



## Short Communication

## Worsening situation of smog in Pakistan: A tale of three cities

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## A B S T R A C T

Lahore, Faisalabad and Gujranwala, the most populous and polluted cities of Punjab, are facing the worsening issue of smog which returns every winter with a greater intensity. Major contributing factors are immense traffic pollution, crop burning and industrialization. These have led to major health issues including lungs, eyes, skin and heart problems. Although the government has taken some measures to mitigate these dangerous effects of smog but they have proven to be of little significance. Major efforts are still needed and public cooperation will play the most significant role in combating this issue. We aim to highlight this alarming situation to the relevant authorities so that the true gravity of this problem can be understood and anti-smog efforts can be accelerated.

## Dear Editor,

Pakistan is ranked number fourth in the most populous countries in Asia. In Pakistan, two-third of its population resides in the province of Punjab. In Punjab, three of the most populated cities are Lahore, Faisalabad and Gujranwala. Besides over-population, another unfortunate resemblance between these three megacities is their abysmal air quality. According to recent data, the Air Quality Index (AQI) in certain areas of Lahore has frequently exceeded  $400 \mu\text{g}/\text{m}^3$  in the month of November 2021 while the safe AQI value is considered below  $50 \mu\text{g}/\text{m}^3$  [1]. The major reason for this deteriorated air quality in winter months is smog.

Crop burning, over enthusiastic industrialization and urbanization, increased number of vehicles on road combined with poor fuel quality, brick kilns and deforestation are among the leading causes of air pollution in these three cities. The colder temperatures in initial months of winters lead to smog formation which blankets the major cities of Punjab [2]. Among these cities, Faisalabad and Gujranwala are the industrial hubs of Punjab whereas Lahore faces the issue of unchecked

urbanization.

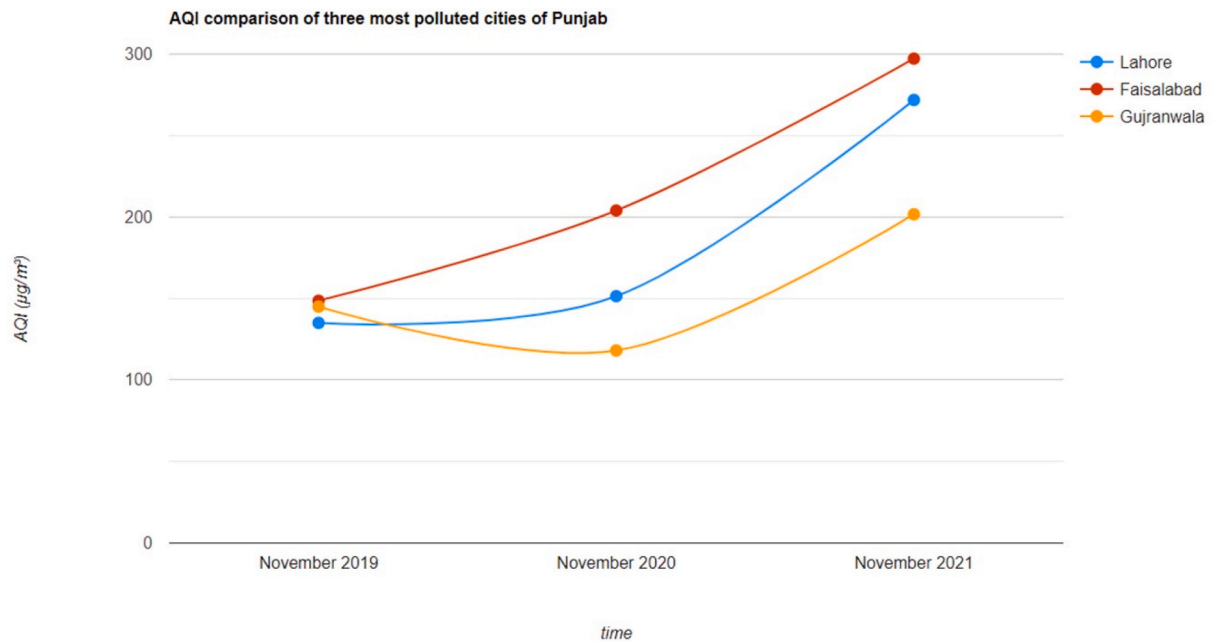
Smog is responsible for many serious health issues including respiratory problems such as asthma exacerbation, coughing, burning throat and chest irritation and chronic bronchitis. Besides these breathing problems, smog also causes eye, cardiac and skin manifestations [3].

Particular Matter 2.5 (PM 2.5) is a component in smog which is considered to be the major health hazard. It can pass through the airways and settle down in the lungs causing many pulmonary pathologies. It is the same component which reduces visibility and causes "haziness" seen in smog [4].

IQAir is an air quality control company which reports real time air pollution levels throughout the world. According to recent IQAir reports (November 2021), air quality data of Faisalabad, Lahore and Gujranwala is  $297.2 \mu\text{g}/\text{m}^3$ ,  $271.8 \mu\text{g}/\text{m}^3$  and  $201.6 \mu\text{g}/\text{m}^3$  respectively. This level of air pollution far exceeds the limit considered safe for humans [5]. AQI comparison of these three cities in the month of November (2019–2021) is shown in the graph 1.

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The Government of Punjab has taken some helpful steps to counter the toxic effects of this air pollution. Public transport projects such as Metro bus, Orange line train and Speedo bus have been launched in an effort to reduce traffic pollution [2]. Reforestation is also a top priority in current government's anti-smog campaign. Crop burning has also been banned and heavy fines have been imposed on the culprits [1].

However, these efforts have not been sufficient to stop or even slow down the rapid rise in smog and air pollution. A lot more relevant measures need to be taken to reach the safer air quality goals such as reduced fossil fuels dependence and moving towards renewable energy, controlled urbanization, stricter emission standards for vehicles, improvement of fuel quality and shifting of the industry away from the cities. None of this can be achieved without public cooperation. Electronic and print media can play a pivotal role in public education and awareness. Until these measures are taken and desired goals are achieved, the public of these three cities will continue to suffer a death by thousand cuts.

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#### Registration of Research Studies

Not required.

#### Guarantor

Muhammad Fawad Ashraf.

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