

# AIR POLLUTION IN BANGLADESH: THE ROLE OF PUBLIC ADMINISTRATION

**Shakeel Ahmed Ibne Mahmood**

Member, Bangladesh Environmental Society (BES)  
shakeel.mahmood@gmail.com



Daily Traffic Scene in Dhaka

(Source : <http://gallery.bangla.ca/dhaka/trafficindhaka>)

The “air pollution” kills nearly 15,000 Bangladeshis each year according to Mr. Paul Martin, a bank environmental specialist in Dhaka 2001. This is released in the World Bank report saying Bangladesh could save between \$200 million and \$800 million per year. These amounts translate to about 0.7% to 3.0% of the gross national product if air pollution is reduced in just four major cities of Bangladesh. According to Mr. M. A. Wahed of ICDDR-B; large number of children, homeless street children, local streetwalkers, and rickshaw pullers in the city of Dhaka pose a definite threat to the air pollution. Young children are mostly exposed to cadmium (Cd) through inhalation of smoke and contaminated soil including dust from the industrial emission and sewage sludge.

The high concentration of lead (Pb) in the environment from variety chemicals including gasoline, paints, ceramics, batteries, pigments, etc. has also been the factors to increase the risk of the polluted air. A study found that lead in the human blood was very high. This is at the toxic levels causing lead poisoning in the children presenting with psychomotor delay and behavioral problems.

An on-line forum called South Asia in 2001 mentioned that 6.5 million people in four large cities of Bangladesh suffer each year. Another at least 8.5 million cases have been observed with minor illnesses that did not require severe treatment. The major disease in Bangladesh is not diarrhea as often perceived. In reality it is acute respiratory infection caused mainly from the polluted air according to South Asia, 2001. Automobiles referring to the auto rickshaws, trucks, and buses some 35% is related to fine particulate matter and about 48% to hydrocarbon mainly generated by the vehicles with two-stroke

engines (using a direct mix of engine Mobil oil and petrol), particularly by baby taxis, tempos, and motor cycles), industrial emissions, bad civic practices and poor government services are some of the factors causing polluted air in the environment of Bangladesh. South Asia mentioned in 2001 that the bank gave Bangladesh \$4.7 million in July 2000 to fund air quality management project. It also supported a program to train drivers how to reduce emissions. However, the ultimate result is not ascertained with positive outcome for the people.

According to the Population Reports of 2002, an estimated 2.7 to 3.0 million people every year die due to air pollution. This figure is roughly about 6% of all deaths. The source also noted deaths caused by the air pollution in Brazil (Sao Paulo), Mexico (Mexico City), and U.S.A. (New York City) at large numbers. Researchers anticipated that the adopting green gas mitigation methods, which are currently available, would save about 64,000 lives in these cities during the next twenty years. This dangerous attack would also stop nearly 65,000 cases of bronchitis and save about 37 million days of restricted or lost work comprising individual people. Millions of people are at risk from air pollution in the cities where pollution control is not stringent.

The densely populated cities like Bangkok, Dhaka, Manila, Mexico City, New Delhi, etc. are the rapidly growing cities in the world. These are often entombed with air pollution from several kinds of vehicles such as trucks, taxis, buses, and motorcars in addition to the uncontrolled industrial discharge. During 1995 in Mexico City the standard ozone concentration was about 0.15 ppm which is nearly 10 times the natural atmospheric concentration. This figure is about twice the maximum permitted in Japan or in the U. S. A.

The Nation Health of 2001 noted that in the developing countries the World Health Organization (WHO) estimated about 700,000 deaths per year. These lives could be saved by preventing three major atmospheric pollutants of carbon monoxide, suspended particulate matter, and lead by bringing down to safer level. In the developing countries the health expenditure of urban air pollution was estimated to be about \$100 billion a year during 1995. About \$40 billion of this amount was accounted for the chronic bronchitis.

## **LIVING WITH THE POLLUTED AIR**

According to the Daily Star of Bangladesh, Swedish researchers gave details of the deadly heart attacks which may be more plausible problem among the people who spent decades living in heavily polluted areas. While there was no connection between peoples' exposure to various pollutants over 30-year period and overall heart attack risk, such exposure did appear to be linked with a greater risk of heart attack. In particular, heart attacks often occurring outside the hospitals attributing to the air pollution have been reported by the colleagues of Mats Rosenlund of the Stockholm County Council. The researchers also established that people who had ever lived in "hot spots" pollution having particularly dirty air had 23% to about 40% increased risk of fatal heart attack. The health effects of short-term exposure to air pollution are fairly well understood but it is rarely clear how long-term pollution exposure affects health. This was pointed out by Rosenlund and associates in the Epidemiology journal. Pollution exposure could add to heart attack risk by causing chronic inflammation, speeding the progression of arteriosclerosis (i.e., hardening of the coronary arteries) and altering heart's functional capability, etc. To investigate these factors, the journal reviewed information on pollution exposure for 1,397 men and women living in Stockholm County who had suffered heart attacks for the first time between 1992 and 1994. The researchers estimated carbon monoxide, sulfur dioxide, particulate matter, and oxides of nitrogen exposure by linking an individual's address to historical data on emissions and atmospheric dispersion of the pollutants. The major air pollutants affecting respiratory tract are sulfur dioxide, photochemical

oxidant, ozone and the oxides of nitrogen noted by several specialists and reviewers. Overall, there was no link between pollution exposure and heart attack risk. However, the risk of fatal heart attacks appeared to have some association with the pollution exposure, especially among the people who died just outside the hospital.

## **PUBLIC HEALTH POLICY AND IMPLICATIONS IN BANGLADESH**

Bangladesh is one of the least developed nations in the world. Since 1971 there has been some growth in the industrial sector. Industries are mainly concentrated in major urban metropolitan areas such as Dhaka, Rajshahi, seaports of Chittagong and Khulna, inland port city of Narayanganj, and other divisional towns. An environmentalist, Mr. Khandoker Azizul Islam, mentioned in 2006 that there are two major sources of air pollution in Bangladesh: (1) vehicular emissions, and (2) industrial emissions. These are mainly concentrated in the cities or urban areas. Other than those there are many brick-making kilns operated seasonally mainly in dry season through out Bangladesh. More or less all of these kilns use coal and wood as the prime sources of energy resulting in the emission of particulate matter, oxides of sulfur, and volatile organic compounds. Additionally to these usual sources of fuel, used rubber wheels of vehicles are also oxidized producing substantial amount of carbon and relevant toxic gases. These are harmful for human health.

In order to accommodate the growing population in the urban areas the construction of high-rise buildings is growing rapidly. The numbers of these buildings are marching in conjunction with the numbers of the slums in the urban areas. The enormous force of population growth has made it almost unreliable to maintain a clean environment in the capital city of Dhaka unless a drastic measure of cleanliness is undertaken. The recent photograph shows a small cross-section of the polluted areas of the city of recent Dhaka caused from usual translation of the traffic.

Researcher Mr. M. Khaliqzaman had mentioned in 1998 that Dhaka is one of the most densely populated cities per unit area basis in the world. It is located approximately at 23.42°N of the equator and 90.22°E of Greenwich having estimated population of more than 10 million. Air pollution has emerged to an acute problem in this capital city. Blackening of the city air with reduced visibility is often observed in some areas during the day time. Occurrence of choking smells and irritating eyes are very common though obvious clean environment is not difficult to achieve, if proper planning is undertaken both at the Government and private sectors.

## **POLLUTION ESCALATES IN DHAKA**

A new child-attacking virus thrives in Dhaka as pollution heightens. According to the WHO report 2001, the lead concentration found in the blood of the children in Dhaka was up to four times higher than the acceptable level of 10 g/dl. This high level of lead concentration in blood is correlated with that in the air, according to report published in the E-mela website 2002. According to the Bangladesh Observer in 2002, the new variant of virus has been hitting small children of Dhaka with debilitating effect attacking their breathing problem.

The school children of Dhaka City had nasal irritation, cough, headache, dizziness, etc. when they were affected by common cold. The underlying reason attributed to the high lead in the environment from various sources of industrial usage and products such as gasoline, ceramics, polymers, batteries, paints, pigments, etc. Young children are mostly exposed to cadmium through inhalation of smokes and contaminated soils and dust from the industrial emissions and sewage sludge. In most cases the children had been given antibiotic which is often detrimental in combating viral infections. However, what is

alarming is that the medical community appears unprepared and not well equipped to deal with the new viral strain or similar consequence. Some medical experts have mentioned about the high level of urban pollution but no concrete remedy of the problem.

### **ROLE OF THE DHAKA CITY CORPORATION (DCC)**

In a recent review meeting DCC revealed nodal agency entrusted abysmally. According to the World Bank representatives, strongly commented ever, passed on to the officials of an international organization on the DCC highlighting latter's failure on the environmental issues. According to Ms. Azra Parveen, an urban researcher mentioned in 2006 that it had no coordination either with the Dhaka Metropolitan Police (DMP) or the Government Office of land development of the *Razdhani Unnayan Kortipoksho – RazUK* despite inefficient officials concerned. The DCC has drawn a flake for the inherent lack of expertise in implementing a project of international standard for something involving serious concerns. Hopefully, the project gets completed with rapid marching arrangements under the affiliated Ministry.

### **RECOMMENDATIONS AND SUGGESTIONS**

Civilized people always feel the necessity of clean environment. But proper actions must be in place to assure clean environment. The atmosphere is under constant pressure from the green house gases that threaten to change the climate severely. The following measures can be reviewed effectively and then adopted or implemented by the respective authorities beside private sector to provide clean atmosphere for the future generation:

- i. Promote national energy efficiency and emission standards, and develop efficient, cost effective, and less polluting mass transit systems;
- ii. Impose bar on importing leaded gasoline;
- iii. Abolish 2-stroke engines and take steps to replace old and small vehicles by the large capacity vehicles having 4-stroke engines;
- iv. Restrict usage of the vehicles older than 20 years having severe exhaust fumes;
- v. Use proper lubricants that reduce emission levels and pollutants;
- vi. Identify unfit vehicles via emission tests and introduce annual emission testing;
- vii. Encourage people to use Compressed Natural Gas (CNG) or Liquid Petroleum Gas (LPG), Rechargeable Battery (recently being used by US) driven vehicles, etc.;
- viii. Immediate relocate/shift the Industries (such as Tanneries, Battery, Pharmaceutical, Tobacco) away from Dhaka city suitable to initiate industrial belt or parkway;
- ix. Extend training to the physicians and relevant personnel for potential patients;
- x. Drivers of the vehicles require education on the reduction of emission;
- xi. Introduce annual Seminar/Conference addressing detrimental effect of the pollution;
- xii. Introduce proper disposition of the Industrial waste to avert degrading gases;
- xiii. Create Public Awareness on Air Pollution through media such as videos, pamphlets, booklets, etc. beside radio and television programs;
- xiv. Modernize power systems or power generating sub-stations;
- xv. Reduce fossil-fuel combustion;
- xvi. Implement United Nations Framework Convention on Air pollution;
- xvii. UN Environment Program and UNEP should open a technical office specializing in Air Pollution in Dhaka as they did in Kathmandu, Nepal;
- xviii. Save the forest and promote plantation within the city limits for ecological balance; and
- xix. Introduce 'Strong Political Forum' having agenda of saving the environment.

## **EPILOGUE**

The transport situation in Dhaka often gives never-ending critical message. At the heart of the matter, it is mostly about management involving Public Administration which renders a general problem and thereby resulting to systematic failure. While sticking to the phase-out program, Government can assist rehabilitating the affected people through the private or central administrative avenues per the prescription of Ms. Azra Parveen (2002). The only way to enhance accountability of Public Administration is that the Government of Bangladesh should immediately translate National Environmental Policy and Transport Policy exercising actions to benefit the people. Otherwise problems in future will encounter severe consequence with the valued environment.