.7	113.8	32.6	95.7

Bihar - 0/24 cities in Good & 5/24 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Arrah	Bihar	40.1	43.4	7.6	41.7
2	Manguraha	Bihar	25.7	63.7	59.7	44.1
3	Kishanganj	Bihar	33.6	63.1	46.8	48.2
4	Aurangabad_B	Bihar	59.8	53.3	-12.2	56.6
5	Motihari	Bihar	43.0	74.5	42.3	58.6
6	Sasaram	Bihar	65.6	68.7	4.5	67.1
7	Bettiah	Bihar	31.7	109.8	71.1	70.6
8	Bihar Sharif	Bihar	68.8	79.3	13.2	74.0
9	Samastipur	Bihar	52.2	89.8	41.9	74.1
10	Bhagalpur	Bihar	60.1	88.1	31.8	74.4
11	Katihar	Bihar	64.1	95.8	33.1	79.3
12	Buxar	Bihar	65.9	92.6	28.8	79.4
13	Chhapra	Bihar	73.2	90.0	18.7	80.9
14	Gaya	Bihar	79.2	86.8	8.8	83.3
15	Munger	Bihar	62.5	103.2	39.4	84.2
16	Siwan	Bihar	74.0	96.0	22.9	84.6
17	Araria	Bihar	70.5	100.1	29.6	85.6
18	Begusarai	Bihar	82.1	89.3	8.1	85.7
19	Rajgir	Bihar	79.6	96.2	17.3	88.2
20	Purnia	Bihar	76.1	99.9	23.8	88.3
21	Muzaffarpur	Bihar	88.1	101.7	13.4	95.2
22	Patna	Bihar	90.6	121.8	25.6	106.2
23	Saharsa	Bihar	76.9	167.0	54.0	121.9
24	Hajipur	Bihar	87.1	186.3	53.2	133.2

Maharashtra - 0/31 cities in Good & 8/31 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Sangli	Maharashtra	41.5	36.7	-13.1	39.2

2	Kalyan	Maharashtra	52.1	53.0	1.7	52.5
3	Akola	Maharashtra	52.6	52.6	0.0	52.6
4	Ahmednagar	Maharashtra	45.5	66.8	31.9	56.1
5	Chandrapur	Maharashtra	55.9	56.7	1.4	56.3
6	Solapur	Maharashtra	58.0	54.6	-6.2	56.4
7	Amravati	Maharashtra	64.1	50.5	-26.9	57.3
8	Aurangabad_M	Maharashtra	59.3	59.3	0.0	59.3
9	Pune	Maharashtra	58.2	62.7	7.2	60.3
10	Mumbai	Maharashtra	62.9	61.6	-2.1	62.2
11	Belapur	Maharashtra	63.1	64.7	2.5	63.9
12	Navi Mumbai	Maharashtra	67.8	62.0	-9.4	67.1
13	Virar	Maharashtra	65.0	72.9	10.8	69.0
14	Thane	Maharashtra	74.8	68.4	-9.4	69.6
15	Boisar	Maharashtra	68.4	74.3	7.9	71.3
16	Latur	Maharashtra	74.5	74.1	-0.5	74.3
17	Nashik	Maharashtra	78.7	78.0	-0.9	78.2
18	Jalna	Maharashtra	75.7	84.8	10.7	80.3
19	Kolhapur	Maharashtra	83.8	77.7	-7.9	80.6
20	Mira-Bhayandar	Maharashtra	73.8	88.1	16.2	81.1
21	Nagpur	Maharashtra	89.8	73.5	-22.2	81.7
22	Ulhasnagar	Maharashtra	75.6	88.0	14.1	81.9
23	Nanded	Maharashtra	95.7	70.4	-35.9	83.2
24	Mahad	Maharashtra	88.3	83.0	-6.4	85.7
25	Bhiwandi	Maharashtra	83.6	88.8	5.9	86.2
26	Badlapur	Maharashtra	85.7	89.6	4.4	87.6
27	Dhule	Maharashtra	92.6	84.4	-9.7	88.6
28	Pimpri-Chinchwad	Maharashtra	92.3	93.5	1.3	93.0
29	Parbhani	Maharashtra	96.9	99.8	2.9	98.2
30	Jalgaon	Maharashtra	107.5	95.7	-12.3	101.6
31	Malegaon	Maharashtra	119.0	91.6	-29.9	105.3

Karnataka - 16/27 cities in Good & 11/27 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Raichur	Karnataka	18.7	16.9	-10.7	17.9
2	Madikeri	Karnataka	20.2	16.5	-22.4	18.4
3	Chamarajanagar	Karnataka	20.0	18.0	-11.1	19.0

4	Shivamogga	Karnataka	20.2	18.5	-9.2	19.4
5	Chikkamagaluru	Karnataka	21.6	18.0	-20.0	19.9
6	Mysuru	Karnataka	19.9	20.0	0.5	19.9
7	Gadag	Karnataka	21.1	19.4	-8.8	20.3
8	Koppal	Karnataka	21.9	21.2	-3.3	21.5
9	Mangalore	Karnataka	17.7	26.5	33.2	22.1
10	Vijayapura	Karnataka	22.3	22.1	-0.9	22.2
11	Bagalkot	Karnataka	24.9	22.1	-12.7	23.5
12	Kolar	Karnataka	17.0	33.4	49.1	25.7
13	Chikkaballapur	Karnataka	29.1	23.4	-24.4	26.3
14	Kalaburagi	Karnataka	27.0	28.9	6.6	28.0
15	Karwar	Karnataka	29.6	27.8	-6.5	28.8
16	Ramanagara	Karnataka	32.1	27.2	-18.0	29.7
17	Hassan	Karnataka	29.9	30.3	1.3	30.1
18	Belgaum	Karnataka	30.5	32.1	5.0	31.2
19	Bengaluru	Karnataka	35.0	29.0	-20.7	32.0
20	Udupi	Karnataka	30.7	34.2	10.2	32.3
21	Davanagere	Karnataka	35.1	32.0	-9.7	33.5
22	Dharwad	Karnataka	37.5	32.5	-15.4	35.1
23	Hubballi	Karnataka	43.1	35.4	-21.8	38.9
24	Tumakuru	Karnataka	52.8	48.7	-8.4	50.9
25	Bidar	Karnataka	47.8	57.2	16.4	51.4
26	Yadgir	Karnataka	48.0	57.2	16.1	52.5
27	Haveri	Karnataka	54.5	51.1	-6.7	52.7

Andhra Pradesh – 2/8 cities in Good & 6/8 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Anantapur	Andhra Pradesh	22.6	19.9	-13.6	21.3
2	Tirupati	Andhra Pradesh	30.8	27.6	-11.6	29.2
3	Vijayawada	Andhra Pradesh	33.0	35.5	7.0	34.4
4	Kadapa	Andhra Pradesh	44.2	29.0	-52.4	35.4
5	Chittoor	Andhra Pradesh	38.9	35.6	-9.3	37.2

6	Amaravati	Andhra Pradesh	40.4	44.4	9.0	42.3
7	Rajamahendravaram	Andhra Pradesh	41.4	48.1	13.9	44.8
8	Visakhapatnam	Andhra Pradesh	52.8	59.2	10.8	56.0

Kerala – 1/4 cities in Good & 3/4 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Thrissur	Kerala	25.9	26.0	0.4	25.9
2	Kollam	Kerala	40.1	33.8	-18.6	36.4
3	Eloor	Kerala	36.0	40.5	11.1	38.8
4	Thiruvananthapuram	Kerala	79.1	24.5	-222.9	47.1

Assam – 4/6 cities in Good & 1/6 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Nagaon	Assam	19.3	14.3	-35.0	16.9
2	Silchar	Assam	21.3	26.4	19.3	23.9
3	Nalbari	Assam	21.1	26.9	21.6	24.0
4	Sivasagar	Assam	28.9	27.0	-7.0	27.9
5	Guwahati	Assam	42.2	44.9	6.0	43.4
6	Byrnihat	Assam	167.6	156.3	-7.2	162.3

Tamil Nadu – 15/24 cities in Good & 8/24 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Ariyalur	Tamil Nadu	15.7	14.3	-9.8	15.0
2	Tirunelveli	Tamil Nadu	16.1	14.5	-11.0	15.3
3	Palkalaiperur	Tamil Nadu	19.9	16.2	-22.8	17.8
4	Tiruchirappalli	Tamil Nadu	18.7	18.1	-3.3	18.4
5	Thanjavur	Tamil Nadu	19.0	18.9	-0.5	19.0
6	Tirupur	Tamil Nadu	17.2	24.1	28.6	20.8
7	Madurai	Tamil Nadu	23.0	20.7	-11.1	21.8
8	Ramanathapuram	Tamil Nadu	24.0	22.7	-5.7	23.4
9	Nagapattinam	Tamil Nadu	23.5	25.5	7.8	24.5
10	Karur	Tamil Nadu	26.5	27.2	2.6	26.9
11	Cuddalore	Tamil Nadu	25.8	28.3	8.8	27.2

12	Ooty	Tamil Nadu	29.1	25.1	-15.9	27.4
13	Chennai	Tamil Nadu	30.0	26.1	-14.9	28.0
14	Ranipet	Tamil Nadu	35.1	21.6	-62.5	29.3
15	Dindigul	Tamil Nadu	29.9	29.5	-1.4	29.7
16	Perundurai	Tamil Nadu	28.9	33.0	12.4	30.9
17	Virudhunagar	Tamil Nadu	29.6	32.8	9.8	31.2
18	Pudukottai	Tamil Nadu	30.0	33.4	10.2	31.7
19	Salem	Tamil Nadu	30.5	42.8	28.7	32.7
20	Vellore	Tamil Nadu	34.1	31.9	-6.9	33.0
21	Coimbatore	Tamil Nadu	36.7	32.4	-13.3	34.6
22	Kanchipuram	Tamil Nadu	43.0	26.7	-61.0	34.9
23	Chengalpattu	Tamil Nadu	40.4	37.3	-8.3	39.0
24	Gummidipoondi	Tamil Nadu	60.7	64.4	5.7	62.4

Chhattisgarh – 1/8 city in Good & 7/8 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Korba	Chhattisgarh	29.6	20.8	-42.3	26.4
2	Tumidih	Chhattisgarh	62.6	32.2	-94.4	35.0
3	Chhal	Chhattisgarh	47.7	30.5	-56.4	39.1
4	Kunjemura	Chhattisgarh	48.2	31.0	-55.5	40.3
5	Milupara	Chhattisgarh	51.8	34.3	-51.0	42.8
6	Raipur	Chhattisgarh	44.7	42.2	-5.9	43.6
7	Bilaspur	Chhattisgarh	46.5	43.6	-6.7	45.1
8	Bhilai	Chhattisgarh	58.7	58.9	0.3	58.8

Madhya Pradesh – 1/15 city in Good & 3/15 cities in Satisfactory category

Rank	City	State	W1 (3-9 Nov)	W2 (10-16 Nov)	% Change (W1/W2)	W1&2 (3-16 Nov)
1	Satna	Madhya Pradesh	21.0	21.0	0.0	21.0
2	Damoh	Madhya Pradesh	29.0	38.0	23.7	33.3
3	Maihar	Madhya Pradesh	45.4	27.5	-65.1	36.4
4	Sagar	Madhya Pradesh	58.0	50.7	-14.4	54.5
5	Ratlam	Madhya Pradesh	62.4	65.7	5.0	64.1
6	Pithampur	Madhya Pradesh	74.2	61.3	-21.0	67.7

7	Dewas	Madhya Pradesh	71.8	67.1	-7.0	69.4
8	Indore	Madhya Pradesh	68.3	69.3	1.4	70.3
9	Katni	Madhya Pradesh	65.4	75.4	13.3	70.4
10	Jabalpur	Madhya Pradesh	84.5	68.3	-23.7	76.8
11	Ujjain	Madhya Pradesh	72.3	107.9	33.0	90.1
12	Gwalior	Madhya Pradesh	98.4	90.4	-8.8	94.3
13	Bhopal	Madhya Pradesh	99.9	108.0	7.5	103.9
14	Singrauli	Madhya Pradesh	129.2	119.9	-7.8	124.5
15	Mandideep	Madhya Pradesh	152.3	145.8	-4.5	149.3