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**Know your city
and what you breathe**

18-11-2025



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Air Pollution - What it Looks Like?



**AQI in Thane is 1.01 times
Above than in Maharashtra**

Source:

1) TOI, Hindustan Times

2) <https://www.aqi.in/in/dashboard/india/maharashtra/thane>

Study Area

City Demographics

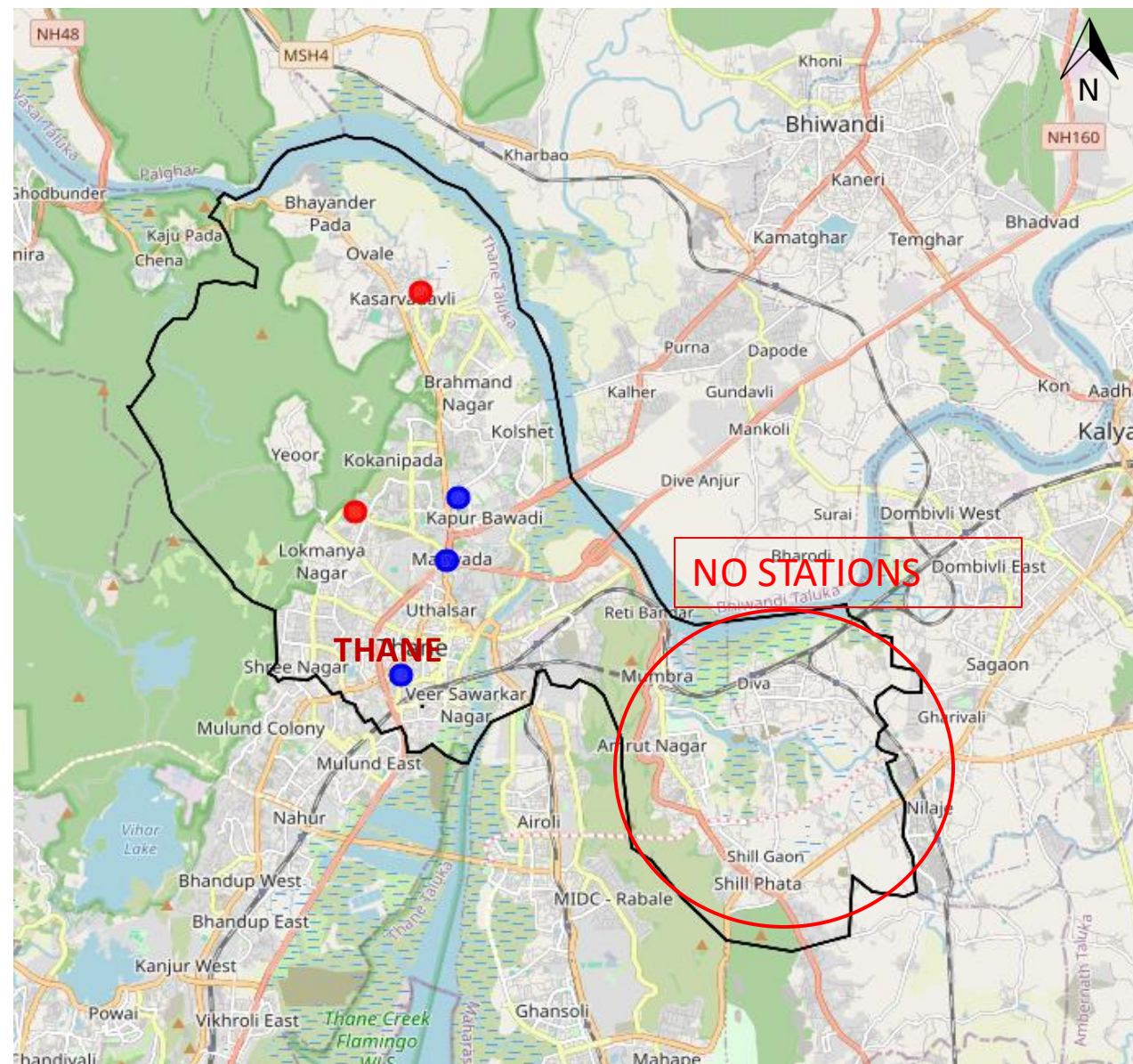
Area - 52.52 KM²

Population – 24.31 Lakhs

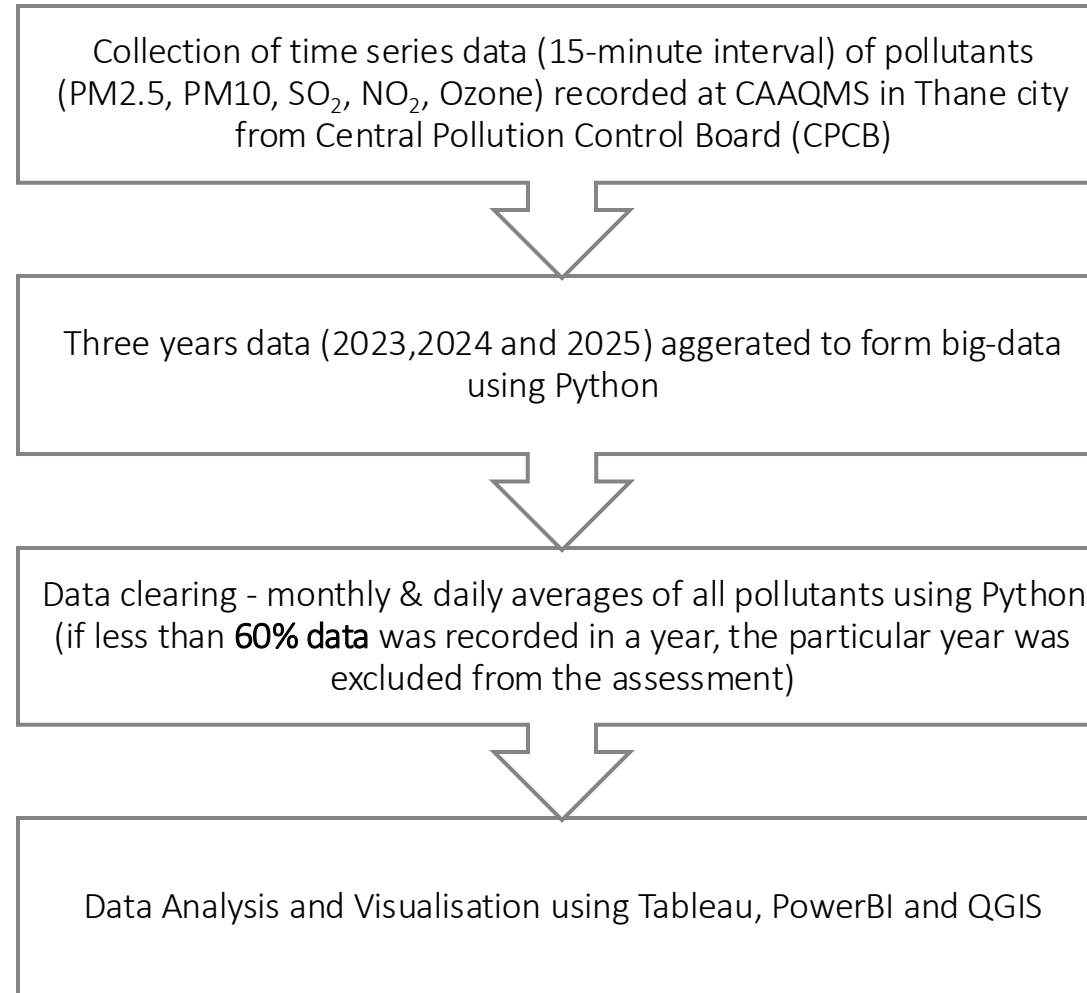
Required no of stations

	CAAQMS	Manual	Total
Available	2	3	5
Required	5	3	8

- Manual Monitoring Stations
- Continuous Monitoring Stations



Approach - Data Cleaning



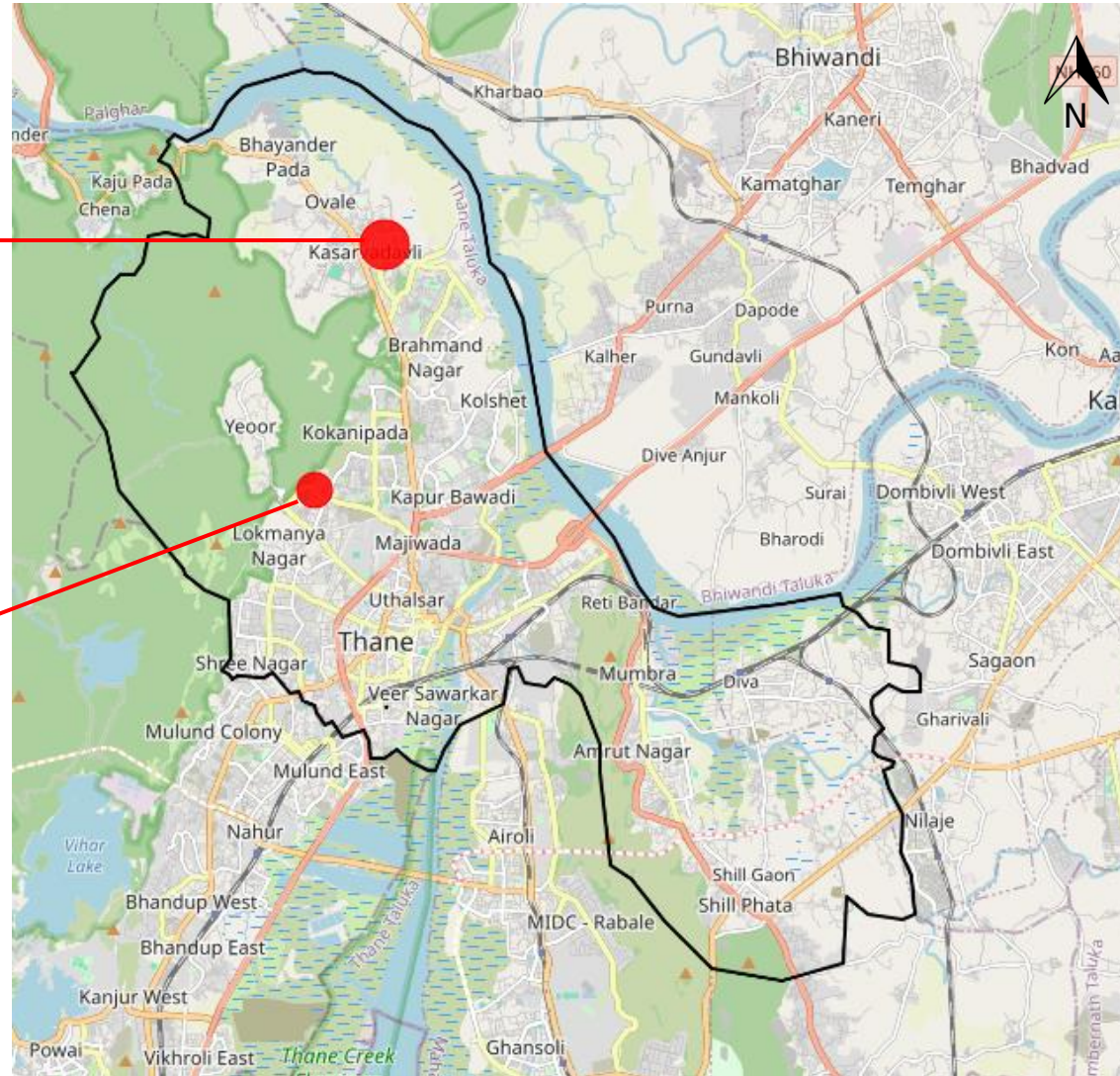
Results – Annual Average 2024

Kasarvadavali

PM10 - 96.8 $\mu\text{g}/\text{m}^3$
PM2.5 - 42.3 $\mu\text{g}/\text{m}^3$

Upvan Fort

PM10 - 79.0 $\mu\text{g}/\text{m}^3$
PM2.5 - 38.8 $\mu\text{g}/\text{m}^3$

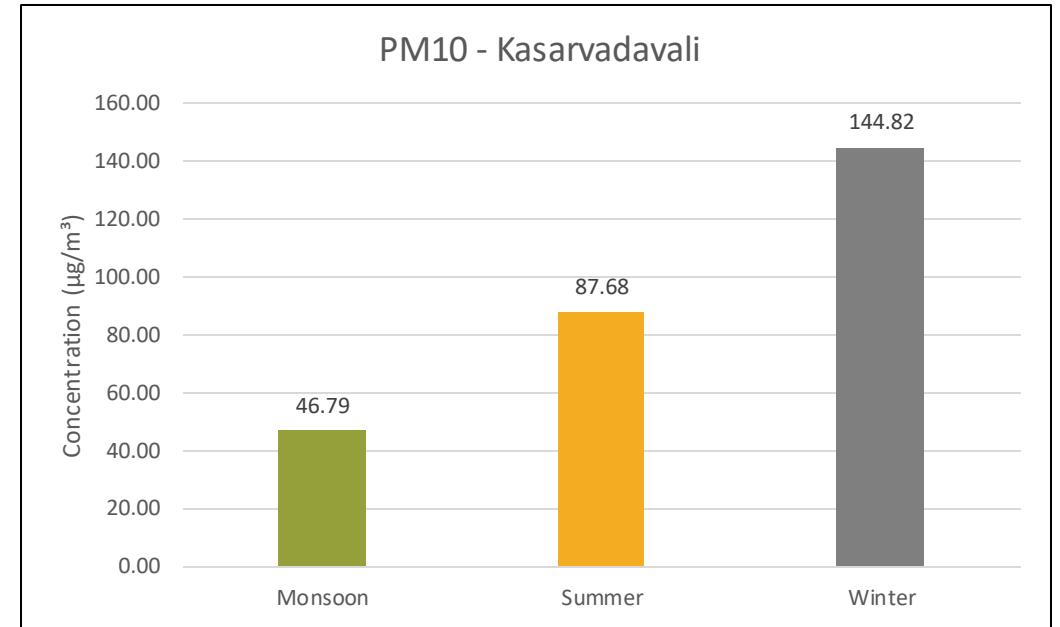
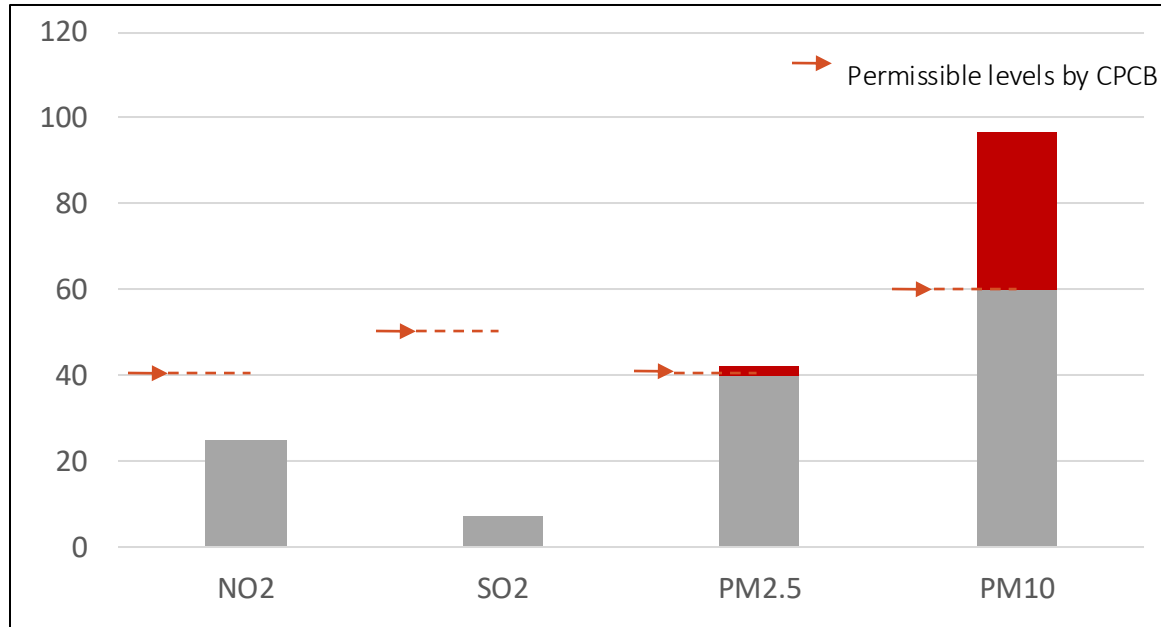


Kasarvadavali

PM10 - 1.23
PM2.5 - 1.09

Kasarvadavali - Annual Avg Concentration

Pollutant concentration 2024 ($\mu\text{g}/\text{m}^3$)

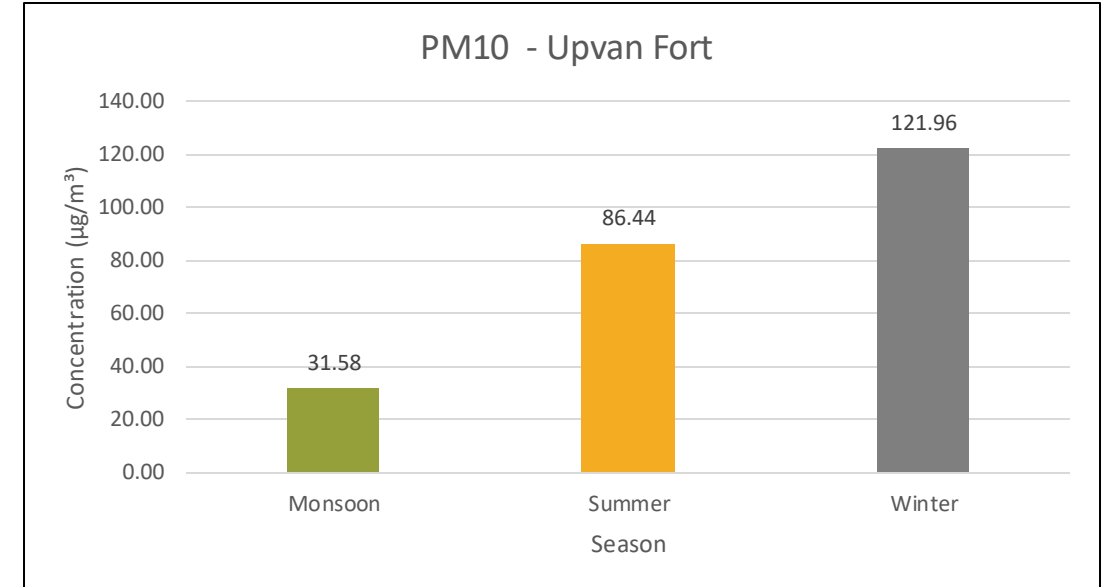
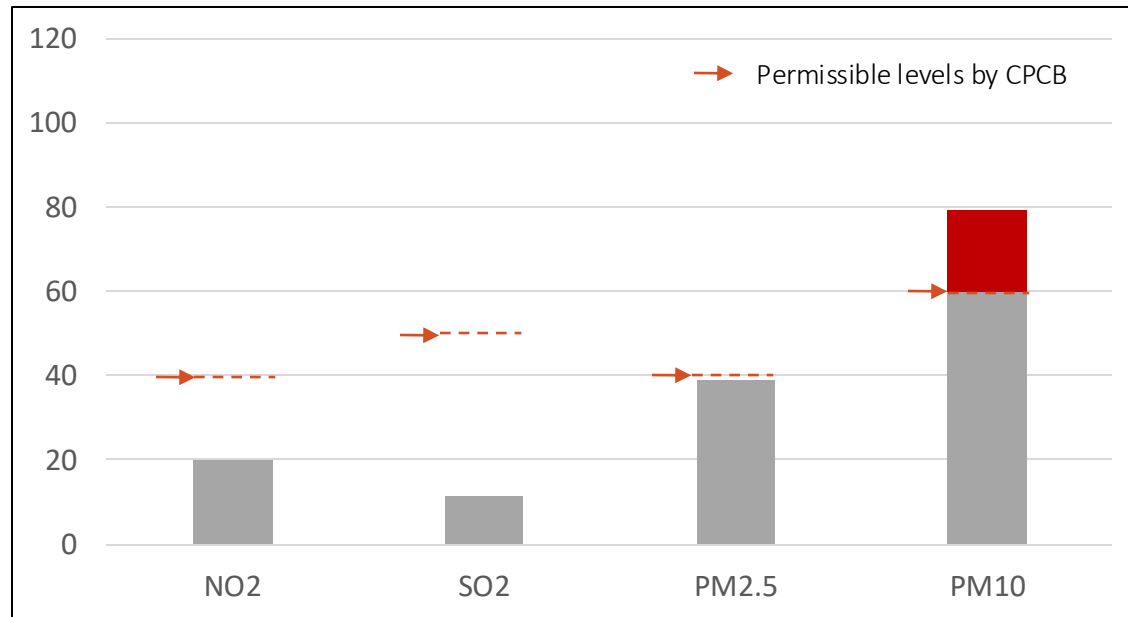


The annual PM_{2.5} level ($42.3 \mu\text{g}/\text{m}^3$) exceeded the CPCB standard by 1.1 times, and PM₁₀ ($96.8 \mu\text{g}/\text{m}^3$) was found to be 1.6 times above the CPCB standard

NO₂ ($25.07 \mu\text{g}/\text{m}^3$) and SO₂ ($7.33 \mu\text{g}/\text{m}^3$) remained well within the prescribed standards

Upvan Fort – Annual Avg. Concentration

Pollutant concentration 2024 ($\mu\text{g}/\text{m}^3$)

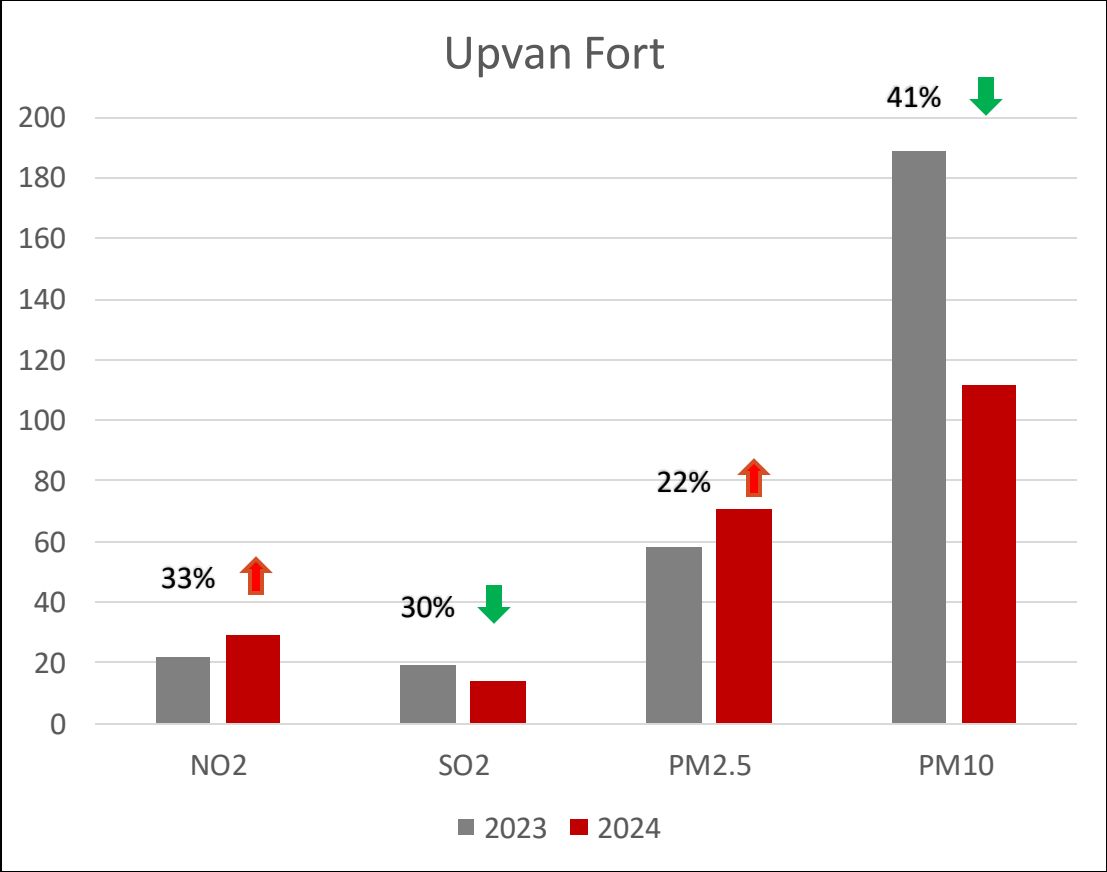
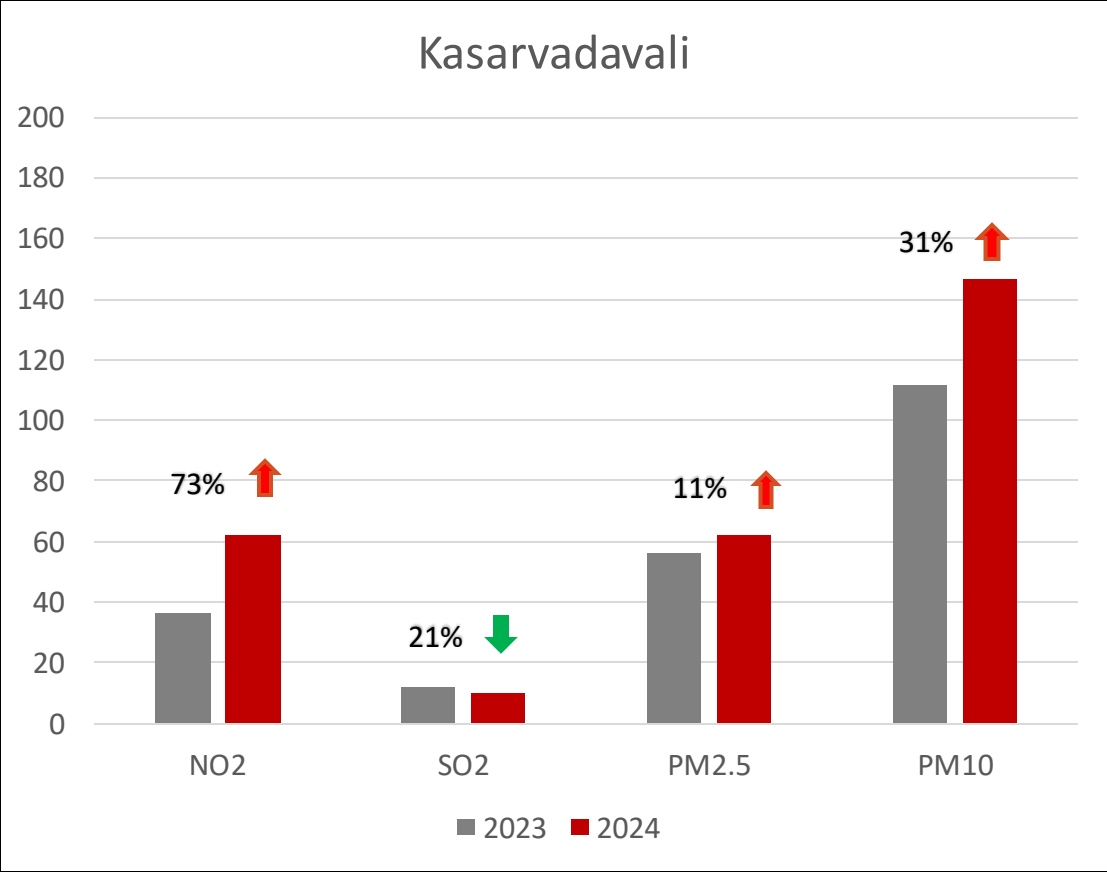


The annual PM_{2.5} concentration ($39 \mu\text{g}/\text{m}^3$) was within the CPCB limit of $40 \mu\text{g}/\text{m}^3$, while PM₁₀ ($79.2 \mu\text{g}/\text{m}^3$) was about 1.3 times higher than the standard of $60 \mu\text{g}/\text{m}^3$.

NO₂ ($20.14 \mu\text{g}/\text{m}^3$) and SO₂ ($11.64 \mu\text{g}/\text{m}^3$) concentrations were well within the permissible limits of $40 \mu\text{g}/\text{m}^3$ and $50 \mu\text{g}/\text{m}^3$, respectively.

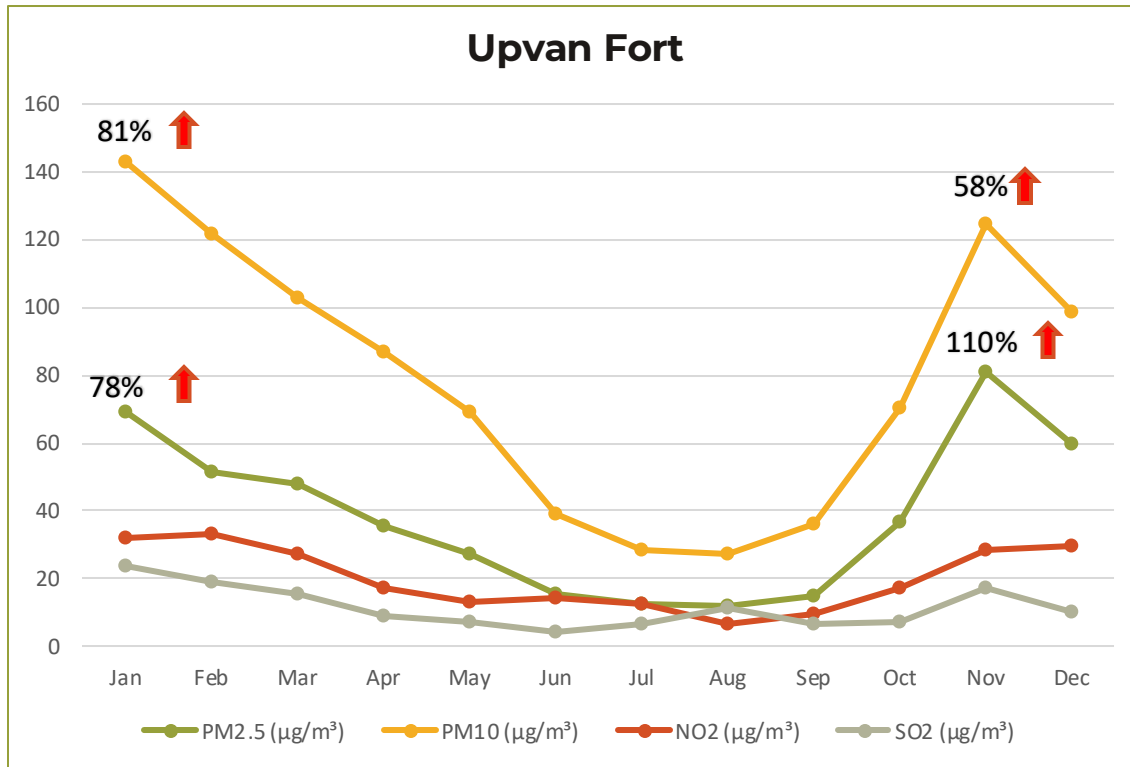
Winter Season Comparison (Nov-Dec)

Average pollutant concentration 2023 vs 2024 ($\mu\text{g}/\text{m}^3$)

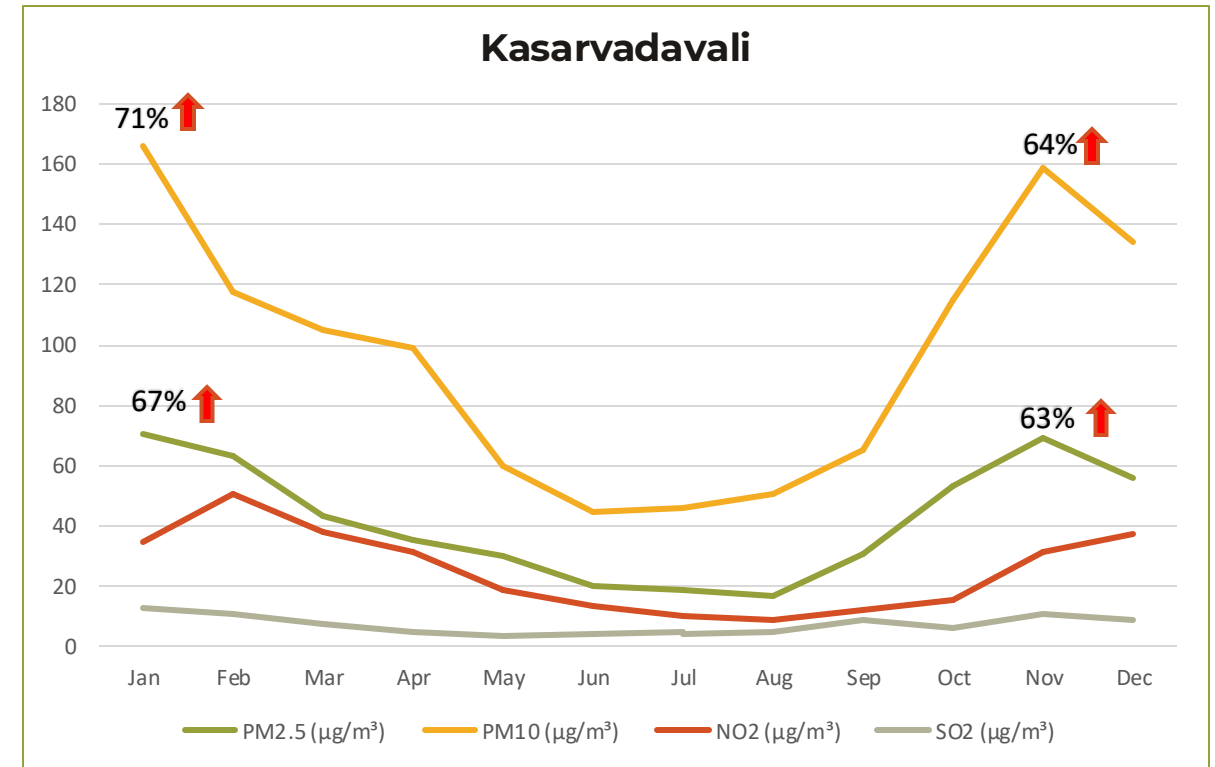


Monthly Average Trends

PM_{2.5} levels declined by 70–75% and PM₁₀ by 67%–75% from winter to monsoon, reflecting strong seasonal variation and improved air quality during the rainy season.



Winter months (December–January) showed the highest particulate levels, averaging ~70 µg/m³ for PM_{2.5} and ~122 µg/m³ for PM₁₀.



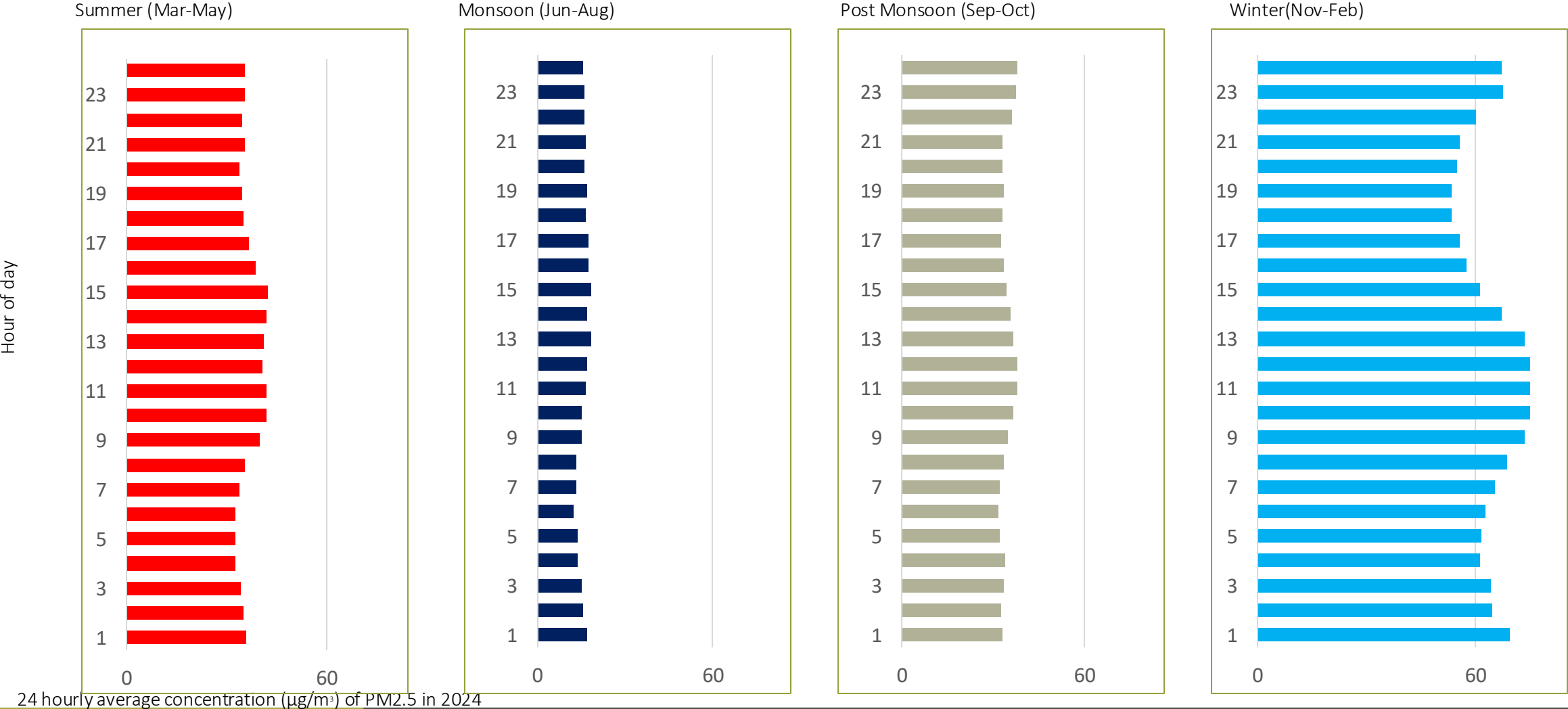
Winter months (December–January) showed the highest particulate levels, averaging ~66 µg/m³ for PM_{2.5} and ~154 µg/m³ for PM₁₀.

Hourly Trends (PM10)

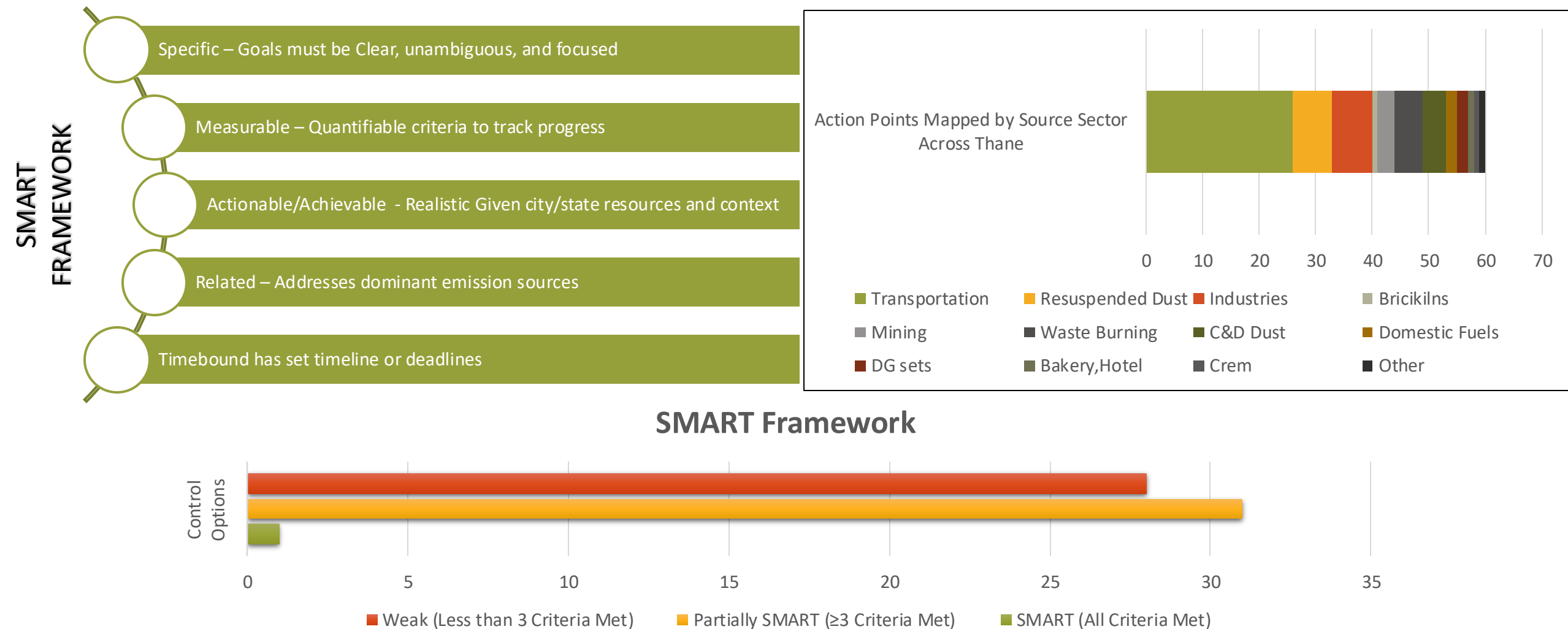


24 hourly average concentration ($\mu\text{g}/\text{m}^3$) of PM10 in 2024

Hourly Trends (PM2.5)



SMART Analysis – Thane Clean Air Action Plan



Key Highlights

- No data available from 2018 to 2023
- Though the avg PM2.5 concentration stayed closer to the NAAQMS, the avg PM10 in 2024 was **1.3 and 1.5 times above the annual average standard of 60 µg/m3** at stations Upvan fort and Kasarvadavali respectively
- There are no significant data to compare annual average, but the winter trend shows a **slight increase in both PM10 and PM2.5 Pollution levels**
- Over half of the actions listed in the Clean Air Action Plan meet the SMART criteria, **but fewer than 3 percent satisfy all five conditions**, which weakens on-ground implementation.