

The Social and Economic Burden of Smog in Pakistan

Editorial

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Smog has reached unhealthy levels as per the US Consulate readings earlier last month.^[1] The thick blanket of black smog engulfed Lahore, leading to residents gasping for air and complaining of eye and throat symptoms.

Pakistani authorities do not publish any real-time data on air quality data; all data comes from the US State Department and non-government sensors. The air quality worsens from October to February.

Lahore became the second most polluted city in the world that led to Pakistan's "smog season" the most ill-impacting for children and exposed adults too. Pakistan air pollution has an annual PM 2.5 average of 74.3 $\mu\text{g}/\text{m}^3$.^[2] Smog has become a fifth season in highly polluted areas like Lahore and Peshawar.

These densely polluted areas are under threat due to the lack of action taken towards prevention. Diesel emissions, coal combustion, crop burning, unregulated industrial emissions, and two-stroke vehicles are primary causes. Contrary to current beliefs by the Punjab Environment Department, Indian Punjab farmers are the primary contributing factor. However, unregulated fuel emissions, particularly in steel re-rolling mills that use plastic waste materials, are permanent contributors to the smog epidemic.

More than 5.88% of GDP (\$47.8 billion) is the estimated economic burden of air pollution in Pakistan.^[3] Critical analysis of social and economic factors is necessary.

WHO IS MOST VULNERABLE TO RISKS FROM SMOG?

Low to middle-income households are most vulnerable to long-middle term effects of smog. Families who have few earning members that engage in strenuous outdoor activities are likely to face defects. Labourers may likely suffer from smog-related health effects if these trends continue.

Active children are exposed to hazardous levels of smog. Children amount to 35% of the population in Pakistan.^[4] They are prone to asthma and other respiratory ailments that may reduce the quality of

life. Individuals with respiratory diseases are vulnerable to the effects of ozone are sensitive to such drastic changes in air quality in the past few years.

The Ministry of Finance states that the working population in Pakistan is 110 million, which is 60% of the entire population.^[5] Around 135,000 deaths per annum are due to the residual air pollution that makes it the leading cause of morbidity and mortality in Pakistan. Smog is a public health emergency that threatens to reduce life expectancy among residents.

SOCIAL REPERCUSSIONS OF SMOG

Earning the status of a public health emergency, increased air pollution directly leads to higher hospital admission rates. Visiting tertiary care hospitals like Ganga Ram Hospital, Lahore confirms trends. Adult and pediatric wards highlight a rise in patients undergoing respiratory problems along with throat and eye irritation.

Four-year-olds are admitted for emergency care due to excessive outdoor exposure timings. Children are advised to stay indoors and wear anti-pollution masks. From security guards to manual labourers working on busy streets around Lahore, they are risking permanent damage to their lungs.

Earning members of low-income households are choking on smog. With 11 million complains of burning eyes and headache, this winter has hit five times the legal limit. Smog has single-handedly overpowered other health epidemics in Pakistan by worsening bronchial infection, heart problems, and lung damage.

ECONOMIC IMPLICATIONS

As per the Institute for Health Metrics and Evaluation, and World Bank, the global cost for air pollution has accounted for \$5.1 trillion, which is 7.2% of the annual GDP.^[6]

According to The Lancet, the costs of reduced productivity



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due to smog-related diseases are around 0.61-0.82% in Low and Middle-Income Countries (LMIC).^[7]

If these trends continue, the economic costs will increase to \$25 trillion as per the Organization for Economic Cooperation and Development (OECD).^[8] A 2011 study suggests that ozone will decrease the productivity of crops to 26% by 2030.^[9] If these trends are to be accurate, the economic cost of the epidemic is eye-opening and calls for attention.

Rapid urbanization has increased the number of vehicles in the country. With over 35% of the population dwelling in an urban setting, the number of vehicles has risen to over 11 million in the past 20 years. The smog commission report confirms that the average growth rate of road transportation has increased to 8.5%.

World Bank's report focused on Indian trends and suggests that economic approaches are necessary; the concept of Disability-Adjusted Life Years (DALYs) and premature death is critical. People who face health issues due to smog as opposed to other disabilities may be linked to DALYs in Pakistan. The effects on income suggest a yield elasticity of 0.7; literature on income elasticity for reducing risks of smog to health is limited, but economic losses in productivity that represent morbidity are evident.

SMOG- A POLICY ISSUE

The Pakistan Clean Air Action Plan (PCAP) originated in 2005 failed in its entirety. It never saw the light of day with incomplete objectives. Similarly, Punjab's Environment Protection Department was unable to meet air quality surveillance in two years.

The need of the hour is an evidence-based policy approach that can help eradicate toxicity in the environment. Policymakers may pick up from China's first ever-red alert due to smog in 2015.^[10] For example, Chinese businesses and schools implemented specific policies to adapt to these severe changes. Campus run websites and websites opted for live broadcasting and taught students from home. The air quality showed improvement by 17.9% in China up to mid-2016.

CITIZENS' RIGHT TO DEMAND CLEAN AIR

All states require AQMS to ensure the collection of data needed with the provision of routine readings. Pakistan Air Quality Initiative has successfully provided live data that the Punjab government should pay heed to.

A study conducted by the University of Chicago suggests that Lahore residents could gain 5.1 years of life expectancy if World Health Organization (WHO) guidelines are followed.^[11] If Punjab and other densely

polluted areas are to achieve success in limiting the smog epidemic, citizens need to take notice of causes rather than blaming the toxicity on external sources.

WHERE ARE WE HEADING?

With long-lasting economic and social effects, healthcare costs have risen. With around 1% of GDP spent on health in Pakistan, preventative health measures are necessary to safeguard the future of Pakistan's health and economy.

Pakistan requires a commitment to reduce greenhouse gas emissions by 2030. 8% of carbon emissions from the transportation sectors necessitate strict adherence towards the implementation of National Environmental Quality Standards.^[12] Vehicles ought to be provided with 4-stroke engines for combusting fossil fuels. Perhaps electric cars can improve air quality along with monitoring their contribution to current pollution.

Pakistan requires a nation-wide system to monitor air quality in cities to drive action. The only way forward is cutting smog that can have two benefits. First, strict measures can reduce greenhouse gases that originally cause air pollution. Second, these modifications address climate change, as well.

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