

Policy Options for Combating Pakistan's Smog Crisis

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Introduction

Smog is increasingly becoming a health concern in Pakistan. Lahore, Faisalabad, and Gujranwala—the most populous and polluted cities of Punjab—are facing a worsening smog which returns every winter with greater intensity. Major contributing factors in this regard include but are not limited to immense traffic pollution, crop burning, and industrialization. These factors not only affect the environment but also result in smog which leads to major social challenges, such as higher hospital admission rates, closure of schools, and health issues including lung, eye, skin, and heart problems. Although the government has taken some measures to mitigate these dangerous effects of smog, the initiatives have proven to be of little significance in combating the challenge. The residual air pollution is responsible for around 135,000 deaths per annum which makes it a leading cause of morbidity and mortality in Pakistan.¹ The daily *Pakistan Observer* recently reported that over 128,000 people annually die due to air pollution-related illnesses, making ambient air pollution (smog) a silent public health emergency in Pakistan.² Therefore, the need of the hour is to formulate an evidence-based policy approach that can help eradicate the smog intensification in the urban environment of Punjab, since without environmental sustainability everything else could fall apart.

The Gravity of the Smog Crisis

Pakistan is the fourth most populous country in Asia with Punjab being the hub of urbanization and industrialization. Within Punjab three cities—Lahore, Faisalabad, and Gujranwala—are severely hit with steadily growing air pollution largely due to the huge urban developments which account for their abysmal air quality. According to IQAir reports of 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.³ This level of air pollution far exceeds the standard limit considered safe for humans, i.e., 35 $\mu\text{g}/\text{m}^3$. The good air quality index (AQI) as per international guidelines⁴ is 50 or below but AQI in Lahore averages between 300-400 micrograms per cubic from October to February which is the time frame of smog. Smog is a cause of pulmonary pathologies due to the presence of Particulate Matter 2.5 (PM 2.5) which is considered to be a major health hazard. Smog causes cardiac issues, allergies, high blood pressure, eye irritation, asthma exacerbation, coughing, burning throat, chest irritation, and chronic bronchitis. Poor air quality affects health badly; kids and women are particularly more vulnerable to this kind of pollution as they absorb more air per pound of their weight.⁵ This combination of smoke and fog or smog has strengthened other health epidemics in Pakistan by worsening bronchial infection, heart problems, and lung damage.⁶

Smoke from vehicles and industries, burning of fossil fuels and crops after harvest, deforestation, and dust accompanied by large urban sprawls with growing slum areas, have all contributed to the air pollution in the big cities. Moreover, the winter smog during last year made the authorities shut down the schools in Lahore and Faisalabad due to negative visibility and a chronic atmosphere. The heatwaves and cold snaps that we have been suffering from for the past several years are all due to increased global warming. The main reason behind all this is *air pollution* in almost all the big and most polluted cities of Pakistan.

To address smog, we must acknowledge that Pakistan's air pollution is a major but least-known public health crisis and demands acceptable attention. According to statistics from the WHO Global Health Observatory, about 200 deaths per 100,000 population⁷ are attributable to

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environmental factors in Pakistan. The crisis has taken this turn due to the structural loopholes of growing industrialization and unmonitored urbanization in the cities. Secondly, the lack of air monitoring has also played its part in worsening the situation. What is more alarming is that despite such horrifying statistics of being the fifth most exposed country to climate change and the biggest victim of global warming with annually increasing air pollution, the deforestation rate of Pakistan is the second highest in the world with an annual rate of 4.6 per cent. Another devastating statistic is of decreasing life expectancy. Air pollution shortens the average Pakistani's life expectancy by 4.3 years, relative to what it would have been if the World Health Organization (WHO) guideline was met. Some areas of Pakistan fare much worse than average, with air pollution shortening lives by almost 7 years in the most polluted areas.⁸

Possible Solutions for Mitigating Smog

Environmental security has a direct impact on human security, it is a multidimensional challenge with complex undertones and is both an increasing concern as well as critical for sustainable development. The first and foremost solution to combat air pollution is sustainable development through sustainable energy. Sustainable Energy for All is the 7th UN Sustainable Development Goal and Pakistan's National Climate Change Policy (NCCP)⁹ is designed to counter environmental , identifying three specific objectives towards this goal, i.e., universal energy access, enforcing the use of renewable energy, and doubling the rate of energy efficiency. If implemented efficiently, these objectives can show positive statistics for improved air quality. Pakistan is also a signatory of the Paris agreement—an international treaty on climate change—that binds its signatory countries to reduce global warming by decreasing greenhouse gas emissions. Moreover, at the domestic level, the government of Punjab has been actively involved in dealing with the crisis and took several measures to counter the toxic effect of air pollution. For example, public transport projects such as the Metro Bus,

Orange Line Train, and Speedo Bus have been launched in an effort to reduce traffic pollution.¹⁰ The Billion Tree Tsunami project launched in 2014 in response to global warming proved to be a milestone towards afforestation. Crop burning has also been banned and heavy fines have been imposed on the culprits.¹¹ However, statistics show that these measures have not been sufficient to slow down the rise of smog and air pollution in the smog-affected areas in Punjab.

Regional Connectivity as a Way Forward

The biggest national challenge to address smog right now is the need to reduce dependency on fossil fuels but considering our supply and demand chain, successive governments over and above fell back on mining more fossil fuels and, thus, the growing coal industry. The excessive indoor and outdoor consumption of fossil fuels hinders the availability of clean air. Statistics show that around 60 per cent of households still use solid fuels for cooking which seriously impacts health conditions. About 38,000 people in urban and 12,000 people in rural areas die annually from ambient air pollution and about 7,500 people in urban and 56,000 people in rural areas from household air pollution.¹² At the sector level, Pakistan's transport and energy sectors contribute more than two-thirds of particulate matter—the primary pollutant of smog.¹³ The road-transport sector is responsible for 85 per cent of PM_{2.5} emissions and 72 percent of PM₁₀ emissions. The poor quality of fuel contributes to air pollution. For example, the high sulfur content in petroleum (0.5–1 percent) and furnace oils (1–3.5 percent) is responsible for high SO₂ emissions in the air.¹⁴ Hence, managing the smog crisis is basically addressing how to phase out fossil fuels and phase in renewable energy. An effective and progressive solution to this is to utilize the option of regional trading agreements with renewable energy companies and transmission infrastructure that would enable the export of clean energy from surplus regions to where it is needed. The Central Asia-South Asia Power Project—commonly known as CASA-1000 will export hydropower from Central Asia to South Asia. Such

projects can help improve Pakistan's dependency on fossil fuels for power generation. Pakistan is a climate-hit country looking for climate justice, however, right now is the time to use international platforms such as COP27—which Pakistan will be co-chairing this year in Egypt—to urge the international community to work hand-in-hand with Pakistan to kickstart projects like Turkmenistan-Uzbekistan-Tajikistan-Afghanistan-Pakistan (TUTAP), the brainchild of The Asian Development Bank. The concept of this project is to build new markets in the region through distinct projects by building supply lines to transport power at lower costs within the region which is expected to increase energy security and energy efficiency. More than promoting prosperity, development, and competition in the region, these projects will also ease air pollution in Pakistan and will help the country take sustainable measures to combat winter smog. Secondly, domestic inclusion in matters of regional cooperation is necessary for decision-makers to create consensus.

Sustainable Development

Pakistan's increasing air pollution is a public health emergency and a serious ultimatum for the concerned ministries and authorities to draft evidence-based long-term policies in order to mitigate smog in the affected regions, but despite the regressing figures of the AQI, a profoundly sustainable policy is not yet adopted either at the federal or the provincial level by the authorities to mitigate the seasonal smog crisis in the biggest industrial cities of Pakistan. Banning stubble burning, sealing 55 industrial units, and penalising smoke-emitting vehicles is not a long-term policy that could mitigate smog as it has had limited success in the past five years. What needs to be done is to sponsor the growing industry of solar energy, making public transport safer, more efficient, and cheap for everyone, and implementing the projects of green vehicles across Punjab. These would be more sustainable measures that will build the capacity of the state to deal with the smog challenge. Statistics indicate that if we start working today on implementing long-term strategies to curb smog it will take nearly a decade to produce the desired

results in the reduction of smog in Pakistan. Therefore, urgent steps are required to be taken as the citizens of Punjab choke on smog every winter.

Public Environment Awareness and Accountability

Public awareness and accountability should also be on the agenda while combating smog. Public awareness can help achieve a milestone when dealing with smog and people should be made aware of the sensitivity of this issue. Merely taxing them more without first educating them about environmental degradation and how their activities eventually end up polluting the air quality is cruel. Seminars, awareness campaigns, and print, electronic, and social media activism is the key to sensitizing the masses around the issue. After considerable awareness, public accountability should be monitored. Environment-conscious citizens should face serious penalties for their polluting and non-eco-friendly actions.

Conclusion

We are on the brink of a catastrophic humanitarian crisis, the beginning of what we have just witnessed in the 2022 flood that left one-third of the country under water. Climate change is at work and increased environmental degradation will make the calamities come back more wrathfully and not just in the form of floods. After food and water, clean air is essential for the continuity of life on earth, therefore, the change starts with us citizens, the ones who consume the environment and its resources as equally as any state official, therefore we need to change our behavior towards the environment we live in and should start owning it. There is a serious need to plant more trees, avoid plastic, reduce consumption levels, prohibit illegal dumping of waste, and use environmentally benign fuel sources to help mitigate air pollution and contribute your part in building a sustainable environment because only if it survives then we survive. Public cooperation is the most significant tool to combat smog in the affected regions along with evidence-based policymaking at the government level. Moreover, domestic capacity building accompanied by regional cooperation will do the job for Pakistan's fight against air pollution



(smog). As much as we need to become climate resilient through capacity-building and sustainable development, we also require helping hands to mitigate smog and other environmental crisis which threatens our security equally as that of our neighborhood. As a result of hazardous emissions, notably the transboundary air pollution, the air quality in cities is degrading day by day. As a result, cities such as Lahore, the province capital, has

become one of the most polluted cities in the world. Smog is mostly generated by air pollution from traffic, factories, crop burning, and solid waste burning, and it will get thicker over the next few days. Therefore, in order to reduce smog pollution in Pakistan, regulations should be created by governmental and commercial institutions to reduce emissions from sources, particularly the emissions of particulate matter and nitrogen oxides.

Notes and References

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