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Social and Economic life Affected by Environmental Degradation in China and Bangladesh

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Abstract:

Environmental pollution is as old as the civilization we can say that in last few decades it has really become a major issue. As the civilization become modern environment getting day by day victim of it can say by product of the development and price for the progress. As a result of Environment pollution China and Bangladesh seems more prone. Air and Water pollution is most vulnerable condition in both in these two countries. Air mainly polluted by vehicle emission, industrial discharge and burning of fossil fuel and water due to arsenic contamination, inadequate solid waste and industrial effluent management. Both countries government necessary steps are to be taken to protect the environment problems of Bangladesh and China. This paper provide an overview of different environmental problems of Bangladesh and China and discusses the ways to improve it.

Key words: Environment, Degradation, Pollution, Waste and Emission

Introduction

China's environmental crisis is one of the most pressing challenges to emerge from the countries rapid industrialization. China's booming economy which has averaged around 10 percent annual GDP growth for the past decade which

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became burden of its environment and public health. As carbon emission China is responsible for a third of the planet's greenhouse gas output and has sixteen of the world's twenty most polluted cities. Environmental degradation cost the country's 9 percent of its gross national income in 2008, according to the World Bank, threatening to undermine the country's growth and exhausting public patience with the government's pace of reform.

Different aspects of environmental pollution

Air Pollution

According to the Environmental Protection Agency's air quality scale above 300 pollution rating means the air is unsafe to breathe. Under this conditions people should stay indoors with air purifier and remain motionless according to U.S Embassy Beijing guidelines.

Coal combustion generates particulate matter know as "PM". Now Beijing is suffering from PM 2.5, which is a particulate matter with diameter of 2.5 micrometers of less.

Manufacturing industries and 5 million-plus cars of Beijing all are pollute to the city's crippling air pollution. Primarily most experts blame the coal-burning electrical plants that power China's breakneck economic growth. The New York Times reports that China now burns 47 percent of world's coal, which roughly equal amount of all other countries in the world.

The telegraph reported a case of an 8-year girl who suffered lung cancer in China and doctors pointed it as exposure of air pollution which is mainly fine particulates from vehicles. In construction formaldehyde is used in large portion and furniture also polluted indoor air.

In the year 2012 Zhong Nanshan, the president of the China Medical Association warned that China's biggest threat is air pollution which caused Lung cancer and cardiovascular disease increasing in number.

Water Pollution

Industrial pollution is both threat for air and water body indeed. Many of China's waterways are now unfit for human use directly because of contamination of industrial discharge. In January, a chemical accident leaked benzene, well known cancer-causing agent into a Huangpu River (where the thousands of dead pigs floating past Shanghai), more than 20 people were

hospitalized and area resident were took alternatives for safe drinking water on fire trucks (According to the Wall Street Journal). The economist report that more than half of China's surface water is so polluted which is not recommend for drinkable and one-quarter of it is not even used for industrial purpose. According Reuters report 40 percent of China's farmland relies on underground water for irrigation and it is estimated that 90 percent is polluted. About 60 percent of the groundwater beneath Chinese cities is described as "severely polluted" by the Economist. About 60 percent of the groundwater beneath Chinese cities is described as "severely polluted" by the Economist.

businessman Jin Zengmin from Zhejiang province offered a 200,000-yuan ($32,000) reward or challenge to any environmental official who would like to swim in a nearby river. When he was child he was swam but the river is now black with sludge from an upstream shoe factory. Time. com reports.

Reuters reports, Hi In Shangba, a city in southern Guangdong province, the river flows through town changes its colour from white to orange due to various types of industrial effluent like cadmium and zinc which is known to cause cancer. 34 year old farmer from Shangba told the condition about their village river that heavily polluted even fish are not alive there, chicken and ducks that drank from river and died. Six people died that village at their age of 30s and 40s because of pollution.

Combined with negligent farming practices, China's arable land suffer from water as a result land into desert, today its claims around 27.5 percent of China's total land mass and 400 lives are now affected by desertification. According to the government, and the World Bank estimates that overall cost of water scarcity with pollution is around 147 billion RMB, or roughly 1 percent of GDP.

Desertification

China has a history of intensive agriculture going back millennia, so it's perhaps unsurprising that much of the nation's 3.7 million square-mile (9.6 million square kilometers) territory has been subject to deforestation. Population pressure, forest to farmland and hydroelectric and other infrastructure plant which remain forests at risk. United Nations Environment Programme list the

country's forests as in danger and need of protection literally. With closely monitor then see that heels of deforestation, agricultural development is desertification, decrease of vegetative land cause results in a landscape defined by bare soil and rock. 1 million square mile (2.6 million sq km) of China is now under desertification means one-quarter of the country's total land surface across 18 provinces, according to IPS News Agency.

According to World Wildlife Fund (WWF) Blinding dust storms, mud-choked rivers and eroded topsoil are often seen cause of desertification, despite of recent gain of reforestation and grasslands restoration, the desert continue to expand each year by about 950 square miles (2460 sq km).

The Guardian Reports, loss of arable land created Chinese of "eco-migrants" who are forced to live their homeland and give up their traditional agricultural lifestyle because it is no longer an option. Liu Tuo, Chinese desertification control officer, told the Guardian that they made progress against it but face a daunting challenge, it may take china 300 years.

Biodiversity

Deforestation and desertification is related to the issue of habitat loss and result in drop of biodiversity. Vast areas of forest which cleared for farmland, bamboo plantation, timber and fuel wood which fall animals like pandas to struggle to survive.

China's issues with species loss extend far beyond its borders: The slaughter of elephants for ivory, the killing of rhinos for their horns, and the culling of tigers for their bones (as medicine) and penises (as aphrodisiacs) have one primary source: the Chinese market.

Sharks are endangered worldwide, largely because of shark finning — the removal of dorsal fins from still-living sharks — for the Chinese delicacy known as shark fin soup.

Soil contamination

The immense growth of China has resulted in increased soil pollution. Its threat to environment, food safety and sustainable agriculture according to The State Environment Protection Administration believes. 38,610 square miles

(100,000 km^2) of China's cultivated land have been polluted, with contaminated water being used to irrigate a further 31.5 million miles (21,670 km^2.) and another 2 million miles (1,300 km^2) have been covered or destroyed by solid waste. Heavy metals contaminate 12 million tonnes of grain every year estimated, resulting losses of 20 billion Yuan (USS 2.57 billion)

Waste

In China waste production is increased but lack of developed recycling systems have been recognized to a lack of environment awareness. In 2012 the waste generation in China was 300 million tons (229.4 kg/cap/yr). A ban came into effect on June 2008 that all plastic bag should not be give without charge money to every supermarkets, departmental store and shop throughout China. Stores must clearly mark the price of plastic shopping bags. Even the ultra-thin plastic bags those less than 0.025 millimeters (0.00098in) thick production, sale and use also banned. The state Council called for cloth and shopping basket bags. After the ban was implemented A survey by the International Food Packaging Association found that 10 percent fewer plastic bags found their way into the garbage.

Electronic waste

Electronic waste in China

As Chinese economy grows, China produced 2.3 million tons of electronic waste in 2011 but they expected more per annum. In addition to domestic waste production, large amounts of electronic waste are imported from overseas. Banning the import of electronic waste and requiring proper removal of domestic waste has introduced by legislation recently , but has been criticized as insufficient and susceptible to fraud. In Tianjin city where local have been succeeded to remove 38,000 tones of electronic waste properly in 2010 but huge electronic waste is still handled improperly.

Other Pollutant

Lead: Blood lead levels of children in China now in danger. Now monthly common problem is pediatric problems in China. A 2006 review data showed that one-third of Chinese children suffered from high blood lead levels. This cause of metal smelters pollution and a fast -growing battery industry.

Persistent organic pollutants (POPs): From 2015, China make plan to make inventory of POP contaminated sites and its remedy because China faces big challenges to control and eliminate POPs, since they often are cheaper than their alternatives.

Dust: During late winter and springtime The Yellow Dust which called seasonal dust cloud affects North East Asia. The dust come from the deserts of Mongolia, Northern China and Kazakhsthan. Sulfur (an acid rain component) carbon monoxide, ash, soot and heavy metals and other carcinogens often accompany the dust storms and viruses, bacteria, fungi, pesticides, plastic ingredients, herbicides, pesticides, antibiotics, asbestos, combustion products and hormone mimicking phthalates. Manufacturing of touch screens for Apple products 49 employees of Wintek were poisoned by n-hexane in 2010. In 2013 showed that country's rice supply were contaminated with toxic metal cadmium.

Impact of pollution

In 2007 article China's pollution problem, the New York Times stated ""Environmental degradation is now so severe, with such stark domestic and international repercussions, that pollution poses not only a major long-term burden on the Chinese public but also an acute political challenge to the ruling Communist Party." The article point out the following things :

1. In 2004 pollution cost 3.05% of nation's economy stated by A 2006 Chinese green gross domestic product estimate.
2. Cost of air and water pollution in 2003 is 2.68% or 5.78 of GDP by A 2007 World Bank and SEPA report, depend on which calculation is used , is Chinese or a Western method.
3. Chinese Ministry of Health found that China's leading cause of death is cancer and industrial pollution is mainly dominant here.
4. Every year, ambient air pollution alone killed hundreds of thousands of citizens.
5. It is estimated that 500 million people are now out of safe, clean drinking water.
6. European Union say 1 % of the country's 560 million city dwellers breathe safe, because major cities are constantly covered in a toxic gray shroud. Before and during the 2008 Summer Olympics China use meteorological deus ex machine to clear the sky.

7. Ocean large section is treated without marine life because of enormous algal blooms caused by the high nutrients in the water.
8. It is said that pollution has spread internationally: acid rain contains sulfur dioxide and nitrogen oxides fall on South Korea and Tokyo and pollution even spread Los Angeles in the USA according to the Journal of Geophysical Research.
9. The Chinese Academy of Environmental Planning in 2003 stated an unpublished internal report says 300,000 people die each year from ambient air pollution, most of the cases are heart disease and lung cancer.
10. According to Chinese environmental experts in 2005 issued that outdoor air pollution cause premature deaths were likely to reach 380,000 in 2010 and 550,000 in 2020.
11. Joined report by World Bank and China's national environmental agency in 2007 noticed that outdoor air pollution caused 350,000 to 400,000 premature deaths and indoor pollution contributed additional death 300,000 people, another 60,000 died from various diseases like diarrhea, bladder and stomach cancer and others can be caused by water-borne pollution. World Bank officials said Chinese officials asked that some of results should not be published in order to avoid social unrest.
12. China mainly worried for air pollution. A 2015 report from the University of California at Berkeley estimated that 1.6 million people die each year from lung, heart and stroke problems.

Steps taken by Government

The government has mapped out ambitious environmental initiatives in recent five-year plans, although experts say few have been realized.

China's National Development and Reform Commission, the country's top economic planning agency, in December 2013 issued its first nationwide blueprint for climate change which is pointed some issues and solution that be achieve by 2020.

Since January 2014, the central government has requisite 15,000 factories, which is included large state owned enterprises to publicly report on their air emissions and water discharges.

Over the next five years The government has planned to spend S275 billion to clean the air. Chinese legislature more recently announced environment

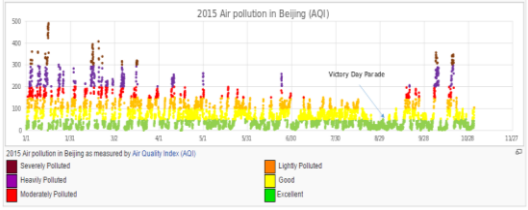
protection law to allow strict punishment for companies or individuals if they caught polluting the environment. As they promise to cut carbon intensity in the five years through 2015, could spending total 1.8 trillion RMB (S300billion) as China is one of the biggest investor in renewable sector. National Energy Administration, stated that in the first ten months of 2013 installed 57 percent electricity-generating capacity. To continue this process China is also reaching out and jointly working with international companies to create technologies says the Wilson Center's Turner. China recently made some improvements in environment protection, they are one of the few countries in the world rapidly increasing their forest cover. This progress reduce air and water pollution said World bank.

Quality of surface water in the south of China was improving and particle emissions were stable. But NO_2 and SO_2 emission is increasing. Capital of China is suffering of high level of air pollution. According to Reuters, on September 2013 the Chinese government make plan on official website how to reduce coal consumption by protecting mills, factories and smelters and switching to other eco-friendly energy sources. According to data from Beijing Municipal Environmental Protection Monitoring Centre (BMEMC), to celebrate 70th anniversary celebrations of the end of World War II in 20 August,2015 to achieve blue fine sky or say "Parade Blue" they shut down industrial facilities and reduced car emissions, result seen sharply that PM 2.5 concentration better than the 35 mg/m^3 national air quality standard. China now focusing to introduce new energy sources like nuclear, hydro, compressed natural gas instead of iron, steel, aluminum, cement, and no new thermal plan and cut coal consumption.

Four-color alert system

Beijing launched four-color alert system in 2013. Its show how clean or polluted the air based on the air quality index (AQI).

Japan and South Korea, China's neighboring country have also worried over acid rain and smog affecting their native populations. In May 2013, government official of these three countries added pollution and climate change in diplomatic list to find the way to solve the problem.



AQI	Description
101-150	Slight Pollution
151-200	Moderate Pollution
201-300	Heavy Pollution
301-500	Hazardous

Color	Condition
Blue	"Heavy pollution" in the next 24 hours
Yellow	"Hazardous" in the next 24 hours; or "Heavy pollution" for three consecutive days
Orange	Alternate "Heavy pollution" and "Hazardous" days for three consecutive days
Red	"Hazardous" days for three consecutive days

Bangladesh:

Pollution has become the most alarming situation now a days, Industrial revolution of 19the century led to environment disaster. The present condition of environment condition of Bangladesh is not at all equilibrium. Severe air, water and noise pollution are threatening human health, ecosystems and economic growth of Bangladesh. Due to increasing population, booming the industrial growth, burning fossil fuels and associated motorization. Water body is mainly polluted by industrial waste. Arsenic is one of the major concern for Bangladesh because it polluted underground water. Noise pollution is also treated a big matter here because of lack of awareness. Environmental degradation of Bangladesh is also caused due to poverty, over-population and lack of awareness and manifested by deforestation, destruction of wetlands, soil erosion and natural calamities.

DIFFERENT ASPECTS OF ENVIRONMENTAL POLLUTION

Air Pollution.

According to DoE, old, poor-unfit vehicles, brick kilns (currently 1000 around Dhaka), unplanned construction site and poor road spread large amount of dust , toxic fumes from industrial sites are major sources of air pollution.

Both outdoor and indoor air pollution is taking place in Bangladesh. Increased population, unfit vehicle emission, industrialization are caused outdoor air pollution at the same time biomass fuels during cooking with poor ventilation. The national ambient air quality standards of Bangladesh and amount of pollutants in the air of Dhaka city is shown

Table – 1: Bangladesh National Ambient Air Quality

Land use Category	8 hour average concentration in µg/m3			
	CO	NO_2	SPM	SO_2
Industrial/mixed use	5,000	100	500	120
Commercial/ mixed use	5,000	100	400	100
Residential/ rural use	2,000	80	200	80
Sensitive use *	1,000	30	100	30

Source: Department of Environment (DOE), 1997.

table-1:

*Sensitive areas include national monuments, health resorts, hospitals, archeological spots, and educational institutions.

Main Sources of Air Pollution.

Burning of Fossil Fuel.

Burning the fossil fuels like coal, petroleum etc and associated black smoke . Over 99% of brick kilns use fossil fuel but don't comply with the" Brick Kiln Ordinance" and pollute enormous air.

Industrial Discharge.

As emerging country different types of industries growing in Bangladesh which are not using eco-friendly energy system. There are many types of industry say Agro based industries like sugar, pulp, paper, tanneries and value added industries textile, garments, pharmaceutics, oil refineries, fertilizer and chemical industries are major sources for air pollution. In table 2 shows the five industrial sector which air pollution percentage described.

Table-2: Air Pollution Percentage of most Five Industrial Sectors of Bangladesh in the Year 2001

Industry	Emission (Tons/yr)	Pollution (%)
Food Industry	1,46,356.06	38.7
Cement/Clay	62,725.88	16.6
Pulp and Paper	51,963.92	13.7
Textile	39,831.01	10.5
Tobacco	16,992.22	4.5

Source: Research Work by Islam Faisal on " Industrial Pollution in Bangladesh" in the vear 2002.

Emission from Vehicles.

In urban cities in Bangladesh air polluted due to unburned fuel from two stroke engine vehicles. Dhaka has been rated as one of the most polluted cites of the world. Bangladesh Atomic Energy Commission report says that automobiles emit different particles like lead 100 kg, 3.5 tons SPM, 1.5 tons SO_2, 14 tons HC and 60 tons CO in every day. Table-3 shows air-pollution by different vehicles and amount of pollutants emit by vehicles.

Table-3: Contribution of Air Pollution by Vehicle Type

Type of Vehicle	CO (%)	HC (%)	NOx (%)	PM (%)	Annual Growth
Truck	13.4	8.6	59.7	47.5	7.8
Bus	10.3	9.7	18.5	29.4	2.5
Mini bus	7.3	3.9	6.5	19.1	6.8
Utility	6.3	4.4	2.8	0.7	10.2
Car	38.2	18.2	6.5	1.2	9.4
Three wheeler	10.6	26.9	6.0	1.2	31.0
Motor cycle	14.0	28.3	0.3	1.0	8.1

Source: Country Profile on Environment of Bangladesh by Japan International Cooperation Agency in the Year 1999.

Water Pollution.

Main Sources of Water Pollution:

Industrial Waste and Effluent.

Table-4: Water Pollution Percentage of most Five Industrial Sectors of Bangladesh in the Year 2001

Industry	Emission (Tons/yr)	Pollution (%)
Pulp and Paper	91,768.10	47.4
Pharmaceuticals	30,866.72	15.9
Metal	27,174.61	14.0
Food Industry	23,403.39	12.1
Fertilizers/Pesticides	12,715.00	6.6

Source: Research Work by Islam Faisal on " Industrial Pollution in Bangladesh" in the year 2002.

Dhaka, Chittagong, Khulna and Bogra districts are main industrial area in Bangladesh. Pulp and paper, food processing industry, pharmaceuticals, metal processing, fertilizer, pesticides, dyeing and painting, textile, tannery etc polluted the water. More than 200 rivers of Bangladesh directly-indirectly polluted by untreated industrial wastes and effluent.

Tanneries are one of the major alarming zone for environment in Bangladesh, about 700 tanneries of Dhaka city discharge 16000 cubic meters of toxic wastes. The Department of Environment (DOE) has listed 1,176 factories for pollution. Water pollution percentage of most five industrial sectors of Bangladesh in the year 2001 is shown table-4.

Tanneries(Leather Processing Zone)

Up to 95% of the registered tanneries in Bangladesh are located in and around Hazaribagh, a neighborhood in the country's capital of Dhaka. 22,000 cubic liters of toxic waste including hexavalent chromium which treated cancer causing agent into Dhaka's main river every day. Most tanneries uses outdated processing methods.

Pollute both air and water by burning scrap hides

Tannery waste flows through an open canal in Dhaka, Bangladesh

Solid Waste and Sewage Disposal.

The random discharge of solid waste, domestic and hospital dirt are the main source of water pollution in Bangladesh. Daily 4000-4500 tons of solid wasted

are generated and disposed only half of generated wastes in low lying areas or into river. This solid waste create problems of littering on roads, falling around the bins, clogging of drains, unsystematically dumping on empty places and cause pollution. According to World Bank study, 1.5 million cubic meters of waste from 7,000 industrial units in surrounding areas and 0.5 million cubic meters from other sources pollute four major rivers near Dhaka- namely the Buriganga, Shitalakha, Turag and Balu.

Inadequate Sanitary Facilities.

This happened only for huge population and lack of hygiene. Poor hygiene pose a serious environmental threat in Bangladesh. Dhaka Water and Sewerage Authority (DWASA) can put effort for 15 to 20% of city population. Lack of Sanitation and infrastructural services, 40% having septic tank and soak pit, 15% using pit latrines and 30% using open latrines. Sewage mainly disposed with untreated manner in low-lying area and river, which causing environment hazards.

Arsenic Contamination of Ground Water.

Arsenic is another health hazard substance. 97% people of Bangladesh using ground water as their main source of drinking water where water contaminated by arsenic severely. More than half (52%) of the studied population drink well-water containing >50ug/L of arsenic and more than two-thirds (70%) drink well-water containing >10ug/L of arsenic. The tolerable level of arsenic in the water is 0.05mg/L for Bangladesh but somewhere it found 70 times higher than that level.

Noise Pollution

Noise is also cross the acceptable level in Bangladesh and it is treated as pollution. According to World Health Organization (WHO), people can temporarily deaf by 60 decibel(DB) sound and 100 DB sound can cause complete deafness. Department of Environment (DOE) say accurate sound for Bangladesh is 45 DB for daytime and for night 35 DB in peaceful areas and for residential areas 50 DB for daytime and 40 DB for night. Mainly industries, motorized vehicles, construction works and indiscriminate use of loudspeaker. At recent time it is estimated that noise level in Dhaka city suffer from 60 to

100 decibel. If this situation continue then it is not very far away that 50% people in Dhaka city will loss 30 decibel hearing power by the year 2017. The daily variation of noise level near the road at some of the key locations of Dhaka city is shown below:

Table – 5A: Pollutants in the Air of Dhaka City. Table-5B: Pollutants in the Air of Dhaka City

Time Interval	Location		
	Gulistan	Science Lab	Saydabad
	Commercial	Mixed	Commercial
7am -11am	80.08	76.24	83.27
11am -3pm	79.34	75.19	83.89
3pm -7pm	81.13	77.23	84.37
7pm -1pm	78.52	75.32	82.08

Time Interval	Location			
	Farmgate	Dhan-mondi	Gulshan	Uttara
	Commer-cial	Residen-tial	Residen-tial	Residen-tial
7am - 11am	80.07	75.87	76.16	76.25
11am - 3pm	78.86	74.38	74.83	74.81
3pm - 7pm	81.96	75.21	76.11	76.81
7pm - 1pm	80.28	76.30	74.31	73.36

Source: Nazmul Chowdhury research on noise pollution in Dhaka city on Feb 2002.

EFFECT OF ENVIRONMENTAL POLLUTION

Severe environmental pollution is threatening human health and economic growth of Bangladesh. Air population is threatening condition in Bangladesh. Specially urban children become victim of this air pollution. It is said that indoor air pollution is more serious for health than outdoor pollution. If indoor air pollution in four major cities can reduce to acceptable limits then Bangladesh can avoid 10,000 death and save 200 to 500 million dollars a year.

Table-6: The death rate in the year 1996 due to environmental pollution

Causes of Death	National Level	Dhaka City
Death: All Ages (%)		
Cardiovascular	7.87	17.5
Asthma	5.2	4.3
Diarrhea	1.66	7.8
Cancer	4.05	5.3
Dysentery	4.05	5.5
Viral Hepatitis	2.14	3.4
Death: Less than One Year Infant (%)		
Anemia	4.77	6.5
Breathing problem	1.87	2.8
Diarrhea	18.96	17.5
Cancer	4.05	5.0
Dysentery	1.66	3.9
Viral Hepatitis	2.14	3.4

Source: Bangladesh Bureau of Statistics (BBS), Statistical Yearbook of Bangladesh 2001. Ministry of Planning. Dhaka 2002.

There are several symptom of air pollution or smoke inhalation say headache, vertigo, burning sensation of the eyes, sneezing, nausea, tiredness, cough etc. Asthma and bronchitis will be long term effect for this pollution. Lead is another particle may cause circulatory, nervous, reproductive system kidney failure and liver disease like liver cancer or cirrhosis. Carbon monoxide is dangerous for pregnant women because it hamper the expecting baby's growth and mental development .Nitrogen oxides cause bronchitis and pneumonia.

Industrial emission consists health damage substance and cause various waterborne diseases. Arsenic poisoning is slow and cumulative. It has also bad effect of human health like melanosis, kurtosis and conjunctivitis later other problems occurs namely respiratory problem, gangrene, skin, kidney and lung cancer would arise.

GOVERNMENTAL STEPS FOR POLLUTION CONTROL IN BANGLADESH

For environmental protection The Ministry of Environment and Forest (MOEF) of Bangladesh is primarily accountable for it formed in 1989. They have some rules to protect environment pollution.

National Environmental Management Action Plan (NEMAP).

The government has taken a project named NEMAP which maintain a guideline to monitor and protect environment through effective management of resources, raising awareness among people and to enhance to environmental degradation.

Control of Air Pollution.

The government of Bangladesh has customized environmental acts, rules and laws. There is Environmental court established to take timely legal action against environmental degradation. The DOE has been empowered to punish the offenders of environmental rules.

Control of Air Pollution.

DOE has recently took few action to carry out surveys on find out polluting industries, examining the use of compressed natural gas in industries, protect river to be polluted, automobile pollution, and also measure vehicular measurement at Dhaka city. Through this they are setting environmental standards and try to keep on this pollution,

Banning of Polyethylene Bags.

From 01 March 2002, government has banned the production of polyethylene bags up to 20 microns thick or less because Dhaka city sewage line have been blocked indiscriminate dumping of polyethylene bags over the years.

Urban Transport Project.

Main aim of this project is to improve traffic system, improve road network by constructing over bridges, underpasses and predict positive role for non-motorized transport.

Embargo on Import of Items.

The Bangladesh government has banned to import leaded petrol, high sulfur diesel and high sulfur coal. Instead of these government insist to use Compressed Natural Gas (CNG) to the automobiles. BRTA, Bangladesh Road Transport Authority has control the registration on two stroke three wheelers.

Control of River and Arsenic Pollution

In 1995 Bangladesh passed a law and bound compulsory for all industrial units to use effluent treatment plants to save river water from serious industrial discharge but most of the times industries are not follow the rules because they thought this plan is expensive, according data to Bangladesh Environment. Environmentalist propose to dredged the rivers fully and vacant the river side which is illegally occupied.

The Government taken four strategies to mitigate the arsenic problem, as follows:

1. To mark the contaminated tube wells with arsenic, then put red colour for danger one and green for safe ones.
2. Detect the reason of arsenic contamination, grow and plan awareness program among people about health and safe water.

Knowledge Enrichment Programme.

Environmental education program has been incorporated in primary and higher education. Now many universities launched environment subject and project. Government organization and NGOs has so many awareness program to mitigate this issues.

Rural Sanitation Programme.

Specially to mitigate rural sanitation problem The Government of Bangladesh has take as rural sanitation programme in October 2003 to implement the installation of twin pit latrine thus reduces infectious diseases and rural sanitation coverage.

AIR POLLUTION OF WORLD MEGA-CITIES

Environmental problems differ from one country to another. Cities in the South East Asia such as Delhi, Bangkok and Manila suffer from high levels of lead, particulate matter and oxides of sulfur. Beijing and Dhaka share same level pollution. Central and South American cities say Santiago and Mexico suffer frequent ozone problems. Air pollution in mega cities as follows:

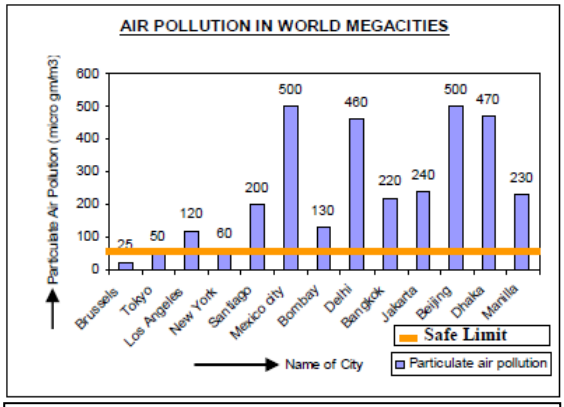


Fig 1. Comparison of Air Pollution in World Mega cities

Air Quality of Some Cities in China and Bangladesh:

10 cities with best air quality in China

1. Haikou, capital city of South China's Hainan province
2. Zhoushan, East China's Zhejiang province
3. Lhasa, capital city of Southwest China's Tibet autonomous region
4. Shenzhen, South China's Guangdong province
5. Zhuhai, South China's Guangdong province
6. Huizhou, South China's Guangdong province
7. Fuzhou, capital city of East China's Fujian province
8. Xiamen, East China's Fujian province
9. Kunming, capital city of Southwest China's Yunnan province
10. Zhongshan, South China's Guangdong province

10 cities with worst air quality in China

1. Baoding, North China's Hebei province
2. Xingtai, North China's Hebei province
3. Shijiazhuang, North China's Hebei province
4. Tangshan, North China's Hebei province
5. Handan, North China's Hebei province
6. Hengshui, North China's Hebei province
7. Jinan, East China's Shandong province
8. Langfang, North China's Hebei province
9. Zhengzhou, North China's Henan province
10. Tianjin

Daily Average Pollution

The world Health Organization (WHO) guidelines consider anything over 10 micrograms per cubic meter of PM 2.5 to be hazardous to health.

Sources: Chinese Ministry of Environmental Protection, American Lung Associa
Johnson/The W

Top vulnerable cities in Bangladesh

According to World Health Organization (WHO) stated that Narayangonj, Gazipur and Dhaka are among the top 25 most polluted cities in the world. Both air and water pollution became threaten human life daily. Arrow indicate two major polluted city in the map.

The Economic Cost of Environmental Degradation in China and Bangladesh

According to studies shown by Prof. Wang Hongchang and Ning Datong, and by Mr. Xia Guang, in China the yearly economic cost of environmental dreadful conditions can be demonstrate by income lost because of deforestation, environmental pollution and degradation of natural resources.

For the purposes of these studies, “loss” was described as the difference among potential and actual economic income resulting from environmental smash up.

The following tables summarize the sources of economic loss in 1992 Renminbi (billion yuan).

Table 7: Income Lost as a Result of Deforestation(Prof. Wang)

Effects of Deforestation	**1992 yuan (billions)**
Reduced Precipitation	81.00
Reduced Lumber Output	19.40
Desertification	18.81
Lost Water Run-off	66.70
Loss of Plant Nutirents to Erosion	41.00
Reservoir and Lake Sedimentation	0.80
Siltation of Previously Navigable Rivers	4.10
Property Loss Resulting from Flooding	13.40
Total	**245.20**

Table 8: Income Lost as a Result of Pollution
(Mr. Xia)

Water Pollution	**1992 yuan (billions)**
Impact on Human Health	
as a Result of Contaminated Food	2.41
as a Result of Contaminated Drinking Water	16.87
Impact on Industrial Output	13.78
Impact on Crop Yields	1.38
Impact on Livestock and Fisheries	1.16
Air Pollution	
Impact on Human Health	20.16
Impact on Agricultural Production	7.20
Impact on Materials	16.53
Acid Rain	14.00
Solid Waste Pollution	
Solid Waste	5.12
Total	**98.61**

Table 9: Income Lost as a Result of Natural Resource Degradation (Prof. Ning)

Arable Land	**1992 yuan (billions)**
Impact of Farmland Conversion	0.35
Impact of Soil Erosion	16.20
Impact on Reservoir Capacity and Waterways	3.8
Impact of Increased Soil Salinity	0.54
Desertification	
Impact on Availability of Arable Land	1.80
Impact on Agricultural Land Quality	12.00
Impact on Infrastructure	1.00
Rangeland	
Impact on Animal Husbandry	3.00
Impact on Quality of Forage	0.20
Total	**38.80**

Note that while some of the calculations in Prof. Ning's paper represent long-term losses, in the above table the figures represent annual losses only.

Table 10: Total Income Lost as a Result of Environmental Degradation

Income Lost as a Result of Deforestation	245.20
Income Lost as a Result of Pollution	98.61
Income Lost as a Result of Natural Resource Degradation	38.80
Total in 1992 yuan (billions)	**382.61**

An examination of these tables reveals deforestation as the greatest source of economic losses – almost double the total losses arising from environmental pollution and degradation of natural resources combined.

Here one thing is noted that some duplication occurs among the studies. For instance, both Prof. Wang and Ning work out the result of tank siltation and loss of soil nutrients. Prof. Wang notify the losses to deforestation, Prof. Ning point out the losses to excessive grazing and farming, and to wind erosion. In some environmental degradation cases this type of duplication is avoidable because some times for some specific cases it is difficult to distinguish.

The final conclusion is quite spectacular. On an yearly basis, fiscal losses to China as a result of environmental degradation alike 382.61 billion yuan. This outline stand for 18.9 of China's total national income (2022.3 billion yuan in 1992). This loss is point to; natural resource ruin— 1.9%; environmental pollution — 4.9%, and; deforestation — 12.1%.

At first peek the major losses attributed to deforestation look inflated. However, a close study of Professor Wang's research showed the correctness of his estimate. The troubling results of this study should serve to get up all Chinese to the extraordinary significance of a forestation.

Bangladesh

Air pollution is a big environmental problem in Bangladesh specially in big cities like capital Dhaka. World Bank stated that 15,000 premature death with million cases sickness happened occur yearly in Bangladesh because of air pollution and its economic cost is nearly USS 200-800 million per year which is almost 0.7 to 3% of country's total GDP (**World Bank Report 2007**)

Vehicle emission, traditional brick kiln emission, re-suspension of road dust, various construction works, biomass pollution etc. are the main sources of air pollution in Bangladesh.

The need of quality time-series data makes the economic losses in Bangladesh's fisheries hard to quantify. On the whole it is known that during the period 1999-2002 the Hilsa catch reduced by as much as 50% from earlier levels. It is added known that major reject have occurred in the major and minor carp fisheries since the 1970's. Estimates by a variety of authors propose that historical declines in the inland fisheries amount to 30%, while the peak of sea capture fishery is known to have happened in the 1990's. As Table 1 show, the annual losses for the type shown could be in the order of US$ 42 million per year. Applying an average economic value for the decline in all capture fishery species of US$2,232 per tonne 89 to the annual losses shown in Figure 1 suggests that the lost production amounts to some $56 million per year, which probably understates the broader economic losses to fishers and the nation as a whole.

Table 11: Estimated Physical and Financial Loss due to Declining Production

Species	Maximum Annual Production 1999-2002 (mt)	Average Annual Production 19 99-2002 (mt)	Production 2002 (mt)	Physical Production Loss (mt)		Annual Production Loss ($)
				Based on Maximum Production (mt)	Based on Average Production (mt)	Based on Average Production (US$)
Major Carps	9,639	2,780	1,443	8,196	1,337	1,586,271
Other Carps	3,594	1,345	382	3,212	968	984,203
Inland Hilsha	112,408	79,616	62,944	49,464	16,672	39,560,441
Indian Salmon	2,428	1,129	930	1,498	199	675,330
All Species						$42,806,245

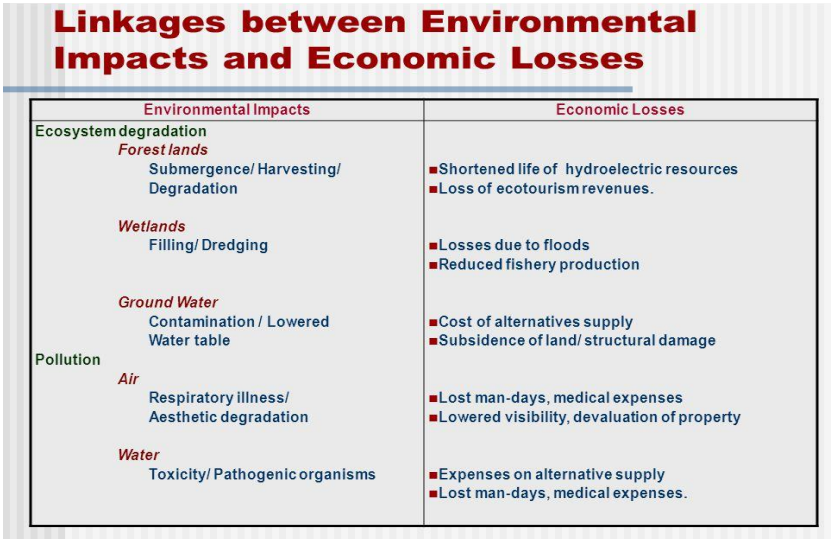
Source: FRSS data

The environmental selected for investigation in the CEA were selected jointly by MoEF and the World Bank stand on their significance to increase and poverty decline, as well as a consideration of the extra value of further study. These criteria led to the collection of the following five topics:

- environmental hazard to human health;
- protection of water quality in Dhaka;
- management of capture fisheries;
- sustaining soil quality; and,
- increase institutions for environmental organization.

The economic costs associated with these sources of environmental degradation may amount to more than 4% of GDP. The estimated share of each factor is indicated in Figure 2, below.

	Share by Source
Share of GDP 4.3%	Capture Fisheries 2.5%
	Arsenicosis 3%
	Dhaka Surface water quality 16.5%
	Indoor Air Pollution 21%
	Urban Air Quality 23%
	Water Supply and Sanitation 34%



Source: Dr.vinod. B. Mathur, Prof. and Dean, wildlife Institute of India,Dehradun

SUGGESTED STEPS FOR POLLUTION CONTROL BOTH CHINA AND BANGLADESH

Both Government of China and Bangladesh taken steps to improve the pollution and environment get its real feature. But as we saw the environment data and condition these steps are not enough adequate.

As such, few more steps may also be taken to improve the environmental degradation:

Use of Environmental Technologies and Methods.

As we know China is much more rich country than Bangladesh but still they need to run a long way to fight with environmental pollution thus they should think and adapt new Environmental technologies and methods.

In the case of Bangladesh they should much aware about it because if it become more complicated it will big burden for Bangladesh to fight against it. To integrated policy formulation, decision-making, evaluation and monitoring of environment Bangladesh should practice Geographic Information Systems (GIS), remote sensing and environmental impact assessment.

Development of Environmental Database.

A comprehensive environmental database may be made and the environmental planner have that right for planning, management, environmental up-gradation etc. The data base should updated regularly.

Environmental Education and Awareness.

Awareness program whatever formal and informal methods of education can be adopted, local media, seminars, celebrations, workshops, walks and student competitions, advertisement. Both countries can use public figure through awareness program, as they are using their popularity and enhance the environment awareness among people more than government or other agencies.

Industrial and Solid Waste Management.

The government can take right measures to watch emission limits and Market based incentives (MBI) for mitigate pollution. Technical and financial support should given industries thus they can introduce mitigation measures, green technologies and recycling the waste.

Enforcement of Rules and Regulation.

Rules should be strict because both countries facing some problems that pollutant groups defy such orders by using their political links or by bribing people.

Urban Transport Management.

Vehicle emission standards should be build up, through investigation have to make emission inventory.

For Bangladesh old vehicles, two-stroke engine vehicles should replace to improve air pollution and promote eco-friendly vehicle as soon as possible for urban transport mangement.

Government must take necessary steps to remove sulfur content from diesel through hydro-desulphurization (HDS) process. The government must also enforce the vehicle manufacturers to install catalytic converters in every vehicle to reduce the vehicular emissions.

Banned Items:

Both in China and Bangladesh still found some banned chemical or pesticide and very old method for cultivation or processing method. Law should be strict here.

2015, UNITED NATIONS CLIMATE CHANGE CONFERENCE

From 30 November to 12 December 2015, The **United Nations Climate Change Conference 2015**, **COP 21** or **CMP 11** was held in Paris, France. This conference was 21st yearly session of the Parties (COP) to the United Nations Framework 1992 Convention on Climate Change (UNFCCC) and it was the 11th session of the Meeting of the Parties to the 1997 Kyoto Protocol.

The goal of this conference was to reduction of climate change and 196 parties attending it.

Conference Outcome

All attending parties agreed by consensus to the final global pact, the Paris Agreement that

1. Reduce Emission
2. Reducing greenhouse gas
3. Through 12 page document, members agreed to reduce carbon output soon.
4. And all agreed to do best to keep control on global warming.

CONCLUSION

Environmental issues have become a major concerns due to impact on public health and development of both China and Bangladesh. Due to this alarming condition global warming is the main headache for Environment experts, day by day this planet get warmer every year. For green house gas make hole in Ozone level. Air and water pollution, groundwater contamination, solid wastes and noise pollution are the main environmental pollutions in recent days. Beijing

(Capital of China) and Dhaka(Capital of Bangladesh) City are top most polluted cities in the world. As the matter of air pollution China's air mainly polluted from industrial discharge on the other hand Bangladesh air polluted by large amount of unfit vehicle and industrial emission. Urban people of these two countries are specially aware of pollution and they want clean and safe environment. Although both China and Bangladesh made so many rules against pollution but still they need to go a long way. More and more awareness program should be introduced all over the country. Both countries are heavily depend on industrialization, so many people are just live on it and enhance their economic condition. Government as well as other organizations must take adequate steps to reduce the environmental pollution. Nothing is impossible say like Singapore, once their river was very polluted but with their hardship and will power they able to clean it and now turned it into a great resource.

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