Policy Brief - Is our future getting blurry because of Air Pollution?

Summary

In a conceivable future, our planet's once vibrant colors fade beneath a hazy shroud, a consequence of pervasive air pollution. From factory emissions to vehicular exhaust, a toxic blend pervades the air, disregarding borders and threatening global well-being. Its impact extends beyond respiratory issues, causing cardiovascular diseases, hampering child development, and disrupting ecosystems. The economic toll is immense. Yet, amidst this crisis, there is hope. This brief urges collective action from policymakers, businesses, and individuals. By embracing innovative solutions and robust policies, we can confront air pollution, rejuvenate our skies, and ensure a healthier future for generations to come.

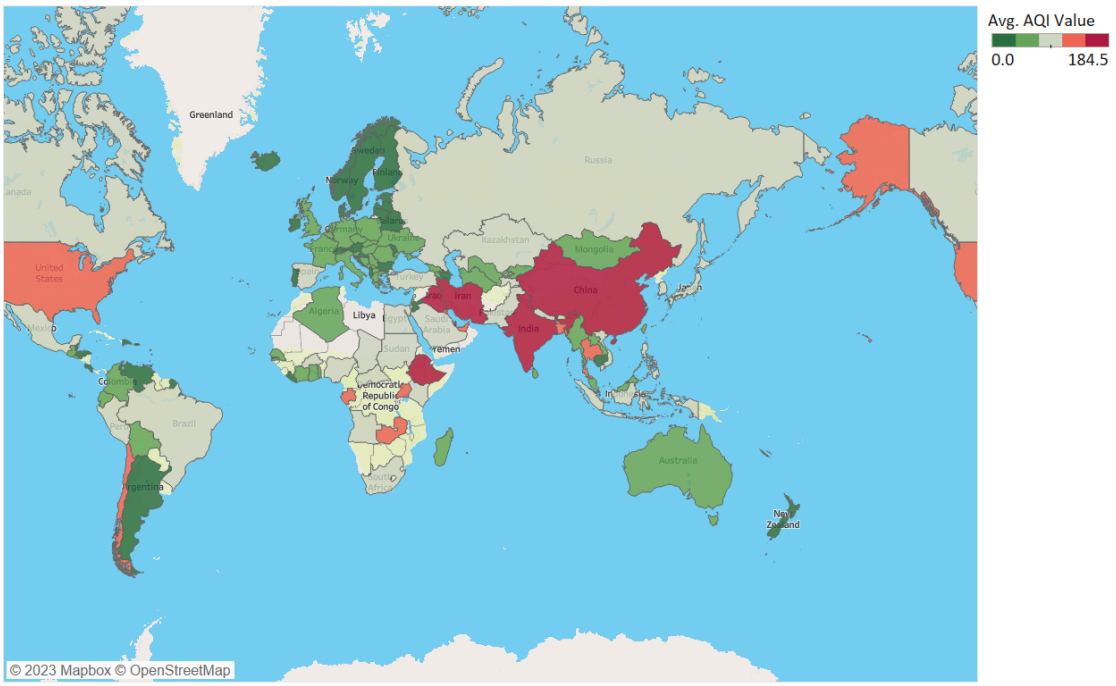
Air Quality is Degrading

According to Wikipedia, The 2019–20 Australian bushfire season, known as Black Summer, stands as a stark reminder of the interconnectedness between environmental disasters and the exacerbation of air pollution. The destruction of over 3,000 buildings and vast landscapes contributed to hazardous air quality, reaching unprecedented levels across southern and eastern states. Satellite data estimated carbon emissions from the fires at 715 million tons, surpassing Australia's normal annual emissions by 80%. AQI from the ranges in the value between 0 to 300+. Presently, the AQI of the Asian continent is at an alarming rate i.e. greater than 100 or 150 which makes air toxic to breathe through. For Instance, the current AQI of countries like China, India, Iran, and Iraq is at an all-time high and is affecting the health of people in the countries.

AQI Color	Level of Concern	AQI Value	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301+	Health warning of emergency conditions: everyone is more likely to be affected.

The Air Quality Index from gaspgroup.org

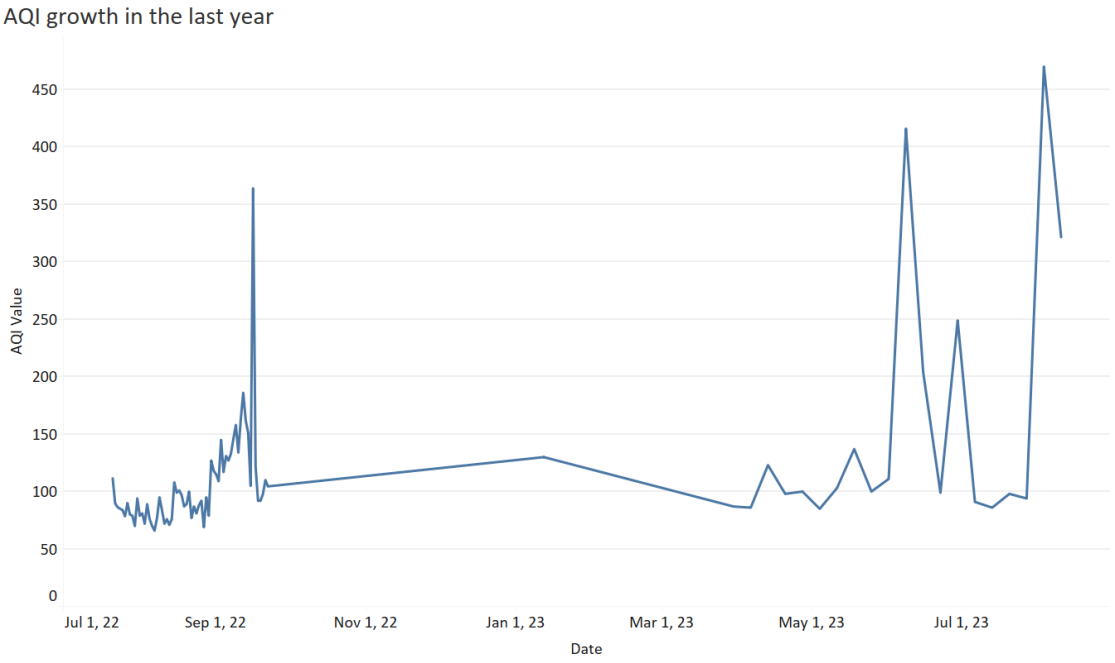
Policy Brief - Is our future getting blurry because of Air Pollution?



Map based on Longitude (generated) and Latitude (generated). Color shows average of AQI Value. Details are shown for Country.

Current AQI of the world

Is the United States safe with these environmental changes?



The trend of average of AQI Value for Date (copy). The data is filtered on Country, which keeps United States of America.

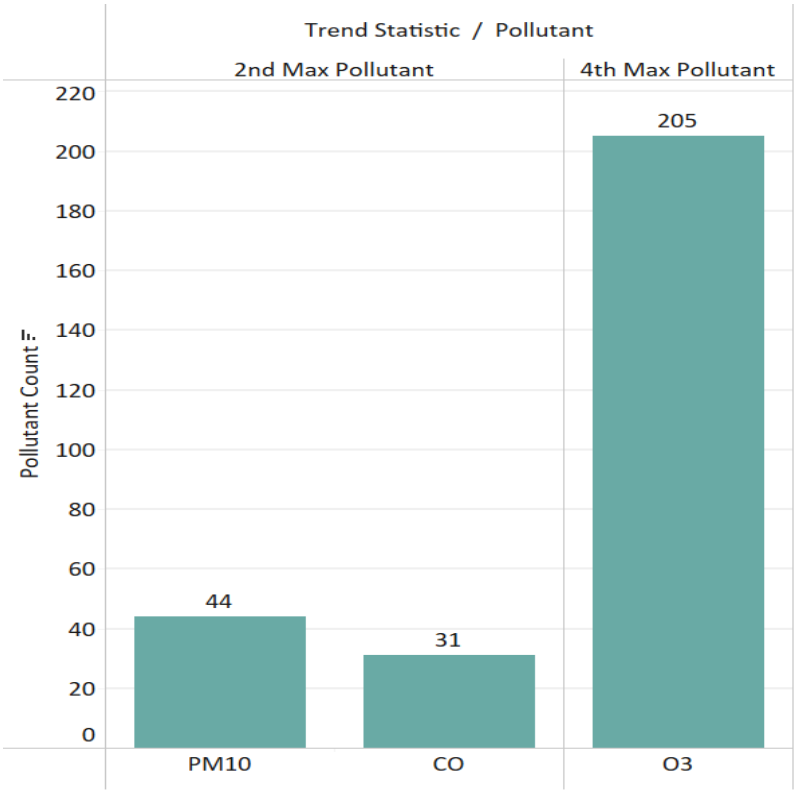
Spikes in the AQI of the United States

The answer to that question is not for long. The US has a moderate AQI section in the world. According to the American Lung Association, climate change is one of the key contributing factors to the rise of air pollutants in the air. Heat, drought, and wildfires are increasing the risk to millions of people by causing high ozone days and spikes in particle pollution, presenting challenges to nationwide efforts to address air quality.

Policy Brief - Is our future getting blurry because of Air Pollution?

Thus, increasing air pollution. However, we cannot rule out the successes of the Clean Air Act, as emissions from transportation, power plants, and manufacturing have been reduced as compared to past times.

Policy Recommendations and Solutions



Particulate Matter and Ozone are the primary pollutant in the air

Regardless any community can experience days with unhealthy levels of air pollution. We can take some steps as an individual or as a society to reduce our carbon footprint in the country and take precautions beforehand for our health.

Individual action includes:

1. Staying informed about local air quality by checking color-coded forecasts at airnow.gov and adjusting outdoor activities when pollution levels are high.
2. If residing in a fire-prone area, explore N-95 mask usage and create a clean room indoors using resources at Lung.org/wildfire.
3. Minimize personal contributions to air pollution by favoring walking, biking, and public transit, conserving electricity, and avoiding burning leaves, trash, or wood.
4. Explore tax incentives under the Inflation Reduction Act of 2022 for transitioning to zero-emission vehicles or upgrading home appliances to efficient, zero-emission options like induction stoves or heat pumps.

Policy Brief - Is our future getting blurry because of Air Pollution?

Similarly, the government could reinforce and establish purchasing goals for renewable, non-combustion electricity, purchasing zero-emission fleet vehicles, Adopting a climate action plan

References

1. Azmine Toushik Wasi, & AQICN. (2022). AQI - Air Quality Index [Data set]. Kaggle. https://doi.org/10.34740/KAGGLE/DS/2354989
2. Jayanth.S. (2023). Air Quality Changes in The US [Data set]. Kaggle. https://doi.org/10.34740/KAGGLE/DS/3988996
3. Bidgee, & Brosephj00. (2023, November 29). 2019–20 Australian bushfire season. Wikipedia. https://en.wikipedia.org/wiki/2019%E2%80%9320_Australian_bushfire_season
4. GASP. (2023, October 9). *Alabama's air quality*. https://gaspgroup.org/air-quality/?gad_source=1&gclid=CjwKCAiAg9urBhB_EiwAgw88mR7sMUmm48VVst3SMP0NBbb7qR4KHbwfHOHOqg5x5Q6zV7yrX4XltxoCnuAQAvD_BwE
5. American Lung Association. (2023, October 9). *Key findings: State of the Air*. State of the Air | American Lung Association. https://www.lung.org/research/sota/key-findings.

Author

Pavan Agarwal is a graduate student at the University of Wisconsin Madison. He is also a board member of the WISA (Wisconsin International Student Association) club at the campus and a helper in the Data Science Club at UW Madison.