

Eleanor Flores  
Parkside CTE  
Salisbury, Maryland USA  
Bangladesh, Air Pollution

## **Bangladesh: Air Pollution Realities and Solutions**

Pollution is something that we all know exists, but we do not understand the true magnitude of what it does to the world, its people, and wildlife. We know that water pollution primarily impacts marine life, land pollution impacts soil and agriculture, and air pollution impacts our respiratory systems and ways of life. One thing that all pollutions have in common is how they affect our Earth. For example, many counties suffer from smog hovering over the cities, this form of air pollution invades our homes and makes its way into the lungs. Air pollution propagates up to 4.2 million deaths per year, many from lung disease or cancer (World Health Organization, 2021).

In Bangladesh, air pollution kills 195,000 people per year. According to Dr. Shahrir Hossain, a leading environmental expert, "death rates among children have seen a significant rise due to air pollution. Besides, airborne diseases, including asthma, breathing problems have seen a steady rise in Bangladesh, especially among low-income group people" (Sakib, para, 17, 2021). "Even in neighboring India, smog is so bad that Delhi, India recently closed schools because air pollution is beyond four times what is considered safe for people to breathe." (Kelly, 2021)

In this paper, I seek to talk about Bangladesh's ways of life, traditions, culture, language, trade, and the solutions to the air pollution problem that troubles the country's people.

The Bangladesh population in 2020 was 164.7 million people, with nearly 98 percent of its population being native-born Bangladeshis. Yet, it is essential to note that Bangladesh has a rich and diverse indigenous population. Its resources and natural beauty draw travelers worldwide to see its ancient lands. This country maintains a strong cultural, linguistic, and religious foundation that has been a staple of the Bengal people for centuries. Bangla is the primary language of the land.

Bangladesh has many different clothing varieties. Traditional casual wear includes kurta (A loose collarless shirt that ends right above or below the knees), fatua (a collared long and short sleeve shirt), and lungi (a men's skirt that which wraps around the lower waste). Men formally wear western dress or pinjabi-pijamas. Women's traditional clothing includes Saree (an unstitched cloth that wraps around the waist, with one end draped over the shoulder) for formal and Salwar Kameez for non-formal occasions. More exotic designer cloth like silk, Jamdani, and Muslin are fashionable in Bangladesh.

Bangladesh has many eccentric traditions. Food includes steamed rice with meat and fish, curry, vegetables, and different soup varieties from a culinary perspective. Bangladesh's people love milk-based sweetmeats and fish overall and various food served during festivals and special occasions other than their everyday meals. Some of the foods include Pilaw (rice-based dish), kababs (mainly cut or ground meats), and golapjamun (reduced milk to make a solid dough consistency).

For more than 200 years, Bangladesh has a rich history of religious and non-religious festivals. For example, the festival Eid-ul Fitr, one of the two primary religious festivals celebrated in Bangladesh. This festival represents the first day after fasting for the month of Ramadan. People get together after fasting to eat foods and return to regular routines. Eid-ul Azah symbolizes the highest loyalty to Allah Muslims by the animal sacrifices to distribute meat to the poor and diseased (Festivals, 2021). Many festivals center on the performing arts and include music and dance styles that can be one of three categories, classical, folk, and modern. Many of the indigenous peoples of Bangladesh have music and dance variations that make them

culturally distinct. Along with the performing arts, Bangladesh cultural life offers the world gifted painters, authors, and poets that generate masterful literature and art. Sports such as cricket and football are popular past times in Bangladesh.

Bangladesh's export-orientated manufacturing has increased the economy and is its primary source of income. Textiles and apparel are the main reason for the country's export earnings. Other exports include leather products, software, light engineering, and pharmaceuticals. The Embassy of Bangladesh states that "bilateral trade between China and Bangladesh reached US\$ 10.31 billion in 2013 from only about a billion USD [United States dollars] in 2002" (Major Exportable Products of Bangladesh, 2017). There are many different categories of exported goods that Bangladesh is known for trading worldwide. For example, garments and knitwear, and apparel make up eighty percent of Bangladesh's trade earnings. The home and textile, leather goods, jute (a shiny fiber that is spun into coarse, strong threads), and agricultural products are popular trade items that go worldwide.

Bangladesh has been ranked as the most air polluted country globally and its capital Dhaka the 2<sup>nd</sup> worst polluted city. (Sakib, 2021) Bangladesh suffers both from domestic pollution and transboundary pollution generated from neighboring highly polluted countries such as India and Nepal. One of the leading causes of air pollution is that energy production in these countries use coal predominantly as their energy resource. "Coal mine particles, those are coming through transboundary including from India, are 100 times more pollutant and danger to health and environment. It contributes as much as 40% of the total air pollution we find in Bangladesh in our studies," (Sakib, 2021) Many countries are suffering from the problem of air pollution, and their solutions differ depending on the causes. One of the leading causes can be energy production because most countries use coal as their energy resource. After all, it is cheap.

Vehicle emissions, industrial dust, open waste burning, large-scale construction activities, and, most importantly, brick-burning kilns are the key contributors to air pollution. The government has taken initiatives to take down conventional brick kilns and issued a notification for the use of concrete blocks, instead of conventional bricks, in government projects. By 2025, the government will use concrete blocks on a mandatory basis in all sectors, except for in road construction. Laws and government action will take many years to implement pollution saving initiatives. The population of the country should be informed about the disastrous effects of pollution so they can reconsider the materials they burn for daily use and push for government action.

The government of Bangladesh is now working to control emissions through regulations. "The government is so aware in implementing and coordinating existing laws to curb environmental pollution. The government officials regularly monitor and pay field visits to ensure that industries install Effluent Treatment Plant (ETP) method to purify industrial waste" (Sakib, 2021). In 2014 Bangladesh instituted the (CASE) Clean Air and Sustainable Environment project. The program addresses two of the country's biggest air polluters, brickfields, and transport. "Brickfields in Bangladesh expel over 9.8 million tons of greenhouse gases into the air annually due to a combination of old technology, weak environmental legislation and enforcement and lack of corporate responsibility. Meanwhile, growing numbers of motorized vehicles are clogging up roads and contributing further to poor air quality." (World Bank Group, 2014") CASE directly tackles pollution by "New Program" is encouraging the adoption of cleaner brick manufacturing technologies that require less energy. The program also is launching twenty demonstration that will promote widespread adoption of these efficient technologies. In the city of Dhaka, the CASE project is supporting urban transport by promoting safe pedestrian mobility by actively rehabilitating and improving 70km of sidewalk with surface drainage and constructing foot traffic bridges.

In China, they are using the Air Pollution Control in the Jing-Jin-Ji Program. The program starts with controlling the air pollutants, cleaning out the emissions, and making clean energy more expandable and cleaner. (China: Fighting air pollution and climate change through clean energy financing, 2020). Over the past seven years, a total of 32 expressways connecting cities in the "Jing-Jin-Ji" region have been opened or expanded, stretching 2,005 km in length. In addition to the building expressways a high-speed railway network in the region has been developed. In just a few years, a total of 11.25 million households in the region have replaced their coal-fired boilers with electric heating and natural gas heating, making contributions to the improvement of the local environment.

Other countries, including India, are using industrial air filters that are 328 feet tall. The air is sucked into different glass rooms and heated to create a greenhouse effect, pushing the hot air to the top. Once the hot air gets to the top, the air gets pushed through a group of filters, cleaning the air before being released back into the atmosphere. This system cleans up to 1,130 cubic meters every day. This giant filter doesn't just help outside air pollution but also indoor air pollution. The filters allow people to open their windows for better ventilation when cooking, cleaning because even those things can build up in the home (Camfil Air Filters, 2019).

In Bangladesh, the most efficient way to stop the emissions would be to invest and install filters/scrubbers into industrial plants that emit gases and toxins into the environment. These devices can pull in toxic air and let out clean. New smokestack technologies have also been developed to monitor emissions. A filtration system in these vents eliminates most of the toxins let out. The cost of these filter/scrubber can be costly. Cost estimates vary widely but range in the \$50-\$100 per ton of industrial exhaust. Costs are also born in people's health buy not treating these pollutants from gaseous emissions. All industrial enterprises of the country should be equipped with effluent treatment facilities (ETFs). Measures have to be taken to ensure that all enterprises actually use the ETFs, Sharing of costs could be supported with centralized industrial parks, Centralizing industry could make it easier to contain and monitor the pollution created by them. Bangladesh should develop policies and initiatives that encourage the development of environment friendly industries. Workers' organizations and trade unions should be given a role in monitoring the environmental consequences of the respective industrial enterprises. Local population should be educated and mobilized by giving them a role in monitoring the pollution created by industrial enterprises.

Much of the smog and harmful air pollutants in Bangladesh specifically and Southeast Asia generally are caused by slash and burn methods to clear land for plantation sized agriculture. Reforestation projects should be implemented and where agricultural land is needed, chip and mulch operations of vegetation should replace mound burning operations.

Another primary source of harmful emissions is transportation. Batteries already power cars, so they do not have to let our emission when burning fossil fuel, for example, Tesla. A primary issue is that many people cannot afford these environmentally friendly ways of transportation. Therefore, what if we do the same thing as the factories, filter out the emission that runs out of the car's exhaust to reduce the toxic air they produce.

The Bangladesh government must raise the transboundary pollution issue with neighboring countries. These source countries must take responsibility for what they contribute to air pollution not only in their country but the effects on their neighbors.

#### References:

Camfil Air Filters. (2019, June 7). *Do "giant" industrial air filters really work?* Camfil.

<https://cleanair.camfil.us/2019/06/07/do-giant-industrial-air-filters-really-work/>

China: Fighting air pollution and climate change through clean energy financing. (2020, June 21). The World Bank. <https://www.worldbank.org/en/results/2020/06/21/china-fighting-air-pollution-and-climate-change-through-clean-energy-financing>

Festivals. (2021, August 24). Banglapedia: National Encyclopedia of Bangladesh. Retrieved September 21, 2021. <https://en.banglapedia.org/index.php/Festivals>

Kabadi. (2021, June 18). Banglapedia: National Encyclopedia of Bangladesh. Retrieved September 1, 2021. <https://en.banglapedia.org/index.php/Kabadi>

Kelly, M. L. (2021, December 2). *New Delhi is closing schools as it tries to deal with air pollution*. NPR. <https://www.npr.org/2021/12/02/1061028425/new-delhi-is-closing-schools-as-it-tries-to-deal-with-air-pollution#:~:text=New%20Delhi%20is%20closing%20schools,deal%20with%20air%20pollution%20%3A%20NPR&text=Music%20Of%202021->

Major Exportable Products of Bangladesh. (2017, September 21). Embassy of Bangladesh Beijing, China. Retrieved October 10, 2021. <https://www.bdembassybeijing.org/major-exportable-products-of-bangladesh/>

Sakib, N. (2021, March 28). *lives, environment: Experts attribute situation to transboundary air pollution, unplanned development, and construction works*. Anaddolu Agency. <https://www.aa.com.tr/en/environment/bangladesh-air-pollution-engulfs-lives-environment/2190506>

World Bank Group. (2014, July 23). *Cleaning Dhaka and Bangladesh's air*. World Bank. Retrieved December 26, 2021, from <https://www.worldbank.org/en/news/feature/2014/07/24/cleaning-dhakas-air-bangladesh>

World Health Organization. (2021, September 15). *Air pollution*. World Health Organization. <https://www.who.int/health-topics/air-pollution#tab=tab>